



**City of Sutherlin
City Council Meeting
Monday, February 12, 2024
Civic Auditorium – 7:00 p.m.**

AGENDA

Mayor Michelle Sumner

Council President Hamilton

Councilors Dagel, Groussman, Smalley, Whitaker and Woods

1. CALL TO ORDER / FLAG SALUTE

2. ROLL CALL

3. INTRODUCTION OF MEDIA

4. PUBLIC COMMENT

[The purpose of citizen comment is to allow citizens to present information regarding agenda items only. A time limit of three minutes per citizen shall apply.]

5. PRESENTATION

- a. Sutherlin Area Chamber of Commerce

6. CONSENT AGENDA

- a. January 8, 2024 – Meeting Minutes

7. COUNCIL BUSINESS

- a. Budget Calendar Approval 2024-25 FY
- b. Resolution 2024.02 – Surplus Property – Fire Department Equipment
- c. Resolution 2024.03 – Surplus Property – Public Works Equipment
- d. Resolution 2024.04 – Appropriations Transfer
- e. Purchase Approval – Solar Bees Mixer
- f. Parks Advisory Committee Appointment

8. REPORTS

- a. Waite Street Improvement Update

9. WORKSHOP

- a. Kittelson Update
- b. Housing & Homelessness Task Force
- c. Hastings Village New Structure

10. CITY MANAGER REPORT (verbal)

- a. PILT Discussion

11. CITY COUNCIL COMMENTS

12. PUBLIC COMMENT

[The purpose of citizen comment is to allow citizens to present information regarding items off the agenda. A time limit of three minutes per citizen shall apply.]

13. ADJOURN

EXECUTIVE SESSION

ORS 192.660(2)(e) – Real Property Transactions

Zoom Meeting

<https://us06web.zoom.us/j/82521155465?pwd=SSSY6vkGCmu85BD6Y9SjL1JzAOJj.1>

Members of the audience who wish to address the Council will be invited to do so. Speakers must use the microphone stating their name and address prior to addressing the Council.



Call to Order & Flag Salute





ROLL CALL





Introduction Of Media





PUBLIC COMMENT

Agenda Items only





PRESENTATIONS





Sutherlin Area Chamber of Commerce Update





Consent Agenda



CITY OF SUTHERLIN
City Council Meeting
Civic Auditorium
Monday, January 8, 2024 – 7:00pm

COUNCIL MEMBERS:

Gary Dagel, Joe Groussman, Debbie Hamilton, Shawn Smalley, Larry Whitaker, and Lisa Woods

MAYOR: Michelle Sumner

CITY STAFF: City Manager, Jerry Gillham

City Recorder, Melanie Masterfield

Finance Director, Tami Trowbridge - *Excused*

Finance & Administrative Asst., Lindsay Priest

Public Works Director, Aaron Swan

Community Development Director, Kristi Gilbert

City Planner, Jamie Fugate

Police Chief, Troy Mills - *Excused*

Deputy Fire Chief, Scott McKnight

Livability Services Director/Library Director, Pat Lynch

City Attorney, Chad Jacobs (via Zoom)

Audience: Maryanne Anderson, Kristine Godby, Jan Turley, Jeanie Owen, Wayne Ellsworth, Theresa Call, Gail Kuntz, Sheri Esterbrook, Linda Zumwalt, John Banducci, Robert Moczowski, Chris Owens, Brent & Anita Hunsaker, Sherrie Rasmussen, Barbara Camin, Gene Coufal, Jim Smalley, Willie Caldwell, Grant Fahey, Nancy Anderson, Deon Meyer, Steve Simmons, Chris Hunter, Mary Dennis, Dian Cox, Terry Brock, Valerie Shepherd

Via Zoom: Karen Moczowski, Karen Meier, Larry Bahr, Brian Dunsing, Peter Duncan, Scott Carroll, Crystal Cunningham, Anna, Eileen Smalley

Meeting called to order by Mayor Sumner at 7:00 p.m.

Flag Salute:

Roll Call: Councilors Smalley & Groussman via Zoom

Introduction of Media: None

****Mayor Sumner made an announcement for Zoom attendees****

PUBLIC COMMENT (agenda items only)

- John Banducci – Spoke in favor of a traffic signal vs a roundabout at the Dakota Street intersection.
- Jim Smalley - Encouraged Council to consider holding a workshop for Kittelson & Associates to present information in favor of a roundabout.
- Steve Simmons - Expressed concern for an immediate need for a traffic signal at Dakota Street.

PRESENTATIONS

- **Sutherlin Sanitary Rates**
 - Grant Fahey from Sutherlin Sanitary gave supporting reasons for a rate increase.
 - ❖ Increased equipment cost.
 - ❖ Pay increases to match current rates in the industry.
 - ❖ Oregon Family Leave Act has created the need for three additional employees for shift coverage.
 - Councilor Woods – Is there a backup plan if the rate increase is not approved? *We may be able to get by with hiring two people.*
 - Mayor Sumner – Are you asking all your service areas for an 8% rate increase? *Yes.* Mayor Sumner proposed a free dump day, free pick-up day once a year, or free large item pick up day twice a year. *Yes, options can be explored. The franchise agreement can be amended with the City.*

- Councilor Hamilton - When was the last rate increase? *About 16 months ago.*
- Mayor Sumner – What percent was the last rate increase? *About 7 or 8%.*
- Councilor Dagel – What will the actual increase be? *About \$1.50 for a 35-gallon trash can.*

CONSENT AGENDA

- **December 11, 2023 Minutes – Regular Meeting**

MOTION made by Councilor Whitaker to approve Consent Agenda as presented; second by Councilor Hamilton.

Discussion: None

In favor: Councilors Groussman, Hamilton, Woods, Dagel, Whitaker, Smalley and Mayor Sumner

Opposed: None

Motion carried unanimously.

COUNCIL BUSINESS

- **Ordinance No. 1094 – Amending SMC Chapter 8.26 – Regulating Outdoor Burning (second reading & adoption)**

City Recorder, Melanie Masterfield, read Ordinance by title only: *“An ordinance of the City of Sutherlin amending chapter 8.26 of the Sutherlin municipal code – regulating outdoor burning.”*

Staff Report – Deputy Fire Chief, Scott McKnight – Let the staff report stand and was available for questions.

MOTION made by Councilor Hamilton to approve Ordinance No. 1094 – Amending SMC Ch. 8.26 – Regulating Outdoor Burning (second reading & adoption) as presented; second by Councilor Woods.

Discussion: None

In Favor: Councilors Groussman, Hamilton, Woods, Dagel, Whitaker, Smalley and Mayor Sumner

Opposed: None

Motion carried unanimously.

- **Ordinance No. 1095 – Plan Amendment and Zone Change – Fir Grove Properties (second reading & adoption)**

City Recorder, Melanie Masterfield, read Ordinance by title only: *“An ordinance amending the City of Sutherlin comprehensive plan map and zoning map to amend the comprehensive plan map from low density hillside to medium density, concurrent with a zoning map change from (RH) residential hillside to (R-2) medium density residential. Property described as tax lot(s) 201, 300, and 400 in section 19C of T25S, R05W, W.M. The subject 3.81-acre property is located at 842; 880; 940 Fir Grove Land and described herein.”*

Staff Report – City Planner, Jamie Fugate – Stipulated the staff report on record and was available for questions.

MOTION made by Councilor Witaker to approve Ordinance No. 1095 – Plan Amendment and Zone Change – Fir Grove Properties (second reading & adoption) as presented; second by Councilor Hamilton.

Discussion: None

In Favor: Councilors Groussman, Hamilton, Woods, Dagel, Whitaker, Smalley and Mayor Sumner

Opposed: None

Motion carried unanimously.

- **Board & Committee Appointments and Re-appointments**

Staff Report – Masterfield – There are four vacancies on the Library Advisory Board and three vacancies on the Parks Advisory Board. The City received two applications for re-appointment on the Library Advisory Board from Kish Doyle and Nancy Anderson. Both terms end December 31, 2027. The City also received two applications for re-appointment on the Parks Advisory Board from Tabbitha Layman and Craig Hoobler. Both terms end December 31, 2025.

Mayor Sumner invited applicants to speak on their behalf.

- Nancy Anderson introduced herself and spoke about her personal experience being a part of the Sutherlin Library.

MOTION made by Councilor Dagel to appoint Kish Doyle and Nancy Anderson to the Library Advisory Board, terms ending December 31, 2027; and appoint Tabbitha Layman and Craig Hoobler to the Parks Advisory Committee, terms ending December 31, 2025; second by Councilor Hamilton.

Discussion: None

In Favor: Councilors Groussman, Hamilton, Woods, Dagel, Whitaker, Smalley and Mayor Sumner

Opposed: None

Motion carried unanimously.

- **Resolution 2024.01 - Sutherlin Sanitary Rates**

Staff Report – City Manager, Jerry Gillham – Staff did not feel it was their role to provide a recommendation for this Resolution. This is Councils decision to approve, amend, or not approve a rate increase.

MOTION made by Councilor Woods to approve Resolution 2024.01 – Sutherlin Sanitary Rates contingent upon offering Sutherlin customers one of the options discussed during the presentation; second by Mayor Sumner.

Gillham asked for Council direction to move forward with adding verbiage in the franchise agreement. **Council unanimously agreed.**

Discussion: Further discussion ensued between Council and Fahey.

In Favor: Councilors Groussman, Hamilton, Woods, Dagel, Whitaker, Smalley and Mayor Sumner

Opposed: None

Motion carried unanimously.

REPORTS

- **Kittelson Update – Dakota Street Intersection**

Staff Report – Community Development Director, Kristi Gilbert – Local business and property owners requested Council postpone any decisions to allow Kittelson & Associates to present their final interchange design study for a roundabout at the Dakota Street intersection. Chris Hunter from ODOT was available for questions. He reiterated that a traffic signal is approved for installation and can happen soon vs a roundabout that will take an estimated 20-30 years.

- Councilor Dagel questioned why a roundabout is a topic of discussion.
- Councilor Hamilton does not agree with moving forward with a roundabout presentation.
- Councilor Woods – What is the cost of installation for a traffic signal? **Hunter – An estimated \$1.5-2 million.**
- Councilor Groussman pointed out the concern of wetlands. Suggested moving the traffic signal to a different location. **Hunter – The amount of traffic at that location qualifies for a traffic signal. Gilbert – A traffic signal causes less of an impact on surrounding businesses.**
- Councilor Smalley – Agrees that the intersection needs traffic control. Supports hearing a presentation for a roundabout.

Further discussion ensued.

Council consensus is to move forward with a traffic signal and will plan a workshop to listen to Kittelson & Associates presentation.

WORKSHOP

- **Housing & Homeless Task Force**

Gillham discussed during City Manager Report.

CITY MANAGER REPORT (verbal)

- Gillham - City staff along with Mayor Sumner and Council Woods are looking at developing a ‘Workforce Housing’ development with multiple agencies to provide affordable housing for workers in Sutherlin. This would be available to all Sutherlin residents including individuals who have graduated out of the homeless camp. Staff would like community members to also be a part of this task force. Council consensus is to move forward with this plan.
- Livability Services Director, Pat Lynch – Sutherlin’s current vacancy rate is 1.5%. Workforce Housing and the Housing & Homeless Task Force will be instrumental in making this successful and building our community.
 - Councilor Whitaker – Where will the funds come from to build this? **Lynch - The state has declared housing an emergency, and there are state and federal programs available for Workforce Housing.**

CITY COUNCIL COMMENT

Councilor Groussman

- Nothing to report.

Councilor Hamilton

- Nothing to report.

Councilor Woods

- Volunteer positions are available on committees with the City for those wanting to get involved.

Councilor Dagel

- The uncleanliness of Hastings Village needs to be addressed.
- Ford's Pond was packed on New Year's Day. It will be a great asset to the City.

Councilor Whitaker

- Nothing to report.

Councilor Smalley

- Agrees with Sutherlin Sanitary rate increase but doesn't agree with asking them for something in return.

Mayor Sumner

- Happy New Year
- Coffee with the Mayor is now at Backside Outpost, come join. First Saturday every month 10-11:30am

PUBLIC COMMENT (Off Agenda Items)

- Karen Meier – When will Hastings Village be cleaned up? ***Public Works Director, Aaron Swan – Equipment cannot be brought in until around May when the ground dries out.***

Gillham discussed new rules and regulations for Hastings Village while continuing to negotiate terms with Umpqua Heart.

Umpqua Heart Board Member, Wayne Ellsworth – The contained housing units are providing a step up for the individuals who are engaging in programs to work towards getting out of homelessness. There are not enough staff working these support services to provide more help for individuals.

****Mayor announced that Council will recess into Executive Session called under ORS 192.660(2)(e) – Real Property Transactions – To deliberate with persons designated by the governing body to negotiate real property transactions. Representatives of the news media and designated staff shall be allowed to attend the executive session. All other members of the audience are asked to leave the room.**

ADJOURNMENT

With no further business, meeting adjourned at 8:23 p.m.

EXECUTIVE SESSION:

Executive Session called to order at 8:29 p.m.

Executive Session adjourned at 8:54 p.m.

Approved:

Jerry Gillham, City Manager

Respectfully submitted by,

Melanie Masterfield, City Recorder, CMC

Michelle Sumner, Mayor



COUNCIL BUSINESS



**City of Sutherlin -Revised
Proposed Budget Calendar (Fiscal Year 2024-25)**

Event	Attendees	Planned Date(s)	Latest Date
Estimate current year-end revenue and expenditures	Dept Heads	Mar 15	Mar 29
Requested budget prepared and provided to finance	Dept heads	Mar 29	Apr 5
Update CIP	City Mgr, Dept heads	Apr 3	Apr 17
Dept meetings with City Manager and Finance	Dept heads, staff, City Mgr	Week of Apr 8	Apr 19
Budget narratives completed	Dept heads	Apr 17	Apr 24
Update year-end revenue and expenditure estimates	Dept heads	Monthly	Monthly
Publish “Notice of Budget Committee Meeting” (ORS 294.426)	Finance	5-30 days before meeting, 10+ days on website	5-30 days before meeting, 10+ days on website
Provide proposed budget (ORS 294.408) and budget message to budget committee	Mayor, City Council, City Mgr, Budget Committee	May 13	May 13
First budget committee meeting (ORS 294.408 and 294.426)	Budget Committee, City Mgr, Dept heads	May 20	May 20
Additional budget committee meetings (if necessary) (ORS 294.428)	Budget Committee, City Mgr, Dept heads	May 21, May 22	May 21, May 22
Budget committee approves budget (ORS 294.428)	Budget Committee	No Later than May 22	May 22
Publish “Notice of Budget Hearing” (ORS 294.438, 294.448) (LB1)	Finance	5-30 days before meeting, 10+ days on website	5-30 days before meeting, 10+ days on website
City Council hold public hearing; adopts budget; levies taxes (ORS 294.456)	City Council	Jun 10	Jun 10
Adopted budget goes into effect	City	Jul 1	Jul 1
Adopted budget submitted to County Assessor (LB50) and Department of Revenue (ORS 294.458) (w/Resolutions)	Finance	Jul 15	Jul 15



126 E. Central Avenue
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City of Sutherlin

STAFF REPORT					
Re: Resolution 2024.02 - Surplus Property & Sale				Meeting Date:	02/12/2024
Purpose:	Action Item <input checked="" type="checkbox"/>	Workshop <input type="checkbox"/>	Report Only <input type="checkbox"/>	Discussion <input type="checkbox"/>	Update <input type="checkbox"/>
Submitted By: Deputy Fire Chief Scott McKnight				City Manager Review	<input checked="" type="checkbox"/>
Attachments: Resolution 2024.02					

WHAT IS BEING ASKED OF COUNCIL?

To approve the surplus of a 2007 Ford F-450 extended cab brush unit and sale of unit to Fair Oaks Fire District for \$28,000.

EXPLANATION

With the purchase of the two new brush rigs over the last couple of years and receiving the Type 3 Wildland Engine from the Oregon State Fire Marshal Office, there is no need to keep the 2007 Ford F-450 Extended cab brush unit. We are asking council to surplus this fire unit. We would like to sell the above unit to Fair Oaks Fire District for \$28,000. The blue book value for the cab and chassis is \$21,000 and the value for the pump and tank slide-in unit is \$7,000 for a total of \$28,000.

OPTIONS

N/A

SUGGESTED MOTION(S)

Approve Resolution 2024.02 – Surplus Property - 2007 Ford F-450 Brush Unit and Sale to Fair Oaks Fire District for \$28,000.

Not approve Resolution 2024.02 – Surplus Property – 2007 Ford F-450 Brush Unit and Sale to Fair Oaks Fire District for \$28,000.

RESOLUTION NO. 2024.02

**A RESOLUTION OF THE CITY OF SUTHERLIN CONCERNING CERTAIN
PERSONAL PROPERTY TO BE DECLARED SURPLUS PROPERTY, AND
AUTHORIZING ITS DISPOSAL AND RESALE**

WHEREAS, under provisions of City Code Section 2.40, the City Manager is authorized to dispose of surplus personal property through sale by auction, by negotiated sale without competitive bids, or by donation; and

WHEREAS, the Fire Department has determined that vehicle: 2007 Ford F-450 Brush Unit VIN: 1FDXX47R48EC93806 is no longer needed for the public purpose for which it was acquired; and

WHEREAS, the City Manager, as requested by the Fire Department has determined that this vehicle can be disposed of by sale to the Fair Oaks Fire District, for \$28,000; and

WHEREAS, the City Manager seeks city council authorization to surplus: 2007 Ford F-450 Brush Unit VIN: 1FDXX47R48EC93806, and the Fire Department will subsequently sell this “surplus” equipment to the Fair Oaks Fire District for \$28,000.

**NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SUTHERLIN
AS FOLLOWS:**

Section 1: City council hereby acknowledges that 2007 Ford F-450 Brush Unit VIN: 1FDXX47R48EC93806 is no longer needed for the public purpose for which it was acquired and is hereby declared to be surplus personal property of the City of Sutherlin.

Section 2: The City Manager shall authorize the sale of this vehicle to the Fair Oaks Fire Department.

PASSED BY THE CITY COUNCIL ON THIS ____ DAY OF ____, 2024

APPROVED BY THE MAYOR ON THIS ____ DAY OF ____, 2024

Michelle Sumner, Mayor

ATTEST:

Melanie Masterfield, City Recorder, CMC



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City of Sutherlin

STAFF REPORT					
Re: Resolution 2024.03 - Surplus Property				Meeting Date:	2-12-24
Purpose:	Action Item x	Workshop <input type="checkbox"/>	Report Only	Discussion <input type="checkbox"/>	Update <input type="checkbox"/>
Submitted By: Aaron Swan				City Manager Review	<input checked="" type="checkbox"/>
Attachments: Resolution 2024.03					

WHAT IS BEING ASKED OF COUNCIL?

To approve the surplus of a New Age 325 kw generator and a 1990 206 Case 580k Backhoe.

EXPLANATION

These items of rolling stock are no longer used or needed by the city.

OPTIONS

N/A

SUGGESTED MOTION(S)

Approve Resolution 2024.03 – Surplus Property – New Age 325 kw generator & a 1990 206 Case 580k Backhoe.

No approve Resolution 2024.03 – Surplus Property – New Age 325 kw generator & a 1990 206 Case 580k Backhoe.

RESOLUTION NO. 2024.03

**A RESOLUTION OF THE CITY OF SUTHERLIN CONCERNING CERTAIN
PERSONAL PROPERTY TO BE DECLARED SURPLUS PROPERTY, AND
AUTHORIZING ITS DISPOSAL.**

WHEREAS, under provisions of City Code Section 2.40, the City Manager is authorized to dispose of surplus personal property through sale by auction, by negotiated sale without competitive bids, or by donation; and

WHEREAS, the Public Works has determined that vehicle: 206 Case 580k backhoe VIN: jab0002874 and New Age 325 kw Generator serial #4831/7420 are no longer needed for the public purpose for which they were acquired; and

WHEREAS, the City Manager, as requested by the Public Works Department has determined that this equipment can be disposed of by sale at auction; and

**NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SUTHERLIN
AS FOLLOWS:**

Section 1: City council hereby acknowledges that 1990 Case 580k Backhoe Vin: jab0002874 and New Age 325 kw Generator serial #4831/7420 are no longer needed for the public purpose for which they were acquired and is hereby declared to be surplus personal property of the City of Sutherlin.

Section 2: The City Manager shall authorize the sale of these items at auction.

PASSED BY THE CITY COUNCIL ON THIS ____ DAY OF ____, 2024

APPROVED BY THE MAYOR ON THIS ____ DAY OF ____, 2024

Michelle Sumner, Mayor

ATTEST:

Melanie Masterfield, City Recorder, CMC



City of Sutherlin

STAFF REPORT					
Re: Resolution 2024.04 – Appropriations Authority Amending 2023-24 Budget				Meeting Date:	2-12-24
Purpose:	Action Item x	Workshop <input type="checkbox"/>	Report Only	Discussion <input type="checkbox"/>	Update <input type="checkbox"/>
Submitted By: Tami Trowbridge, Finance Director				City Manager Review	<input checked="" type="checkbox"/>
Attachments: Resolution 2024.04					

WHAT IS BEING ASKED OF COUNCIL?

Consider approving Resolution 2024.04 – Appropriations Transfer for FY 2023-24 and amending the 2023-24 budget as described herein.

EXPLANATION

This Resolution is necessary because of the unforeseen circumstances as presented in the resolution: Closure of an employee legal issue, additional Insurance premium, staff turnover in the Fire Department and the Status Change of the City Manager. The City can accommodate the needed changes by accessing the General Fund's Contingency Appropriation. This transfer would be in compliance with Oregon Budget Law.

OPTIONS

Adopt Resolution 2024.04 - Transferring Appropriation Authority, Amending the 2023-24 Budget, and Amending Resolution 2023.07 as presented.

Do not adopt Resolution 2024.04 - Transferring Appropriation Authority, Amending the 2023-24 Budget, and Amending Resolution 2023.07 as presented.

SUGGESTED MOTION(S)

Move that Resolution 2024.04 – Transferring Appropriation Authority, Amending the 2023-24 Budget, and Amending Resolution 2023.07 be adopted as presented.

RESOLUTION NO. 2024.04

A RESOLUTION TRANSFERRING APPROPRIATION AUTHORITY, AMENDING THE 2023-2024 BUDGET AND AMENDING RESOLUTION 2023.07.

The City Council of Sutherlin finds that:

- A.** ORS 294.463(2) permits local jurisdictions to increase total expenditures of a fund or an object classification by transferring appropriation authority from one object classification to another.
- B.** ORS 294.463 (1) requires the adoption of a resolution or ordinance to authorize an appropriation transfer. The resolution or ordinance must state the need for the transfer, the purpose of the expenditure, and the amount to be transferred.
- C.** Due to the closure of an employee legal issue, there is an unforeseen insurance deductible which we need to cover from the General Fund of \$4,800. There was also an unforeseen premium associated with other insurance changes of \$5,000. Totaling to \$9,800.
- D.** Due to the unforeseen events of longtime employees leaving the Fire Department, the City needs to augment its “Personal Services” budget in that department to cover all related payroll expenses by \$20,000.
- E.** Due to the unforeseen status change of the City Manager, the City needs to augment its “Personal Services” budget in that department to cover all related payroll expenses by \$27,800.
- F.** The City can accommodate the needed changes by accessing the General Fund’s contingency account by \$57,600.
- G.** This transfer of appropriation authority would be in compliance with Oregon Budget Law.

NOW, THEREFORE, based upon the above findings,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SUTHERLIN, a municipal Corporation of the State of Oregon, as follows:

Section 1. That the budget for the City of Sutherlin for the fiscal year 2023 - 2024, which was adopted by the City Council on June 12, 2023 and is now on file in the office of the City Recorder of the City of Sutherlin, be hereby amended as follows:

General Fund (Fund 10):	Adjustment	As Amended
Appropriations:		
Contingency (Dept 09)	\$ (57,600)	\$ 6,400
Material & Services (Dept 09)	\$ 9,800	\$ 453,860
Personal Services (Dept 13)	\$ 20,000	\$ 998,640
Personal Services (Dept 02)	<u>\$ 27,800</u>	<u>\$ 203,000</u>
Total Appropriations:	\$ 0	

PASSED BY THE CITY COUNCIL ON THIS ____ DAY OF ____, 2024

APPROVED BY THE MAYOR ON THIS ____ DAY OF ____, 2024

Michelle Sumner, Mayor

ATTEST:

Melanie Masterfield, City Recorder, CMC



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STAFF REPORT					
Re: Purchase Approval – Solar Bees Mixers				Meeting Date:	02/12/2024
Purpose:	Action Item <input checked="" type="checkbox"/>	Workshop <input type="checkbox"/>	Report Only <input type="checkbox"/>	Discussion <input type="checkbox"/>	Update <input type="checkbox"/>
Submitted By: Deputy Fire Chief Scott McKnight				City Manager Review	<input checked="" type="checkbox"/>
Attachments: Buyout Proposal					

WHAT IS BEING ASKED OF COUNCIL?

To consider purchasing the Solar Bees Mixers in the amount of \$100,220 from Ixom Water Care Inc. to use at Cooper Creek Reservoir.

EXPLANATION

The Solar Bees mixers were rented last year on a trial basis as an experiment to see if they would help the raw water quality at Cooper Creek Reservoir. Our engineers and staff feel that they helped enough to move forward with the purchase.

OPTIONS

N/A

SUGGESTED MOTION(S)

Approve the purchase of two Solar Bees Mixers from Ixom Water Care Inc. in the amount of \$100,220.

Not approve the purchase of two Solar Bees Mixers from Ixom Water Care Inc. in the amount of \$100,220.



IXOM Watercare Inc.
3225 Hwy 22, Dickinson ND 58601
866-437-8076 •
watercare@ixom.com

Buyout Ouotation: Reservoir Circulation Equipment for Cooper Creek Reservoir

Date: January 17, 2024

Proposal Expiration Date: February 16, 2024

Project #: 67792

To: Tyler J. Molatore, P.E.
The Dyer Partnership Engineers & Planners, Inc.
759 W. Central Ave Sutherlin, OR 97479
Tmolatore@dyerpart.com • 541-459-4619

From: Harvey Hibl, IXOM Regional Manager, Mesa AZ
harvey.hibl@ixom.com • 303-887-5323

Lauren Stegeman, IXOM Sales and Service Dept., Dickinson, ND
lauren.stegeman@ixom.com • 866-437-8076

Location Information

Reservoir Name: Cooper Creek Reservoir

Surface Area (Acres): 117.9ac

GPS: 43.380326°, -123.280481°

Deepest Depth (Feet): 55ft

Customer Objectives

To provide Hypolimnetic Circulation in order to improve deep-water dissolved oxygen levels to reduce manganese (Mn) and iron (Fe) issues.

Buyout Pricing for Solar-Powered Machines:

PN	Qty	Equipment Description	Equipment Total
101315	2	SB10000LS v20 SolarBee Mixers: Including High torque, direct drive (no gearbox), low voltage brushless D.C. motor, and SCADA brain-board with six outputs.	Included
101747	4	36" Diameter Intake Hose Assemblies:	Included
102359	2	Short Scope Mooring Systems:	Included
100523	8 Sections	Anchor Chain, priced in 20' increments:	Included
14508430	2	Accessory Package 2a: Onboard Wireless Transceiver	Included
14508431	1	Accessory Package 2b: PLC/RTU Wireless Transceiver	Included
Equipment Subtotal:			\$117,328
50% of Rents Paid:			(\$17,108)
Applicable Taxes:			-to be determined -
Buyout Total Cost:			\$100,220

Rental Conversion to Purchase: The renter may convert this rental to a purchase at the price shown in the Equipment Purchase section above. At least 60 days before the desired purchase date, the renter should request from IXOM Watercare Inc. a firm quotation for converting the rental to a purchase. When conversion to a purchase is made, 100% of the delivery, placement, and startup is applied to the purchase price, plus 50% of prior equipment rents paid, up to a maximum of 50% of the equipment purchase price. Title to the rental equipment does not pass to the renter unless and until payment of all outstanding rental invoices, and the conversion purchase price for the equipment, is received by the IXOM Watercare Inc.

Options for Solar Models	
IXOM Service Program	This program is specialty coverage which includes the utilization of Factory Crews to service and maintain proprietary designed equipment. Details available at: https://www.ixomwatercare.com/beekeeper <i>Please contact us for pricing options.</i>

Proposal Expiration: This proposal expires in 30 days, or on the date of any new proposal for this project, whichever is sooner.

Warranty: IXOM has the best parts and labor warranties that we are aware of in the industry. The details of the warranty which applies to this project are either attached to this document or are available at: <https://www.ixomwatercare.com/warranty>

General Terms & Conditions of Sale

These terms and conditions (collectively, "Terms and Conditions") govern all sales of products, equipment and services (collectively, "Goods") agreed to be supplied by IXOM Watercare Inc ("Seller") to any person to whom any quotation is made or who is offering to contract with the Seller ("Buyer"). The Terms and Conditions are incorporated into any order, offer, arrangement or understanding between the Seller and the Buyer (including pursuant to a quotation or letter of offer accepted by the Buyer) as well as any quotation or invoice or any other document to which they are attached (individually and collectively "Order"). All purchases by Buyer are expressly limited and conditioned upon acceptance of the Terms and Conditions and without limiting any other mode of acceptance, Buyer's acceptance of the Goods manifests Buyer's assent to the Terms and Conditions and the credit terms offered by Seller. Seller objects to and rejects any provision additional to or different from the Terms and Conditions that may appear in Buyer's purchase order, acknowledgement, confirmation, writing or in any prior or later communication from Buyer to Seller, unless Seller expressly agrees to such provision in a written amendment signed by Seller. An Order together with these Terms and Conditions are herein referred to as "Contract".

- 1. Prices; Taxes; Payment Terms; Default:** (a) Prices for Goods and any adjustments to such prices shall be determined in accordance with Seller's final pricing letter or offer forming part of the Contract which has been accepted by Buyer ("Price"). (b) Prices do not include any sales, use, excise, privilege, or other taxes or assessments imposed on the Goods sold hereunder and unless Buyer provides proof of exemption satisfactory to Seller, such may be added to the price of the Goods. (c) Subject to Section 1(e) and unless otherwise agreed in writing, payment terms are net 30 days from date of invoice. Payments not received when due shall incur service charges at the rate of 1.5% per month (18% per annum) until paid, compounded on a daily basis. (d) If any of the events set out in this Section 1(d) (i) through (v) below occur, Seller reserves the right, among other remedies, to delay or suspend further shipments or require full or partial cash payment in advance until all sums due have been paid. Buyer shall be liable for all costs and expenses incurred by Seller in collecting any overdue amounts, including without limitation reasonable attorneys' fees.

- (i) Buyer defaults in any payments or is unable or states that it is unable to pay its debts as and when they fall due.
- (ii) Buyer commits an act of bankruptcy, files a voluntary petition in bankruptcy or has filed against it an involuntary petition in bankruptcy or has a trustee, receiver, liquidator, custodian, conservator, manager, controller or voluntary administrator appointed in respect of Buyer's estate or any part of Buyer's property or assets.
- (iii) Buyer passes a resolution for its winding up or enters into liquidation or has an application for winding up filed against it.
- (iv) Buyer makes an assignment for the benefit of its creditors.
- (v) Buyer experiences any analogous event having substantially similar effect to any of the events listed above.

(e) Notwithstanding Section 1(a), Seller may at any time in its sole and unfettered discretion and without being under any duty or obligation to assign reasons, review, alter or terminate Buyer's credit limit or payment terms without notice. Without limiting the generality of the foregoing, the decision of Seller shall be final and Seller accepts no liability or responsibility for any loss, howsoever arising, incurred by Buyer due to the operation of this condition.

2. Service Delivery & Responsibility to Purchase: (a) Unless agreed otherwise in writing, all shipments are F.C.A. Seller's or its sub-contractor's warehouse. Shipping dates are estimates only and are subject to Seller's lead time policy. Seller shall make all reasonable efforts to have Goods delivered to Buyer on or about the date or within the time frame of the Order but Seller shall not be liable for any failure or delay in delivery for any reason. Buyer is responsible for disposing of all non-returnable containers and shipping materials.

(b) Purchase orders issued by Buyer and placed with Seller are irrevocable and Buyer is contractually obliged to take delivery and pay for all Goods ordered and supplied or made available by Seller pursuant to such purchase order. If Seller does not receive forwarding instructions sufficient to enable it to dispatch Goods within fourteen (14) days after notice to Buyer that such Goods are ready, Buyer shall be deemed to have taken delivery from such date and shall be obliged to pay reasonable storage charges payable on demand. Unless otherwise agreed upon by the parties in writing, if Buyer does not accept delivery or collect Goods from Seller when made available at the agreed delivery point in accordance with the Contract, Buyer also will pay Seller for SLC-7548174-2 storage costs and reimburse Seller for any demurrage, transport or futile delivery costs incurred by Seller.

3. Title; Risk of Loss or Damage: Title to and risk of loss of the Goods shall pass to Buyer upon delivery to the carrier at point of shipment.

4. Inspection; Acceptance: Buyer shall promptly examine the Goods for any damage or shortage or failure of the Goods to comply with the Seller's standard sales specifications or the specifications contained in or referenced in the Contract. All claims for damage or shortage of Goods shall be deemed waived unless made in writing and received by Seller within 30 days of delivery of the Goods. If Buyer finds that any of the Goods do not comply with the specifications, Buyer may, at its option, reject that portion of the Goods that fail to comply by providing Seller with a notice made in writing and received by the Seller within 30 days of delivery of the Goods. Failure to timely deliver written notice of any such claim or rejection of the Goods within the warranty period specified in this clause 4 shall be deemed an absolute and unconditional waiver of such claim for damage or shortage or a right to reject such Goods and all claims related thereto and shall constitute an unqualified acceptance of such Goods, irrespective of whether the facts giving rise to such claim shall have then been discovered or of whether use or application of the Goods shall have then taken place.

5. Returns: Returned Goods shall not be accepted unless Buyer obtains prior written approval and transportation instructions from Seller. All Goods returned to Seller must be in full containers or cases, unopened and in the same condition as when delivered. If a return is approved by Seller, Goods may be returned for exchange or credit only. Seller shall give no cash refunds for returned Goods. Approved returned Goods are subject to a restocking charge of 15% of the invoiced value of such Goods and Buyer shall pay all transportation charges.

6. Limited Warranty: (a) Subject to Section 6(e) and Section 7 below, Seller warrants title and that the Goods shall conform to Seller's standard sales specifications in effect at the time of manufacture or the specifications agreed by the parties in writing and contained or referenced in the Order. Equipment components not manufactured by Seller which are incorporated in the Goods may, if specified elsewhere in the Contract, be subject only to warranties of Seller's vendors and Seller hereby assigns to Buyer all such rights in such vendor's warranties and will provide reasonable assistance in enforcing such rights.

(b) Buyer is solely responsible for determining that the Goods and their specification and scope are appropriate for Buyer's intended use. Any advice or recommendations by Seller with respect to the Goods or the use of the Goods are provided in good faith based on tests or experience believed to be reliable but such advice or recommendations are not warranted. Buyer agrees that it is responsible for ensuring that Goods that comply with the warranties in Section 6(a) are fit and suitable for its purposes, requirements, processes, plant and equipment.

(c) To the maximum extent permitted by law, Seller makes no other representation or warranty of any kind, and hereby expressly disclaims all other representations or warranties, express, implied, statutory or arising from a course of dealing, usage of the trade or otherwise, including without limitation any representation or warranty as to merchantability, fitness for a particular purpose, or any other matter with respect to the goods, whether used alone or in combination with any other goods, substances processes or materials or services.

(d) In the event the exclusion of some or all of such warranties under section 6(c) for certain goods subject to this contract would be illegal, any additional warranty would be limited to the warranty required by applicable law and to the extent permitted by such law, would be subject to section 6(e) and section 7, and is conditioned upon use in accordance with label directions under normal conditions reasonably foreseeable to seller with buyer assuming the risk of any use contrary to label directions, under abnormal conditions or under conditions not reasonably foreseeable to seller.

(e) Seller's sole liability and Buyer's sole remedy for breach of warranty are specifically limited to the repair of the goods (or re-performance of services when applicable) or the cost thereof where Seller fails to perform such repair necessitate by a breach of warranty, and such liability and remedy re exclusive of all other liabilities and remedies. Should these remedies be found inadequate or to have failed of their essential purpose for any reason whatsoever, Buyer agrees that the return of the amount paid by buyer to seller for the purchase of the goods which fail to conform with the warranties set forth in section 5.7 shall be considered a fair and adequate remedy and prevent the remedies from failing of their essential purpose.

7. Limitation of Liability: (a) The liability of Seller and its affiliates to Buyer under and in connection with the Contract is limited to the price allocable to the Goods giving rise to the claim and in no event shall the cumulative liability of Seller howsoever arising, whether under warranty, contract, tort, negligence, strict liability, indemnification, defense or any other cause or combination of causes whatsoever, exceed the total payments received from Buyer under the Contract in connection with the Goods.

(b) To the extent permitted by law and notwithstanding any provision to the contrary in the contract, Seller shall not be liable for special, indirect, incidental or consequential damages, including without limitation, and loss of profits. Loss of business revenues, loss of capital, failure to realize expected profits or savings, overhead costs, loss by reason of service interruption or increased expense of operation, loss of goodwill, loss of reputation, loss of value in any intellectual property, damages or liquidated sums payable pursuant to other agreements or to other third parties, other economic losses, whether arising under warranty, contract; negligence (including negligent misrepresentation) or other tort, strict liability, breach of statute, indemnification, or any other cause or combination of causes, including any theories of concurrent liability arising from a duty of care by operation of law or otherwise.

8. Safe Storage Handling & Use; Assumption of Risk; Indemnification: Buyer acknowledges that it is familiar with the risks associated with the storage, handling and use of Goods and any waste resulting therefrom. Accordingly and notwithstanding anything to the contrary set forth in the Contract, Buyer covenants and warrants and shall ensure that (i) that it and its employees, agents, carriers and customers are familiar with and adhere to all necessary and appropriate precautions and safety measures to safely store, handle or use the Goods; (ii) it and its employees, agents, carriers and customers shall comply with all applicable Laws, including without limitation, environmental laws and regulations pertaining to the storage, handling and use of Goods; (iii) shall obtain and comply with all required permits and licenses. Seller takes no responsibility for, and Buyer assumes all risks associated with waste characterization, regulatory status and chemical composition of any product, process, material, waste or substance into which the Goods are incorporated or applied. Without limiting the foregoing, Buyer shall further ensure that all storage tanks, vessels, and pipes, hoses and valves and other components used by Buyer or its employees, agents, carriers and customers to store, handle and transfer Goods which are bulk chemicals are properly installed and maintained to prevent injury, death or loss of containment during storage, handling and transfer of such Goods. If Buyer resells or distributes Goods to third parties, Buyer assumes responsibility for ensuring that it provides detailed instructions to such third parties regarding safe storage, handling and use of those Goods and any Storage Items or packaging in which such Goods are stored. To the maximum extent allowed by law, Buyer assumes all risks and liability whatsoever for all injuries, losses and damages to persons or property or otherwise and shall indemnify, defend and hold harmless Seller and Seller's employees and agents against all claims, damages, losses, costs, liabilities, and other expenses (including investigation and attorneys' fees) that Seller incurs or may be obligated to pay as a result of (i) Buyer's, its employees', agents', carriers' or customers' handling, possession, further processing, storage, use treatment, transportation, disposal, sale or other use or disposition of the Goods, whether used alone or in combination with other products, materials, substances or wastes, (ii) Buyer's, its employees', agents', carriers' or customers' violation or alleged violation of any Law, or (iii) Buyer's breach of any of its obligations set forth herein.

9. Force Majeure: Shipments or deliveries may be totally or partially suspended or delayed by Seller during any period in which the Seller may be prevented or hindered from manufacture, delivery or supply through any circumstances outside Seller's reasonable control or where such manufacture, delivery or supply is rendered materially more expensive by such circumstances. Circumstances beyond Seller's reasonable control shall include, without limitation, strikes, lockouts or other labor difficulty; acts of carriers; acts of God; acts of civil or military authorities; acts or omissions of Buyer; war; riot; fire; explosion; acts of terrorism; flood; any inability to obtain or lack of any necessary or adequate materials, inputs, fuel, power, labor, equipment, containers, facilities or services on usual terms; power or water shortage; accidents or breakdowns or failures of plant or machinery or apparatus; delays, congestions or blockages at sea ports or transport depots or software, hardware or communication network; changes in applicable Laws; or any other event, whether or not enumerated herein, beyond the reasonable control of Seller that makes impractical the manufacture, transportation or shipment of the Goods or of a material or other resource upon which the manufacture, transportation or shipment of the Goods depends. Seller shall not incur any liability to Buyer in respect of such suspension.

10. Intellectual Property: Seller is the sole and exclusive owner of the Intellectual Property in the Goods and processes incorporated in such Goods, and the rights attached to that Intellectual Property. Nothing herein grants to Buyer any right, title or interest in or to any of the Intellectual Property in the Goods. Buyer shall not claim to have acquired any right, title or interest to the Intellectual Property in the Goods by virtue of purchasing Goods sold hereunder. Buyer shall not deconstruct, reverse compile or reverse engineer the Goods in any way for the purpose of deciphering or replicating the chemical composition of the Goods. As used herein, "Intellectual Property" means any intellectual or industrial property right anywhere in the world including, without limitation, any patent, patent application, utility model, copyright (including copyright in manuals, databases, and promotional materials), registered design and other design rights, unpatented secrets and innovations, confidential information, and any other rights that may subsist anywhere in the world in improvements, inventions and other manufacturing processes or technical and other information of Seller. Buyer shall not resell, distribute or supply the Goods to any third party for any reason without Seller's prior written consent.

11. Confidentiality; Entire Agreement; Amendments; Changes to Terms & Conditions: (a) All information that Buyer acquires from Seller hereunder, directly or indirectly, and all information that arises out of the sale of the Goods hereunder, concerning such Goods and/or proprietary processes involved, including information concerning Seller's current and future business plans, information relating to Seller's operations, know-how, and other.

Seller-furnished information shall be deemed Seller's "Proprietary Information". Buyer shall (a) hold Seller's Proprietary Information in strictest confidence, (b) not disclose it to others, (c) use it solely for purposes of this Agreement and (d) upon Seller's request, either promptly deliver to Seller all such Proprietary Information that is in written, electronic or other form, including copies and summaries, or, at Seller's option, destroy such Proprietary Information and provide Buyer certification of such destruction. The obligations under this Section shall survive the expiration or termination of the Contract.

(b) The Contract constitutes the entire agreement of the parties with respect to the purchase and sale of Goods and supersedes and excludes all prior and other discussions, representations (contractual or otherwise) and arrangements relating to the supply of Goods, including but not limited to, those relating to the performance of Goods or results that ought to be expected from using the Goods.

12. Governing Law: The rights and duties of the parties and any dispute regarding the sale of Goods covered hereby shall be resolved according to the laws of the state of Colorado, without regard to its conflicts of law provisions. Buyer hereby agrees to submit to the non-exclusive jurisdiction of the courts in the state of Colorado. Any controversy or claim arising out of or relating to the sale of Goods or the dealings between the parties shall be settled exclusively by arbitration in Denver, Colorado by a single arbitrator pursuant to the American Arbitration Association's Commercial Arbitration rules then in effect, and judgment upon the award shall be entered in any court having jurisdiction thereof. The prevailing party in any arbitration proceeding shall be entitled to recover its reasonable attorneys' fees and costs, in addition to any other relief obtained.

13. Waiver: No failure to exercise nor any delay or omission in exercising any right, power or remedy by Seller operates as or constitutes a waiver. A single or partial exercise by Seller of any right, power or remedy does not preclude any other or further exercise by it of that or any other right, power or remedy. A waiver is not valid or binding on Seller unless made in writing. No failure by Seller to exercise, nor any delay or omission by Seller in exercising any right, power or remedy nor any representation made or conduct carried out by Seller under the Contract or in connection with the supply of Goods or any of them shall constitute or provide grounds for a common law or equitable estoppel.

14. Severance: If any provision of the Terms and Conditions or its application to any person or circumstances is or becomes invalid, illegal or unenforceable, the provision shall so far as possible be read down to such extent as may be necessary to ensure that it is not invalid, illegal or unenforceable. If any provision or part of it cannot be so read down, the provision or part of it shall be deemed void and severable and the remaining provisions of the Terms and Conditions shall not in any way be affected or impaired.

Accept This Quotation

To order the equipment, please issue a purchase order to IXOM Watercare Inc, 3225 Hwy. 22, Dickinson, ND 58601. The purchase order can be mailed to the address above, faxed to 866-662-5052, or emailed to the home office at orderprocessing@ixom.com.

A. Ixom Watercare, Inc. is a Material Supplier of portable equipment. No contracting or construction work of any type is being offered or will be performed by Ixom Watercare, Inc. at the jobsite or at any Ixom Watercare, Inc. location or factory for this project.

1) To order the materials the purchaser should use the same type of purchase order as would be used to order other materials; for example, a desk or a forklift. Please do not order the equipment quoted here with a "contractor" or "subcontractor" agreement of any sort, because Ixom Watercare, Inc. is a material supplier.

2) The US Department of Labor defines a Material Supplier, such as Ixom Watercare, Inc. and its allowable activities. All activities by Ixom Watercare, Inc. factory personnel to transport, place and start up the Ixom Watercare, Inc. portable equipment are incidental to Ixom Watercare, Inc. being a Material Supplier, and Ixom Watercare, Inc. will not perform contracting or construction work of any type for this project.

This IXOM quotation should be attached to the purchase order, and the purchase order should refer to the IXOM quotation by date, and should accept the quotation in its entirety. Acceptable language on the purchase order would be " Quantity: 1. Description: "Equipment per the attached quotation from IXOM dated _____, including all terms shown on that quotation. " If there is any language missing, or extra language in the purchase order such as a referral to specifications, then IXOM will not be able to accept the purchase order.

If a purchase orders is not utilized, please sign and date below, provide billing information, and fax to 866-662-5052 or email to orderprocessing@ixom.com.

Go to www.ixomwatercare.com/subscribe to sign up for periodic email updates & information including videos, case studies, and other valuable content from Ixom Watercare!

Signing below acknowledges acceptance of this quotation.

Proposal Date: January 17, 2024

Proposal Expiration Date: February 16, 2024

Project #: 67792

_____ Signature	_____ Date
_____ Printed Name	_____ Title



126 E. Central Avenue
Sutherlin, OR 97479
541-459-2856
Fax: 541-459-9363
www.cityofsutherlin.com

City of Sutherlin

STAFF REPORT					
Re: Parks Advisory Committee Appointment				Meeting Date:	Feb 12, 2024
Purpose:	Action Item <input checked="" type="checkbox"/>	Workshop <input type="checkbox"/>	Report Only <input type="checkbox"/>	Discussion <input type="checkbox"/>	Update <input type="checkbox"/>
Submitted By: City Recorder, Melanie Masterfield				City Manager Review	<input checked="" type="checkbox"/>
Attachments: Application					

WHAT IS BEING ASKED OF COUNCIL?

Consider filling one vacancy on the Parks Advisory Committee.

EXPLANATION

Parks Advisory Committee – There is one (1) vacancy available on the Parks Advisory Committee with a term ending December 31, 2025. The City has received one (1) application for appointment from Terry Brock.

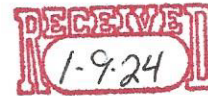
OPTIONS

See suggested motions.

SUGGESTED MOTION(S)

To appoint Terry Brock to the Parks Advisory Committee, term ending December 31, 2025.

Not to appoint Terry Brock to the Parks Advisory Committee, term ending December 31, 2025.



City of Sutherlin

Application for Citizen Committee/Commission/Board Appointment

Name Terry Brock Date 1/8/2024
Address [REDACTED] Phone 541-733-5164
Email thebodyshoptotalfitness@outlook.com Bus. Phone 541-459-3395
Length of Residency in Sutherlin 15 years Registered Voter? Yes
Candidate for position on Parks Advisory Committee
Relevant background and experience Roseburg Little League President
Event Organizer

What are your major interests or concerns in the City's programs? _____

Development of City Parks

Why would you like to be appointed to this position? _____

I have a passion to help Sutherlin
improve

RETURN THIS FORM TO: City Recorder, 126 E. Central Ave., Sutherlin, OR 97479

For Office Use Only:

Date received: 1/9/24

Date considered: 2/12/24

Action by Council _____

Term Expires: _____

Nov 2019 revised



REPORTS





126 E. Central Avenue
Sutherlin, OR 97479
541-459-2856
Fax: 541-459-9363
www.cityofsutherlin.com

City of Sutherlin

STAFF REPORT					
Re: Waite Street Improvements – Engineering Design & Construction Cost Estimate Presentation				Meeting Date:	02-12-2024
Purpose:	Action Item <input type="checkbox"/>	Workshop <input type="checkbox"/>	Report Only <input checked="" type="checkbox"/>	Discussion <input type="checkbox"/>	Update <input type="checkbox"/>
Submitted By: Kristi Gilbert, Community Development Director				City Manager Review	<input checked="" type="checkbox"/>
Attachments: Design & Cost Estimate					

WHAT IS BEING ASKED OF COUNCIL?

On August 14, 2023 the City Council awarded the contract to Civil Solutions Engineering, LLC for the Engineering Design and Construction Cost Estimate for the proposed Waite Street Improvement Project.

EXPLANATION

In preparation of the 2024 Safe Routes to School (SRTS) Grant Application, city staff has worked with Civil Solutions Engineering, LLC on the Design Services and Construction Cost Estimate for Waite Street Improvements.

Jamie Norrington with Civil Solutions Engineering, LLC, will walk the council through a presentation providing an update to the design and construction cost estimate of the Waite Street Improvements.

OPTIONS

SUGGESTED MOTION(S)



City of Sutherlin

WAITE STREET IMPROVEMENTS PROJECT

DESIGN AND COST ESTIMATE UPDATE

February 12th, 2024



SCOPE OF WORK

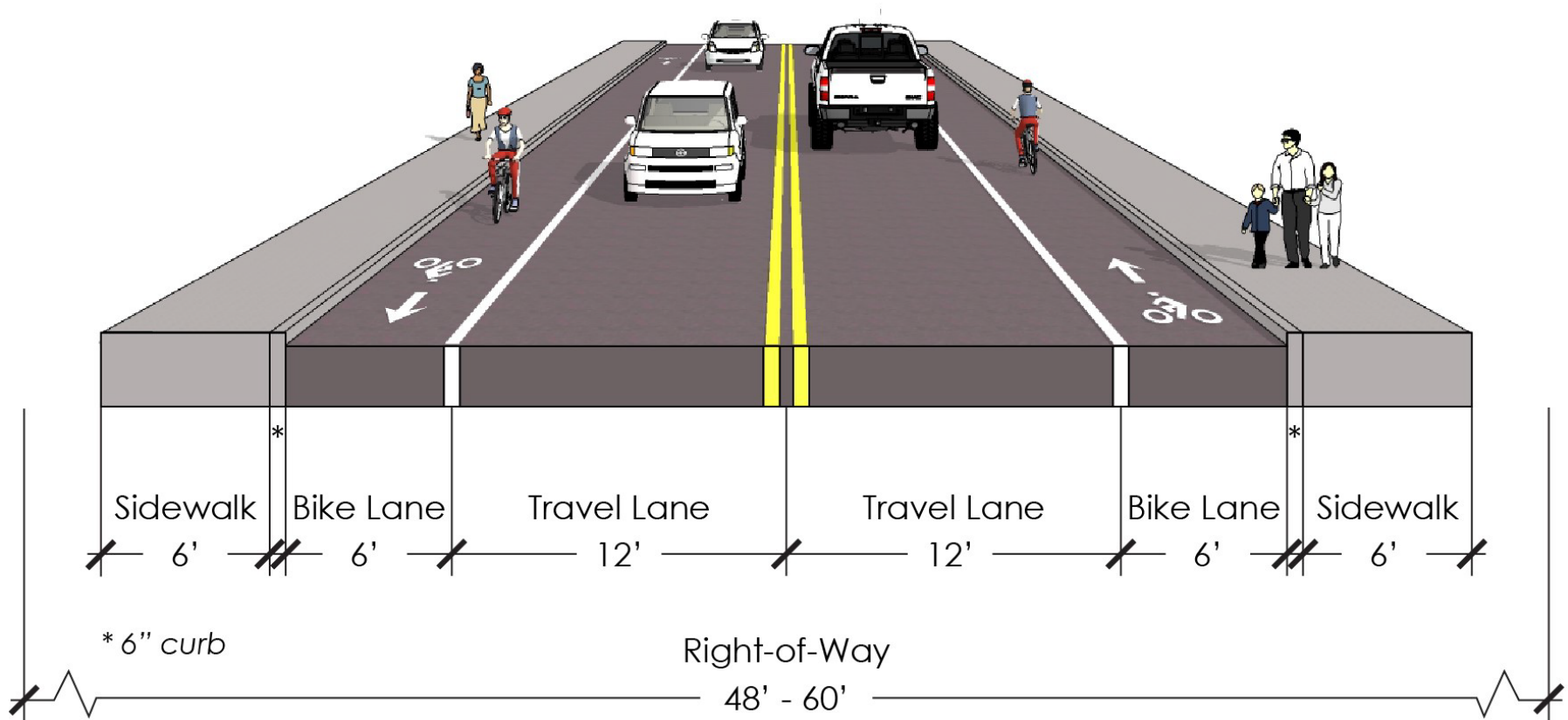
Original Scope

- To provide a complete construction plan set with the following key elements:
 - Improvements to Waite Street including new curb and gutter, repair of road failure areas, remove and replace AC pavement and/or AC overlay, and a 6 ft. wide sidewalk along one side of Waite Street between E. Central Avenue and Southside Road.
 - Provide crosswalks at all side street intersections and a rapid flashing beacon at the intersection of Sea Street and Waite Street.
 - Modify the existing vehicular bridge to accommodate pedestrian traffic.
- Provide Engineer's Cost Estimate including costs for engineering, contingency, legal, and administration.
- To assist city staff with the ODOT SRTS funding application process.



SCOPE OF WORK

Basis of Original Scope



Major Collector – Typ. Street Section



SCOPE OF WORK

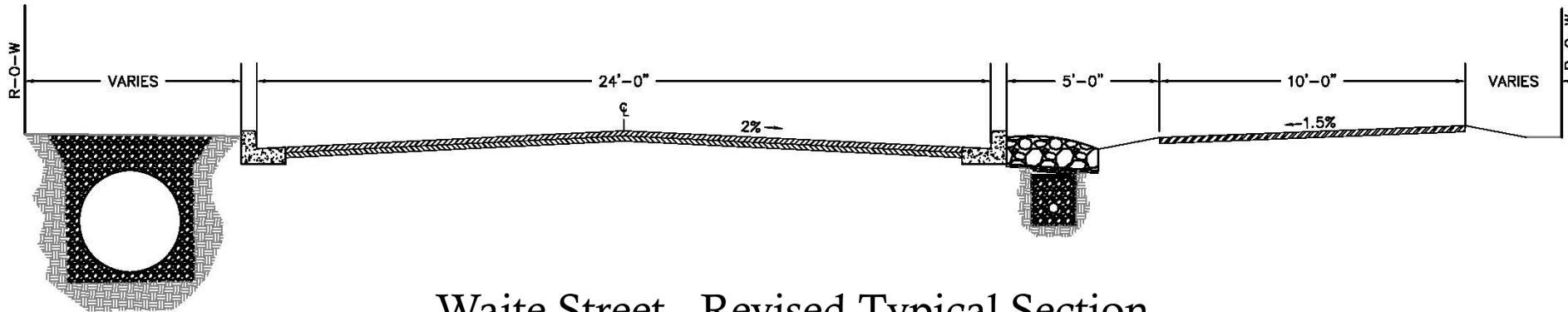
Revised Scope

- To provide a complete construction plan set with the following key elements:
 - Improvements to Waite Street including new curb and gutter, address road failure areas, remove and replace all AC pavement, shift street alignment to the east, and provide retaining walls as required.
 - Provide crosswalks at all side street intersections and a rapid flashing beacon at the intersection of Sea Street and Waite Street.
 - Move away from roadside ditches for storm runoff conveyance and provide new piped storm drain system including a new outfall to Sutherlin Creek.
 - Provide new bridge over Sutherlin Creek to accommodate pedestrian traffic.
- Provide Engineer's Cost Estimate including costs for engineering, contingency, legal, and administration.
- To assist city staff with the ODOT SRTS funding application process.

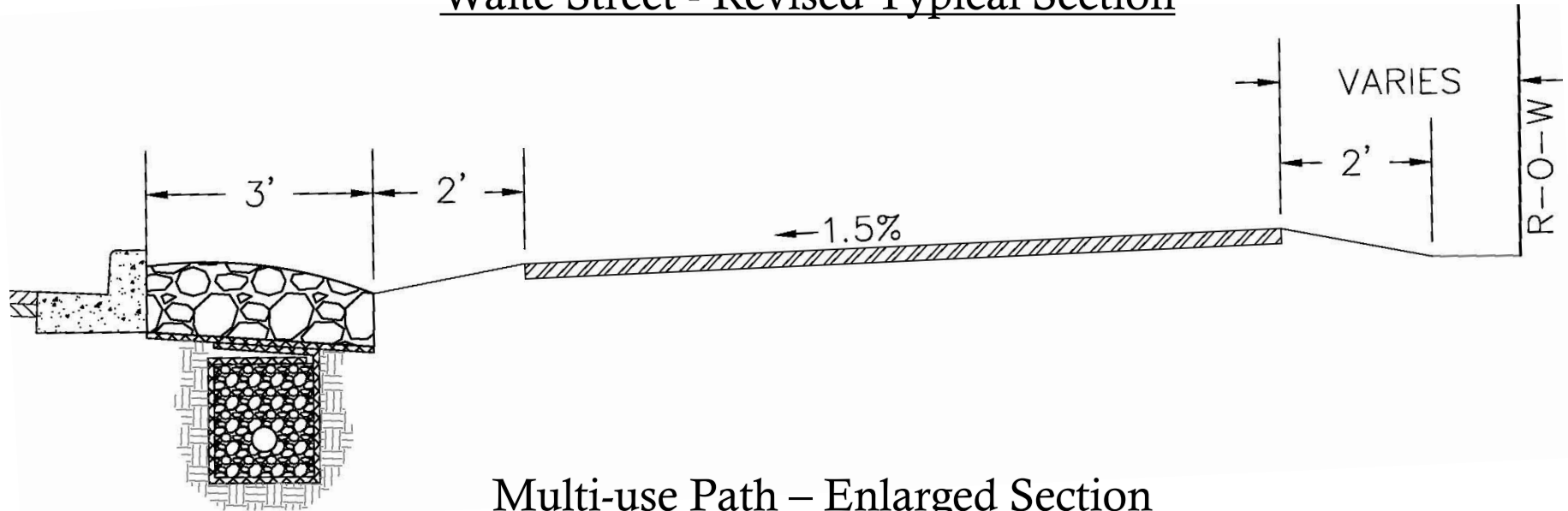


SCOPE OF WORK

Basis of Revised Scope



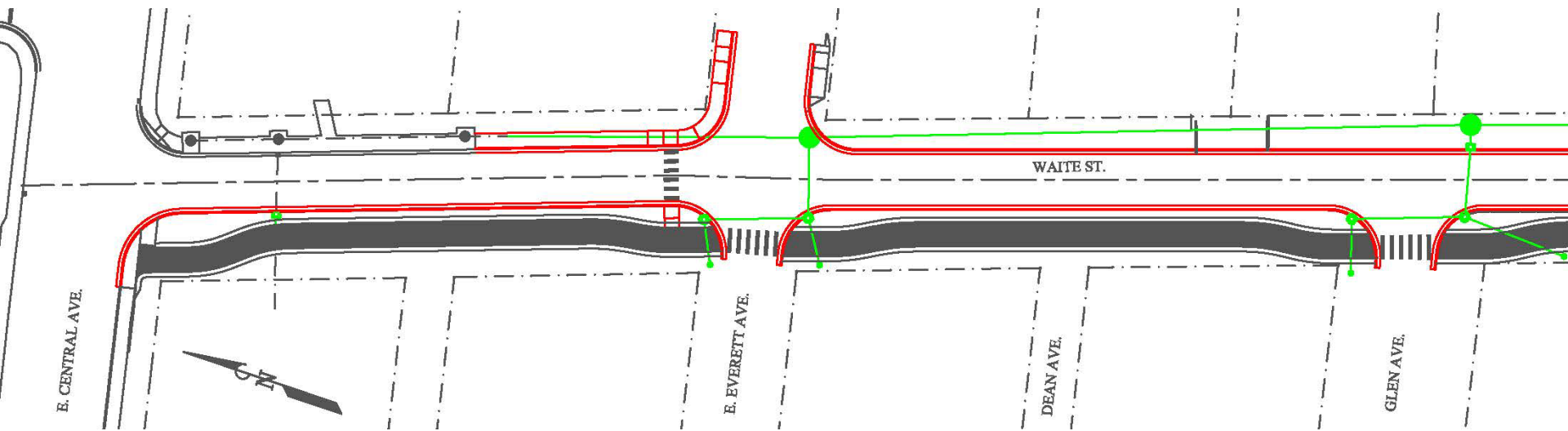
Waite Street - Revised Typical Section



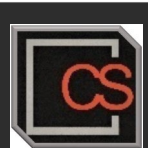
Multi-use Path – Enlarged Section



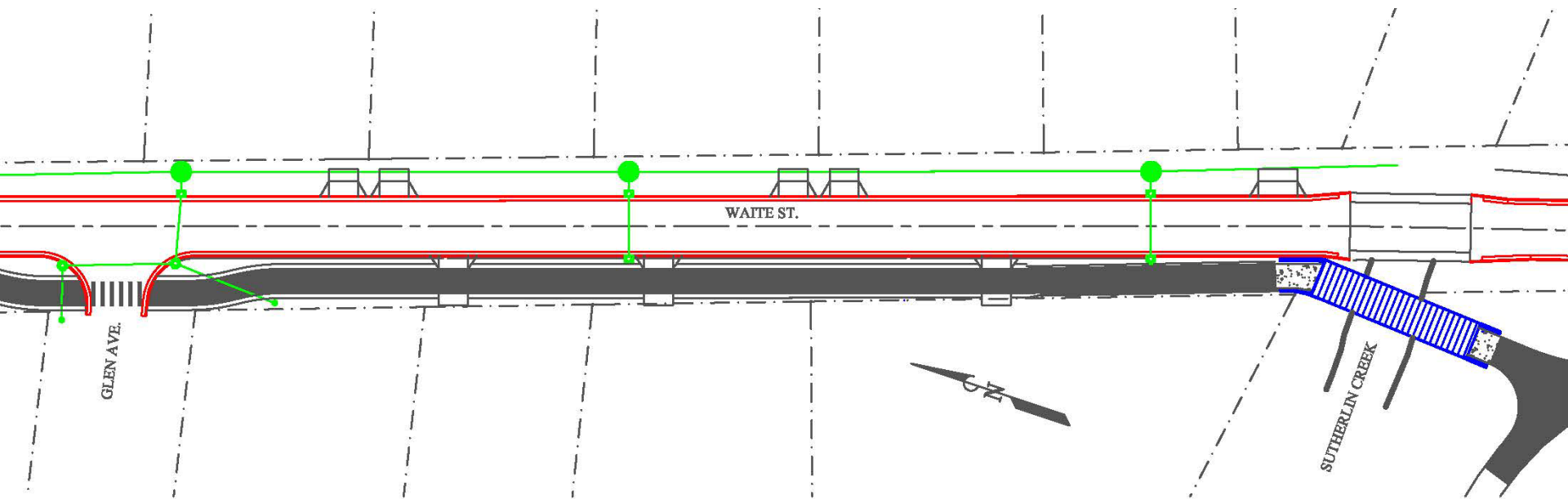
PROPOSED STREET, PATH, & SD ALIGNMENT



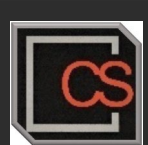
E. Central Avenue To Glen Avenue



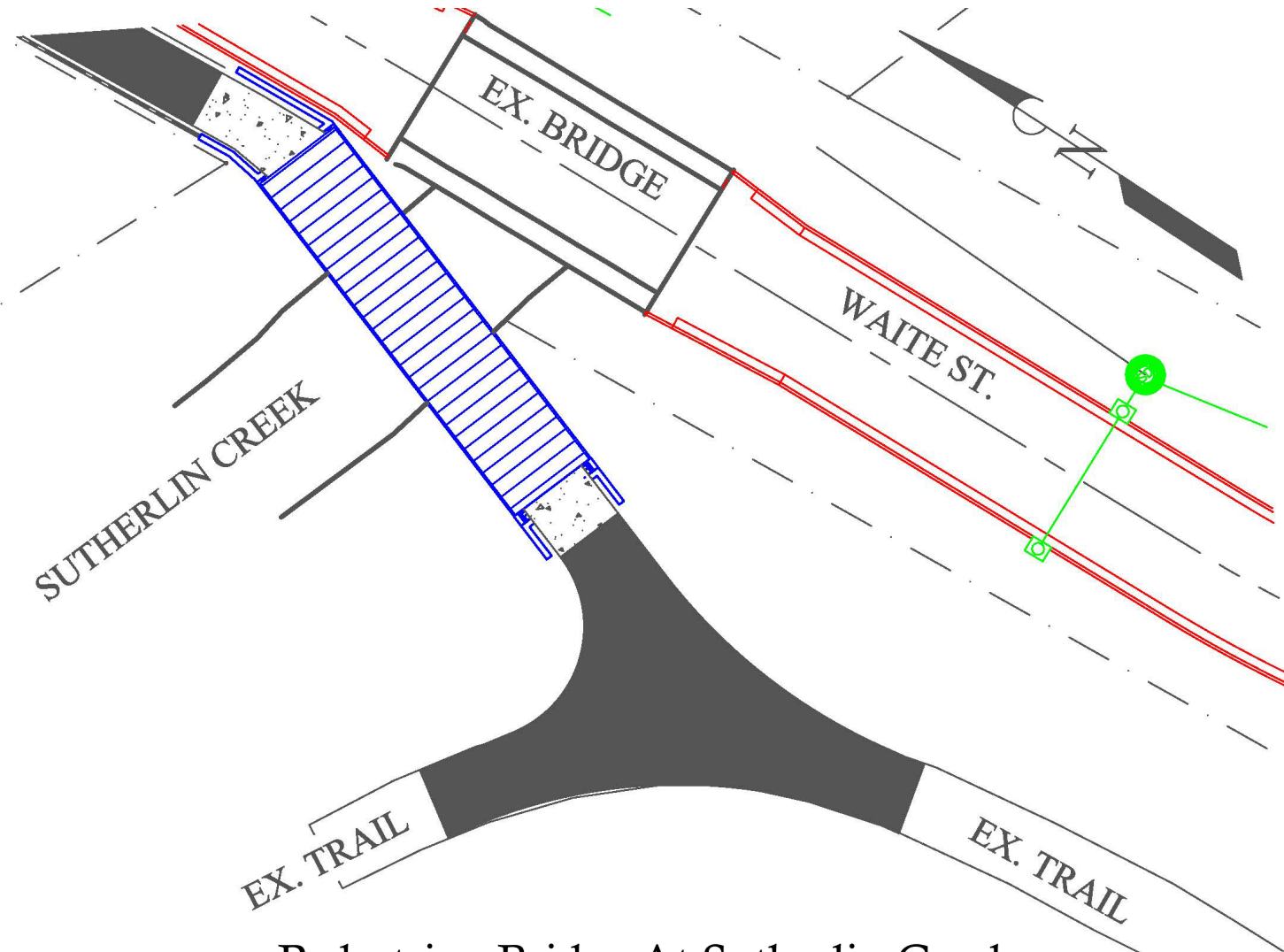
PROPOSED STREET, PATH, & SD ALIGNMENT



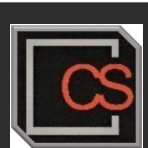
Glen Avenue To The Pedestrian Bridge



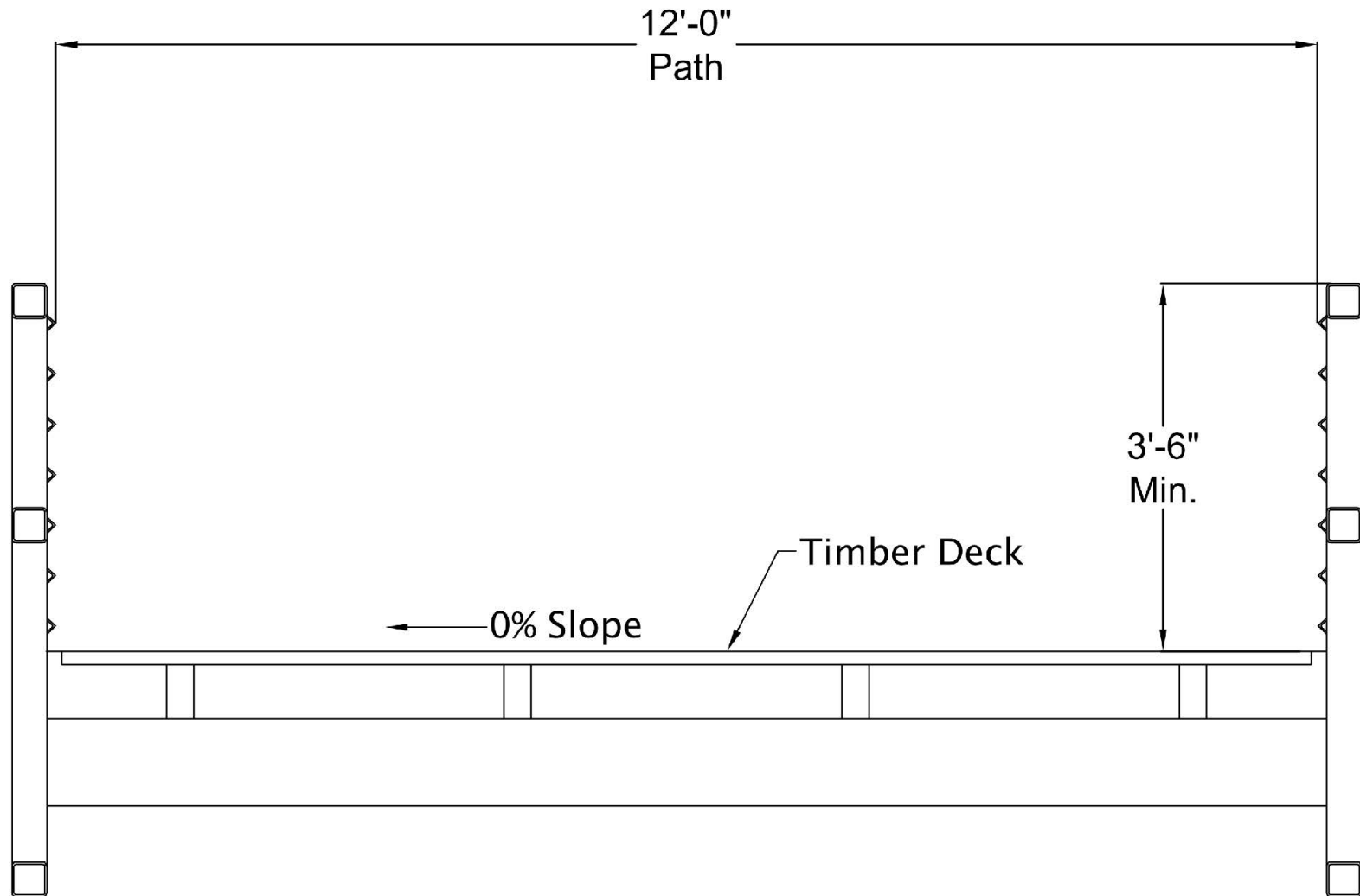
PROPOSED STREET, PATH, & SD ALIGNMENT



Pedestrian Bridge At Sutherlin Creek



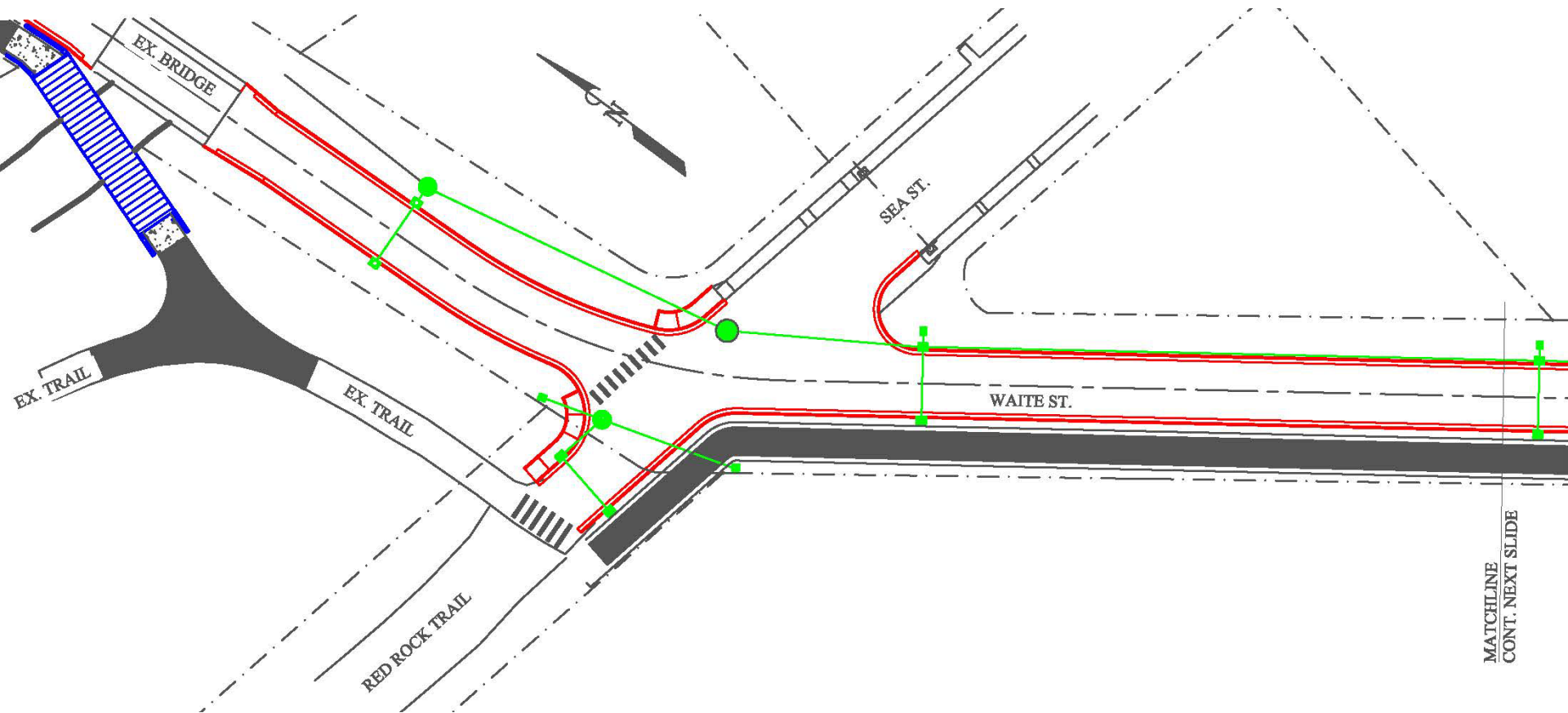
PROPOSED STREET, PATH, & SD ALIGNMENT



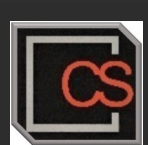
Pedestrian Bridge – Typical Section



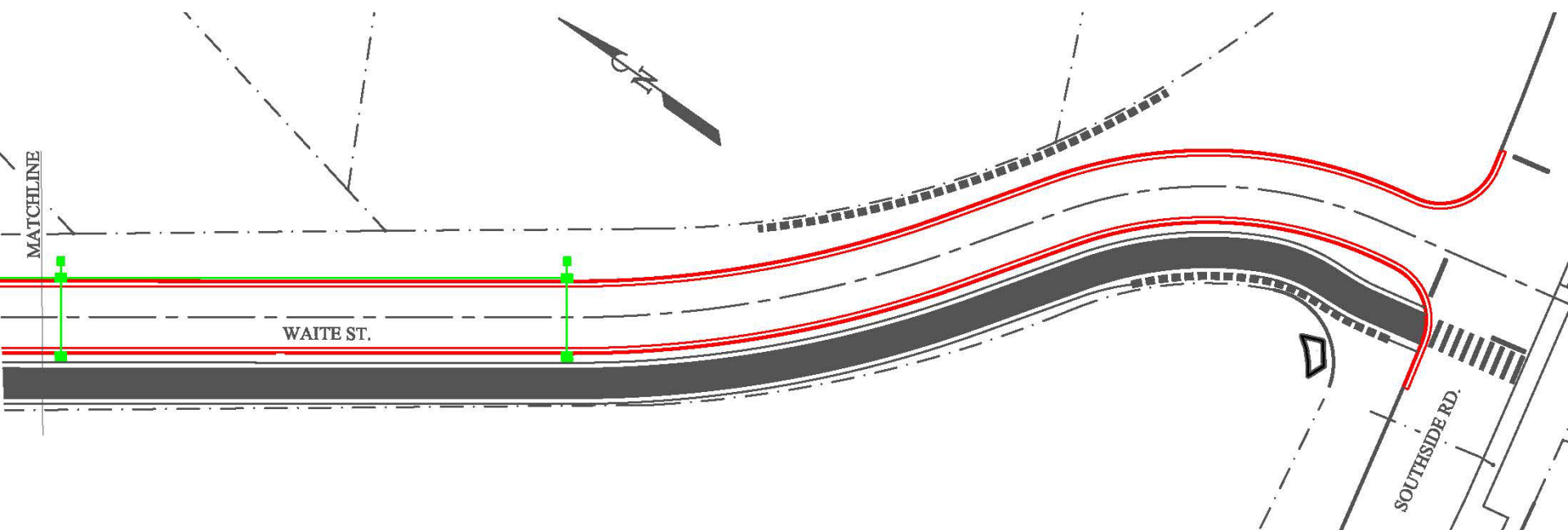
PROPOSED STREET, PATH, & SD ALIGNMENT



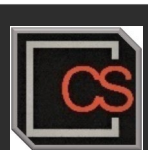
Pedestrian Bridge To Waite St. Matchline



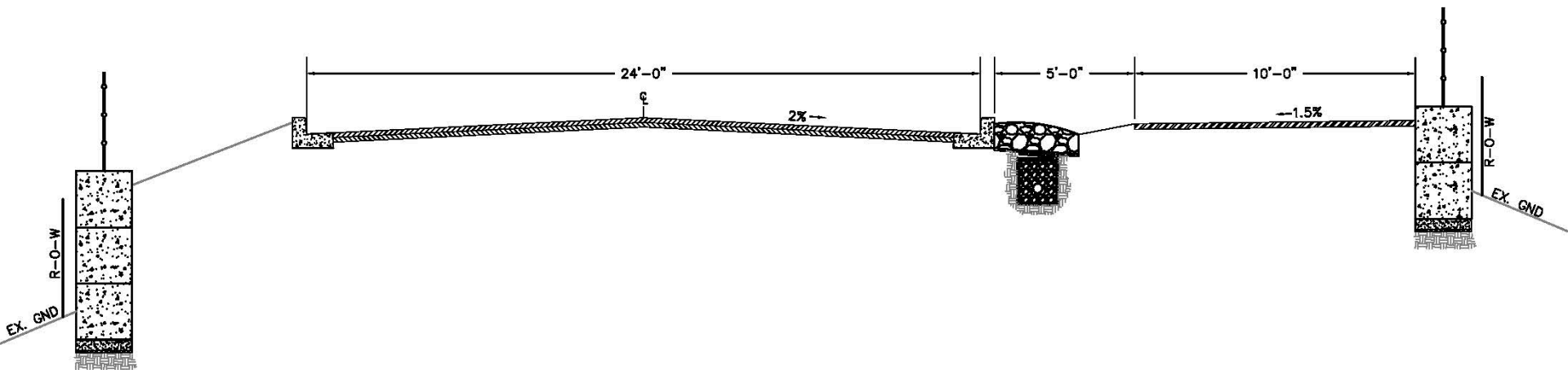
PROPOSED STREET, PATH, & SD ALIGNMENT



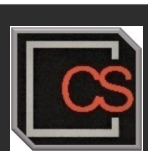
Waite St. Matchline To Southside Rd.



PROPOSED STREET, PATH, & SD ALIGNMENT



Typical Street & Path Section At Retaining Walls



ENGINEER'S ESTIMATE

Original Scope Project Cost

Total Construction Cost	\$1,352,830
Contingency	\$270,000
Engineering	\$297,000
Permitting	\$90,000
Legal & Administration	\$11,500
Grand Total Project Cost	\$2,021,330

Revised Scope Project Cost

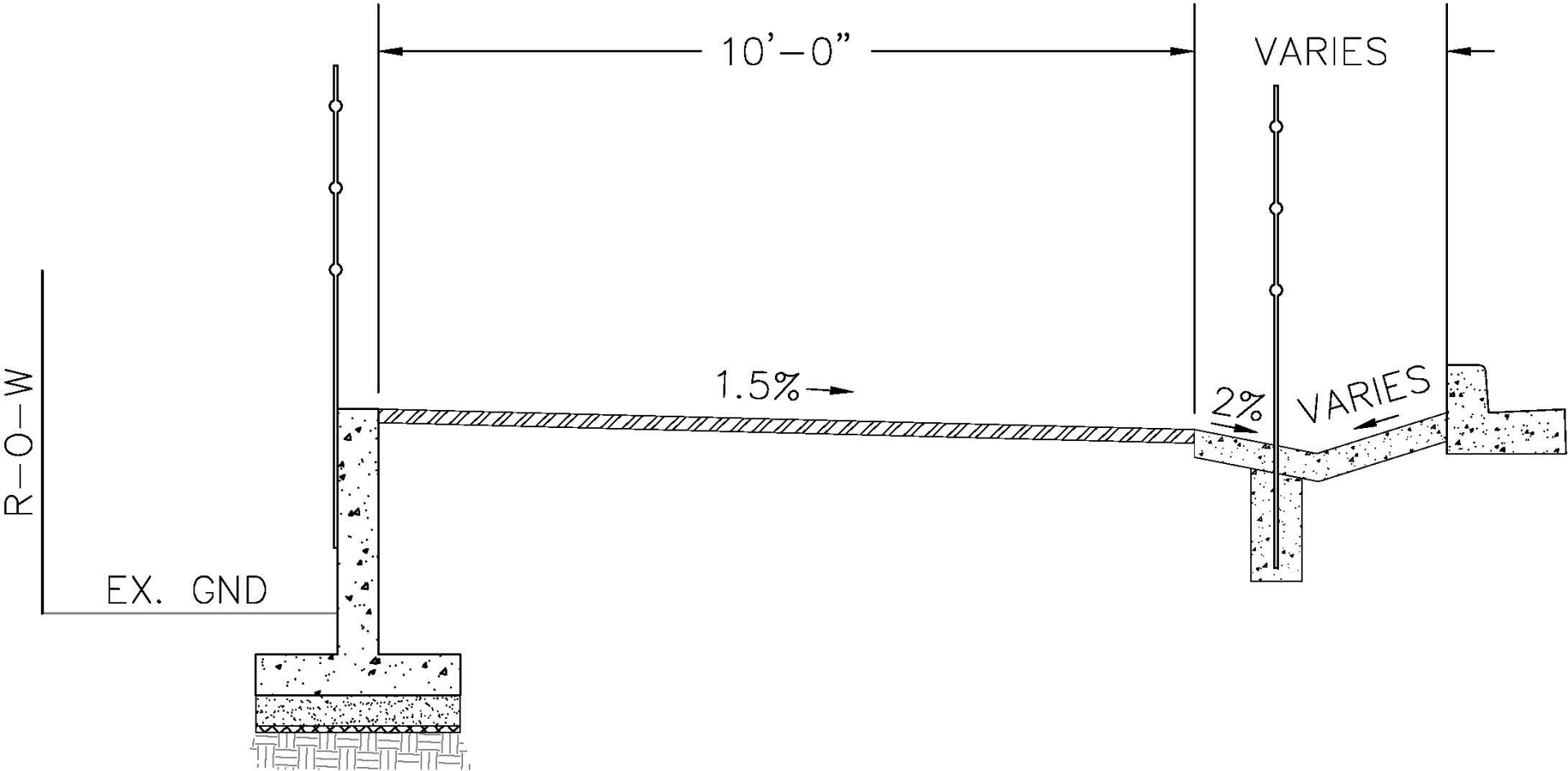
Total Construction Cost	\$2,550,504
Contingency	\$510,000
Engineering	\$306,000
Permitting	\$100,000
Legal & Administration	\$18,000
Grand Total Project Cost	\$3,484,504



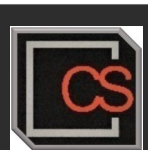
QUESTIONS?



SCOPE OF WORK



Non-Conforming Path – Typical Section





WORKSHOP





126 E. Central Avenue
Sutherlin, OR 97479
541-459-2856
Fax: 541-459-9363
www.cityofsutherlin.com

City of Sutherlin

STAFF REPORT					
Re: Dakota Street Intersection / Kittelson Presentation				Meeting Date:	02-12-2024
Purpose:	Action Item <input type="checkbox"/>	Workshop <input type="checkbox"/>	Report Only <input checked="" type="checkbox"/>	Discussion <input type="checkbox"/>	Update <input checked="" type="checkbox"/>
Submitted By: Kristi Gilbert, Community Development Director				City Manager Review <input checked="" type="checkbox"/>	
Attachments: Intersection Control Evaluation (ICE), Kittelson & Associates Memo & ODOT Letter					

WHAT IS BEING ASKED OF COUNCIL?

EXPLANATION

In preparation of the presentation that will be provided by Kittelson & Associates, the attached documentation and correspondence related to the matter was also submitted for your consideration. The documentation and correspondence include the Intersection Control Evaluation (ICE); technical memorandum from Kittelson & Associates, dated January 26, 2024; and a letter from ODOT, dated February 2, 2024.

OPTIONS

N/A

SUGGESTED MOTION(S)

N/A



Oregon

Tina Kotek, Governor

Department of Transportation

Region 3 Traffic

District # 7

3500 NW Stewart Parkway

Roseburg, OR 97470

Phone 541-529-5272

INTERSECTION CONTROL EVALUATION Addendum

**OR 138W at Dakota Street
Elkton-Sutherlin Highway No. 231, M.P. 23.96
Sutherlin, Douglas County**

Prepared By:

April Chase, PE
D7 Traffic Operation Engineer



Introduction

This addendum is supplemental information for the intersection control evaluation (ICE) Report for [OR 138W/Elkton-Sutherlin Highway\(Hwy231\)/W Central Avenue at Dakota Street](#) located in District 7, Region 3, within the city limits of Sutherlin, Douglas County and updates the associated costs to reflect recent economic trends. The intersection falls within the study area of the I-5 Exit 136 Interchange Area Management Plan (IAMP), the recommendations of which are reviewed and supported by ODOT Region 3 Staff.

Comparison of Reasonable Alternatives

Many options were explored using screening tools which included 3-legged, 4-legged, single and multi-lane intersection options. The options of the 4-legged 5-lane signal and single lane roundabout were selected for analysis in the ICE Report as those with design features considered to meet the traffic analysis requirements, aligns with the design and construction of the I-5 bridge over OR 138W which accommodates the 5-lane configuration, and would have the least impact within the existing geometric and community constraints. This addendum provides additional information and some of the factors to consider for a multi-lane roundabout alternative for the intersection of OR 138W and Dakota Street.

This section of OR 138W is a Reduction Review Route with a permanent reduction for freight in the horizontal and vertical clearance within the useable right-of-way. The already low heavy vehicle volumes have been on the decline. However, a multi-lane roundabout may provide a larger radius for improved freight mobility over a single lane roundabout. A multi-lane roundabout is not included in the IAMP but also would not conflict with the recommendation in the IAMP to increase the number of lanes on OR 138W.

Below are the updated 2023 costs, including an estimate for a multi-lane roundabout.

Analysis Subject	Proposed Control Type/Improvement			
	Conventional (Minor Stop)	Single Lane Roundabout	Multi- Lane Roundabout	Signal
Project Costs Updated 2023				
Total Construction Cost Estimate	\$0 (Existing)	\$5,000,000	\$9,000,000	\$1,600,000

The results for the 5 year and 20 year analysis for a 4-legged Two-Way Stop Controlled, multi-lane Traffic Signal, and a single-lane roundabout were previously discussed in the ICE Report. The Multi-Way Stop control was considered, but not included for evaluation. The multi-lane roundabout was not included for evaluation due to the location constraints, impacts to adjacent businesses, Reduction Review Route designation, low heavy vehicle volumes, and higher costs. The other factors considered for the multi-lane roundabout were the unbalanced volume distribution and participant conflicts. If a multi-lane roundabout were to be considered, a minimum of these factors would require further evaluation.



Oregon

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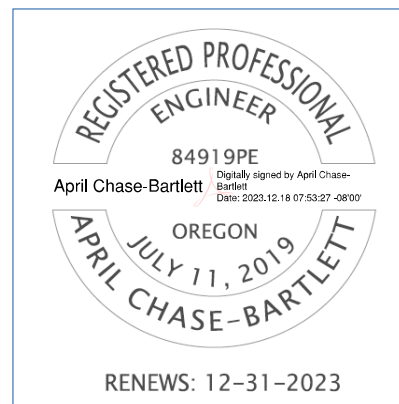
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INTERSECTION CONTROL EVALUATION

**OR 138W at Dakota Street
Elkton-Sutherlin Highway No. 231, M.P. 23.96
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Introduction

This report summarizes the intersection control evaluation for [OR 138W/Elkton-Sutherlin Highway\(Hwy231\)/W Central Avenue at Dakota Street](#) located in District 7, Region 3, within the city limits of Sutherlin, Douglas County (Figure 1). The existing T-intersection is minor road stop controlled (Dakota Street) and free flowing on the major road (W Central Avenue/OR 138W). The intersection falls within the study area of the I-5 Exit 136 Interchange Area Management Plan (IAMP), the recommendations of which are reviewed and supported by ODOT Region 3 Staff.

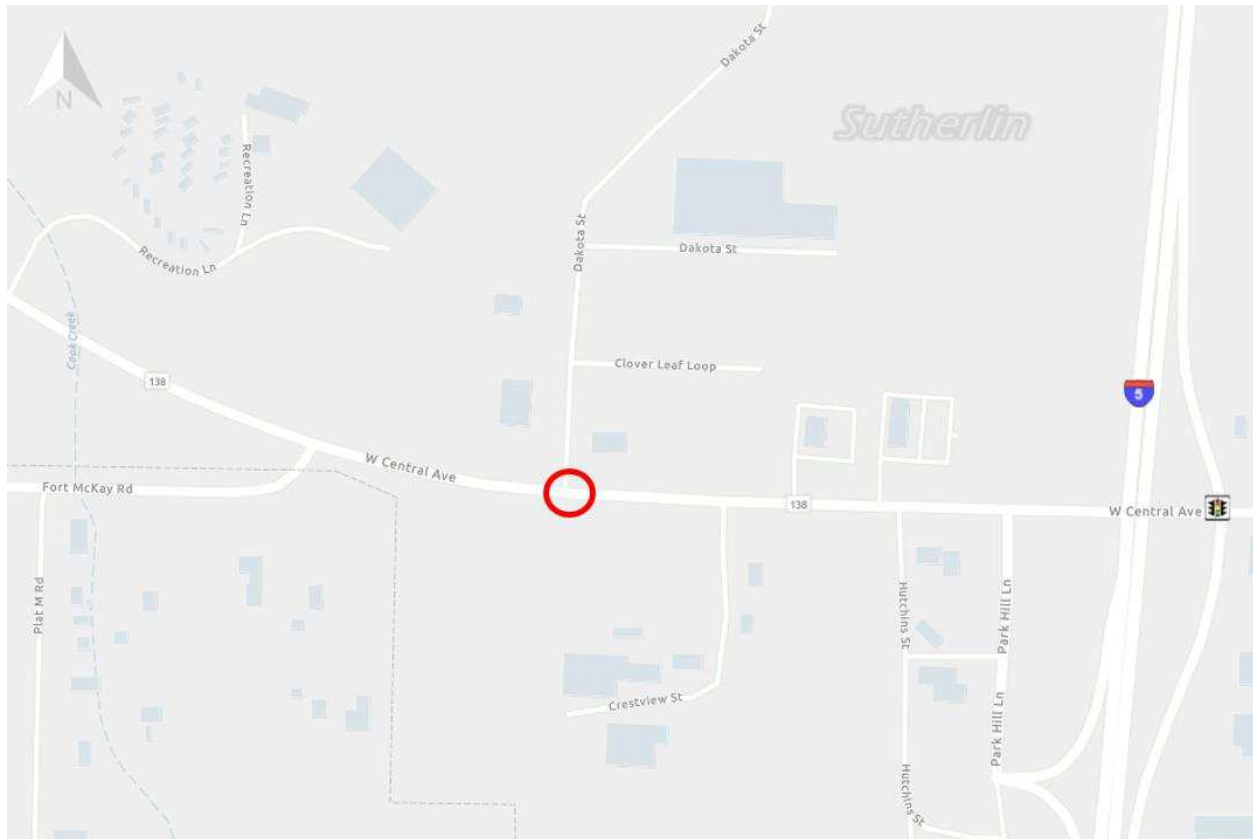


Figure 1: Area Map

The 2010 Census indicated the population of Sutherlin was 7,810 with a 2021 estimated population of 8,593. A significant amount of development has already occurred on the north side of W Central Avenue (OR138W), and more is expected in the near future. Under current conditions of the stop controlled minor road, the predicted increase in traffic volumes will cause excessive delays which may result in riskier driver behaviors. This report explores various options for traffic control at the intersection of OR 138W at Dakota Street. A traffic signal was determined to be the appropriate type of intersection control. This study will show the need for the traffic signal and demonstrate that the installation of a traffic signal will improve the overall safety and operation of the intersection as required in the ODOT Traffic Signal Policy and Guidelines manual.

Operating Standards

Level of service (LOS) ratings, delay, and volume-to-capacity (v/c) ratios are performance measures that provide a standard analysis of intersection operations. Below are the definitions of these measures:

Table 1: HCM Levels of Service

	Stopped Delay Per Vehicle (Seconds per Vehicle)	
	Unsignalized Intersections	Signalized Intersections
A	≤ 10.0	≤ 10
B	> 10.0 and ≤ 15.0	> 10 and ≤ 20
C	> 15.0 and ≤ 25.0	> 20 and ≤ 35
D	> 25.0 and ≤ 35.0	> 35 and ≤ 55
E	> 35.0 and ≤ 50.0	> 55 and ≤ 80
F	> 50.0	> 80

• Level of Service (LOS): A “report card” rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay has become excessive, and demand has exceeded capacity. Table 1 provides the HCM Level of Service for Intersections.

• Volume-to-capacity (v/c) ratio: A decimal representation (typically between 0.00 and 1.00) of the proportion of capacity that is being used at a turn movement, approach leg, or intersection. It is determined by dividing the peak hour traffic volume by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. As the ratio approaches 1.00, congestion increases, and performance is reduced. If the ratio is greater than 1.00, the turn movement, approach leg, or intersection is oversaturated and usually results in excessive queues and long delays. The v/c and delay results are different depending on the type of traffic control.

Table 2: Comparison of Performance Measures

COMPARISON OF V/C AND DELAY		
Performance Measure	Signalized	Stop Controlled
Volume-to-Capacity	Volume-to-Capacity ratio	Critical Movement Volume-to-Capacity ratio
Delay (sec)	Average Intersection Delay	Critical Movement Delay

The subject intersection has an OHP Regional Classification and is located within the UGB for Sutherlin and the corresponding design objective for urban areas is LOS D per the Douglas County Traffic Impact Study (TIS) criteria for signalized intersections (updated Feb 2018). According to the 1999 Oregon Highway Plan (OHP) Policy, Table 6: Volume to Capacity Ratio Targets for Peak Hour Operating Conditions, the peak hour v/c mobility targets for the signalized and stop controlled operation conditions at the subject intersection are 0.90 for OR 138W, which is a non-MPO, non-freeway regional highway with a speed limit of < 35 mph, and 0.95 for the local road of Dakota Street.

Existing Conditions

This section provides documentation of the existing road and intersection characteristics, existing traffic volumes developed per ODOT Analysis and Procedures Manual (APM) Methodologies, safety performance required operating standards, and existing intersection operations.

Road and Intersection Characteristics

The highway segment has a federal classification of Urban Minor Arterial and is part of the Reduction Review Route for freight. According to the Blueprint for Urban Design (BUD) the urban context would be characterized as Suburban Fringe which is described as an area that often separates rural areas from more urban contexts and vehicle speeds are low through appropriate transition zones.

OR 138W is approximately 58 foot wide at the subject intersection and has a posted speed of 30 mph. There are 12 foot wide single lanes of travel in each direction of traffic with a 14 foot two-way left turn lane and a 12 foot westbound right turn lane. The shoulder widths are 4 feet on each side of the highway:

Mile Point	Road Way Codes	MEDIAN	Left Turn	Left Shldr	6	5	4	3	2	1	Right Shldr	Right Turn	Description
Highway #: 231 ELKTON-SUTHERLIN Hwy													
23.96	Z=	Width 14	0	4	0	0	0	0	12	12	4	12	DAKOTA ST.
		Type 1		AU					AU	AU	AU	AU	Eng Statn:
		Gravel Width:		0							0		County:
		Tot Lane Width:	24								58		Region
													District:
													Unit ID:
													OR Route: 138

Figure 2: Road Lane Widths

There is a driveway currently in the functional area of the intersection on the south side of the highway that creates a potential conflict point with vehicles entering and leaving Dakota Street at the same time. Approximately 1,000 feet to the east is the minor road stop-controlled T-intersection of Park Hill Lane that connects to the southbound I-5 Interstate entrance and exit ramps. Continuing east another 500 feet is the intersection on OR 138W of the northbound entrance and exit terminal ramps to the I-5 Interstate and is the nearest signal.

Existing Traffic Data

The most current traffic data as of this report was for 2021 and the Average Annual Daily Traffic (AADT) was reported to be 9,600 vehicles with approximately 4.35 % heavy vehicles (% HV). However, traffic patterns from 2020 through 2021 are considered unreliable due to the disruption from Covid. Therefore, the 2019 AADT on the highway at the subject intersection is also provided which was 12,300 vehicles with approximately 4.35% HV and a future (2039) AADT volume projected to be 16,000 vehicles.

The posted speed about ½ mile west of the subject intersection is 55 mph and transitions to 40 mph before the Umpqua Golf Course located on the north side of the highway. Continuing east, the speed changes to 30 mph about 260 feet west of Dakota Street and remains 30 mph through the signalized intersection of the I-5 Exit 136 NB entrance and exit terminal ramps further to the east.

Turning Movements counts were collected in June 2022 and the raw traffic counts can be found in the Appendix. The raw traffic counts were adjusted to the average peak hour for Signal Warrant analysis and to the 30th highest hour (design hour) for the Synchro analysis in this report using the APM methodologies.

Count Data and Seasonal Adjustment Factor

Following the APM procedures, since there is no ATR on OR 138W, the ATR Seasonal Trend Table (Updated 07/20/2021) for Commuter Trend was selected. The Seasonal Trend peak for the Commuter Trend occurs in late June. The count was collected in early June 2022. Since the Trend peak is in later June, the resulting seasonal factor of 1.02 was applied to the turning movement counts. The final 2022 peak hour traffic volumes are shown in Figure 3:



Figure 3: Existing 2022 Traffic Volumes

Existing Intersection Operations

Existing traffic operations at the subject intersection were evaluated using Synchro for the peak hour based on the Highway Capacity Manual (HCM) 6th Edition methodology for unsignalized intersections. Results were then compared to ODOT's minimum acceptable OHP Policy mobility targets and the Douglas County TIS objectives. Table 3 lists the estimated v/c ratio, delay, and LOS of the study intersection. The reports are included in the Appendix.

Table 3: Existing 2022 Intersection Operations

LOCATION	OPERATION STANDARD MOBILITY TARGET		PM PEAK HOUR		
	V/C	LOS	V/C RATIO	DELAY (S)	LOS
OR 138W	0.80	LOS D	0.01	8	A
Dakota Street	0.85	LOS D	0.26	15.1	C

Future Traffic Data

The ODOT Future Volume Tables projects a 1.43% linear annual growth rate over the next 20 years at the subject location. For the signal analysis, the future 2027 and 2042 traffic volumes were calculated with this growth rate according to the APM procedures.

Trip Generation

Trip generation is the method used to estimate the number of vehicles added to the roadway at a subject location. For this analysis, the Trip Generation Manual, 11th Edition based on land use data provided the expected added traffic volumes.

Planned Development Growth

There are design concepts for Exit 136 in the April 2009 Interchange Area Management Plan (IAMP). All concepts cut off access south of the existing ramp on Parkhill Lane. Images from the IAMP in Figure 4 shows the current layout and lane movements with an inset of a future concept. The installation of a signal at Dakota Street will change the T-intersection to a 4-way signal and enable connectivity to Duke Road and indirectly the southern Parkhill Lane. The added volumes due to these proposed changes to Exit 136 and Dakota Street are included in Figure 6 and subsequent analysis.

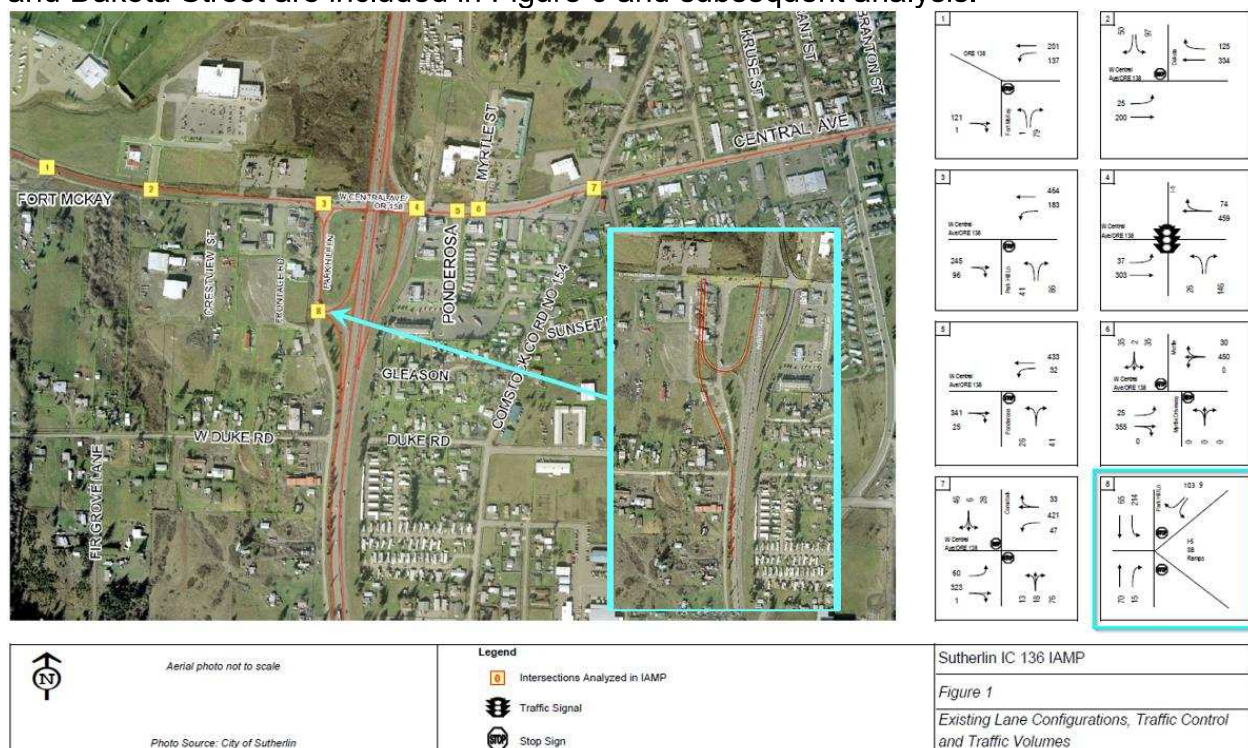


Figure 4: Existing IAMP Layout and 2009 Volumes for SB On and Off Ramps with possible Exit 136 Concept

Safety Analysis

Safety performance considers the number, severity, and type of crashes. A crash analysis for the subject intersection was conducted based on the five most recent years of published data (2017-2021) obtained from the ODOT Crash Analysis and Reporting Unit. A total of five crashes were reported in that time. All five crashes involved left turns east onto OR138W from Dakota Street that collided with westbound drivers on OR138W, resulting in two crashes with Evident Injury (INJB), one crash of Possible Injury (INJC), and the remaining two were Property Damage Only (PDO) crashes. No Fatal or Serious Injury crashes and no reported pedestrian or bicycle related crashes were reported.

Safety Priority Index System (SPIS) Locations

The Safety Priority Index System (SPIS) is a ranking system developed by ODOT to identify potential safety problems on state highways. A SPIS score is calculated based upon crash frequency, crash severity (no longer includes reported PDO crashes), and the AADT volume for a 0.10 mile or variable length segment along the state highway over a rolling three-year window. The study intersection, nor any roadway segments within a two mile radius, were flagged as a top 15% SPIS location.

Critical Crash Rate

The values shown in Figure 5, Exhibit 4-1 from the APM, represent the 90th percentile crash rates that are grouped by rural/urban, signalized/unsignalized, and three-leg/four-leg intersections. Intersections with crash rates that exceed the 90th percentile values shown in the table should be flagged for further analysis. With a 2021 AADT of 9,600 and five crashes in the five year analysis period, the resulting crash rate for the subject intersection is 0.290 and is less than the 90th percentile value of 0.293 shown below:

Exhibit 4-1: Intersection Crash Rates per MEV by Land Type and Traffic Control								
	Rural				Urban			
	3SG	3ST	4SG	4ST	3SG	3ST	4SG	4ST
No. of Intersections	7	115	20	60	55	77	106	60
Mean Crash Rate	0.226	0.196	0.324	0.434	0.275	0.131	0.477	0.198
Median Crash Rate	0.163	0.092	0.320	0.267	0.252	0.105	0.420	0.145
Standard Deviation	0.185	0.314	0.223	0.534	0.155	0.121	0.273	0.176
Coefficient of Variation	0.819	1.602	0.688	1.230	0.564	0.924	0.572	0.889
90 th Percentile Rate	0.464	0.475	0.579	1.080	0.509	0.293	0.860	0.408

Source: *Assessment of Statewide Intersection Safety Performance, FHWA-OR-RD-18, Portland State University and Oregon State University, June 2011, Table 4.1, p. 47.*

Figure 5: Intersection Crash Rates

The calculated crash rate of 0.290 is very near the threshold of 0.293 using the 2021 AADT. However, using the more reliable 2019 AADT, the calculated crash rate drops down to 0.220. Based on the analysis results, no further safety evaluation is recommended.

There are several developments at

in unnecessary delay for the state highway, thus not meeting the typical user expectancy. This would have resulted in hindering the intersection's operation and reducing safety. The Federal Highway Administration (FHWA) provides the Safety Performance for Intersection Control Evaluation (SPICE) and the Capacity Analysis for Planning of Junctions (CAP-X) analysis tools that compare intersections. The ODOT APM provides guidance and analysis procedures to evaluate reasonable alternatives for intersection control.

The Safety Performance for Intersection Control Evaluation (SPICE) tool performs predictive safety analysis of at grade intersections (updated in October 2018). The data inputs for this worksheet include current and future vehicle volumes by approach, selected traffic control for comparison, existing road geometry and pedestrian use, proximity to schools, transit, or alcohol establishments criteria, and traffic control Crash Modification Factor (CMF) adjustments. The output provides a crash prediction Summary for each traffic control:

Table 4: SPICE Results

Crash Prediction Summary				
Control Strategy	Crash Type	Opening Year	Design Year	Total Project Life Cycle
1-lane Roundabout	Total	0.23	0.25	1.45
	Fatal & Injury	0.09	0.10	0.56
2-lane Roundabout	Total	0.85	0.93	5.33
	Fatal & Injury	0.13	0.14	0.82
Minor Road Stop	Total	1.05	1.14	6.58
	Fatal & Injury	0.41	0.45	2.56
Traffic Signal	Total	1.45	1.60	9.15
	Fatal & Injury	0.47	0.52	2.98

The Capacity Analysis for Planning of Junctions (CAP-X) provides capacity analysis of the intersection for alternative selections (updated September 2018). The inputs for this worksheet are vehicle volumes by movement, maximum design capacity, identified Right-of-Way (ROW) for each traffic control, and pedestrian and bicycle configurations for each traffic control. The output provides an overall v/c ratio and ranking for each alternative selection:

Table 5: CAP-X Results

TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Pedestrian Accommodations	Bicycle Accommodations
1NS X 2EW Roundabout	0.21	1	Fair	Good
Traffic Signal	0.31	2	Fair	Excellent
1 X 1 Roundabout	0.41	3	Fair	Good
Two-Way Stop Control E-W	0.49	4	Fair	Good

The ODOT APM provides guidance on the alternative intersection control evaluation process. Considerations for the analysis include costs, impact to multi-modal and roadway users, road geometric changes, freight mobility, and environmental impacts. The previously discussed items to include are safety improvements. The reasonable

alternative comparison of assessments is shown in Table 6. The APM process also includes operational analysis that is discussed in this section with comparison tables of the outcomes.

Table 6: Intersection Control Analysis Comparison

Analysis Subject	Proposed Control Type/Improvement		
	Conventional (Minor Stop)	Single Lane Roundabout	Signal
Project Costs			
<i>Total Construction Cost Estimate</i>	\$0 (Existing)	\$3,000,000	\$1,600,000
<i>Ongoing Maintenance Cost Potential</i>	\$0	Minimal	Moderate
Safety			
<i>Number of expected crash reduction with Safety Improvement Crash Reduction Factor (CRF)</i>	1	2	3
Active Transportation Impacts			
<i>Bicyclist</i>	Shoulders with moderate to high impact.	Unfavorable for bicyclists.	Protected phase with the shortest distance.
Right-of-Way & Access Impacts			
<i>Anticipated access modifications and restrictions, amount of right-of-way acquisition required</i>	None	Larger footprint. Likely closure of a business access.	Smaller footprint. Less physical impacts to accesses.
Environmental & Regulatory Permitting Impacts			
<i>Cultural Resources, Natural Resources, Hazardous Materials, and Land Use Permitting</i>	None	Larger footprint, Likely result in more impacts	Smaller footprint. Result in some impacts.
Roadway User Interest Impacts			
<i>Local Community</i>	None – it is likely the locals will not notice a difference.	Moderate impact and resistance expected as roundabouts are not very common in this area.	Minimal impact and resistance expected as signals are the primary traffic control in the area.
<i>Freight*</i>	Moderate impact for entering the highway from Dakota Street. No resistance expected.	Typical designs accommodate a WB-67 vehicle. Moderate resistance expected.	Signal mast arm height restriction. Aligns with freight expectations and no resistance expected.
<i>Highway Maintenance</i>	None, minus periodically replacing signage as needed.	Minor, minimal maintenance required for roundabout.	Minor, minimal maintenance required for roundabout.
Project Risk			
<i>Potential for project delivery, construction, budget, and schedule</i>	None	Moderate, typical project concerns	Moderate, typical project concerns

**Mobility Advisory Committee (MAC) has not been approached with this report, these terms are generalized.*

Two-Way Stop Control

Stop Control at an intersection provides for orderly movement of traffic. The existing T-intersection conditions operate with stop control for the minor approach. The future 4-way configuration would add the south leg minor road that would also be stop controlled.

Conceptual Traffic Signal Design

The concept drawing for the planned improvements for a traffic signal are shown in Figure 7. For westbound OR 138W, this configuration includes a thru lane and a thru-right lane, a left turn lane, and a bike lane. The eastbound OR 138W lanes consist of a thru lane and a thru-right lane, a left turn lane, and a bike lane. The minor road approaches of Dakota Street configuration is a thru-right lane and a left turn lane. The described lane configuration is in alignment with the IAMP recommendation for five lanes.

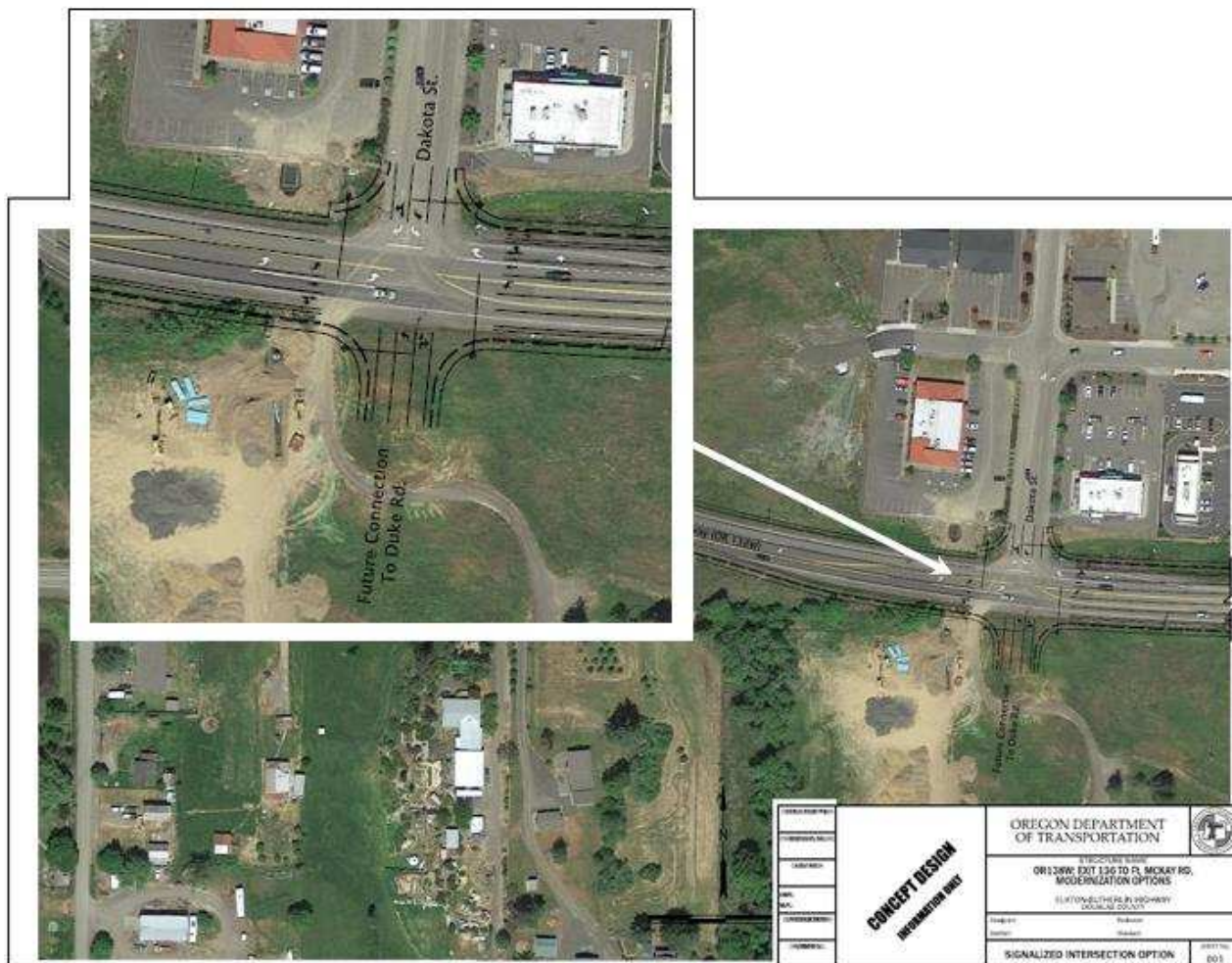


Figure 7: Traffic Signal Concept

Signal and Two-Way Stop Control Analysis

Level of service (LOS) ratings, volume-to-capacity (v/c) ratios, and delay are performance measures that provide a standard analysis of intersection operations. Queuing analyses are rounded to the nearest 25 ft and provides additional operation information about the length of the vehicles waiting at the intersection.

Analysis using Synchro was completed using the 30th highest hour count data from 2022. The following results for the T-intersection are shown in Table 7 and the future volume conditions includes some analysis for the added medical facility volumes.

Table 7: Comparison of Operations for T-intersection

COMPARISON OF V/C AND DELAY									
Year	Performance Measure	Signalized				Stop Controlled			
		EB	WB	NB	SB	EB	WB	NB	SB
2022	Volume-to-Capacity	0.30	0.48	-	0.46	-	-	-	0.26
	Delay (sec)	4.9	9.1	-	19.8	8.0	-	-	16.5
	LOS	A	B	-	B	A	-	-	C
	Queue (ft)	100	150	-	75	25	0	-	50
2027	Volume-to-Capacity	0.32	0.51	-	0.48	-	-	-	0.29
	Delay (sec)	5	9.3	-	20.2	8.1	-	-	17.8
	LOS	A	A	-	C	A	-	-	C
	Queue (ft)	125	150	-	75	25	25	-	75
2027 with Trips	Volume-to-Capacity	0.32	0.52	-	0.56	-	-	-	0.40
	Delay (sec)	5.1	10.3	-	22.7	8.1	-	-	21.4
	LOS	A	B	-	C	A	-	-	C
	Queue (ft)	150	175	-	100	50	25	-	100
2042	Volume-to-Capacity	0.38	0.6	-	0.54	-	-	-	0.43
	Delay (sec)	5.6	10.5	-	21.9	8.3	-	-	24.2
	LOS	A	B	-	C	A	-	-	C
	Queue (ft)	150	175	-	100	25	25	-	100

Future traffic volume analysis indicates the Stop Controlled intersection alternative v/c ratio is more sensitive than the traffic signal as can be seen in Table 8.

The design concept for the intersection of OR 138W and Dakota Street is a 4-way configuration with added lanes on both the major and minor roads to accommodate the completed and additional developments underway. It also includes the IAMP recommendations at Exit 136 that change access to Parkhill. Table 8 below provides the 4-way comparison.

Table 8: Comparison of Operations for 4-way Intersection

COMPARISON OF V/C AND DELAY									
Year	Performance Measure	Signalized				Stop Controlled			
		EB	WB	NB	SB	EB	WB	NB	SB
2022	Volume-to-Capacity	0.30	0.48	-	0.46	-	-	-	0.26
	Delay (sec)	4.9	9.1	-	19.8	8.0	-	-	16.5
	LOS	A	B	-	B	A	-	-	C
	Queue (ft)	100	150	-	75	25	0	-	50
2027	Volume-to-Capacity	0.32	0.51	-	0.48	-	-	-	0.29
	Delay (sec)	5	9.3	-	20.2	8.1	-	-	17.8
	LOS	A	A	-	C	A	-	-	C
	Queue (ft)	125	150	-	75	25	25	-	75

Table 8: Continue of Comparison of Operations for 4-way Intersection

2027 with Trips	Volume-to-Capacity	0.32	0.52	-	0.56	-	-	-	0.40
	Delay (sec)	5.1	10.3	-	22.7	8.1	-	-	21.4
	LOS	A	B	-	C	A	-	-	C
	Queue (ft)	150	175	-	100	50	25	-	100
2042	Volume-to-Capacity	0.38	0.6	-	0.54	-	-	-	0.43
	Delay (sec)	5.6	10.5	-	21.9	8.3	-	-	24.2
	LOS	A	B	-	C	A	-	-	C
	Queue (ft)	150	175	-	100	25	25	-	100

The 2022 analysis indicates the Stop Control will be at LOS E when the T-intersection is reconfigured to a 4-way intersection with the added medical facility and Exit 136 volumes.

Conceptual Roundabout Design

Per the FHWA Roundabout Information Guide (June 2000), all movements in a roundabout are given equal priority and is similar to all-way stop control. This may not provide the desired improvements if the movements have an unbalanced volume distribution. Roundabouts typically provide the pedestrians crossing benefit of one direction of conflicting traffic at a time, may include some out-of-direction travel. Pedestrians will need to judge the available gap for crossing each separate crosswalk. The guide states that roundabouts may not provide safety benefits for bicycles.

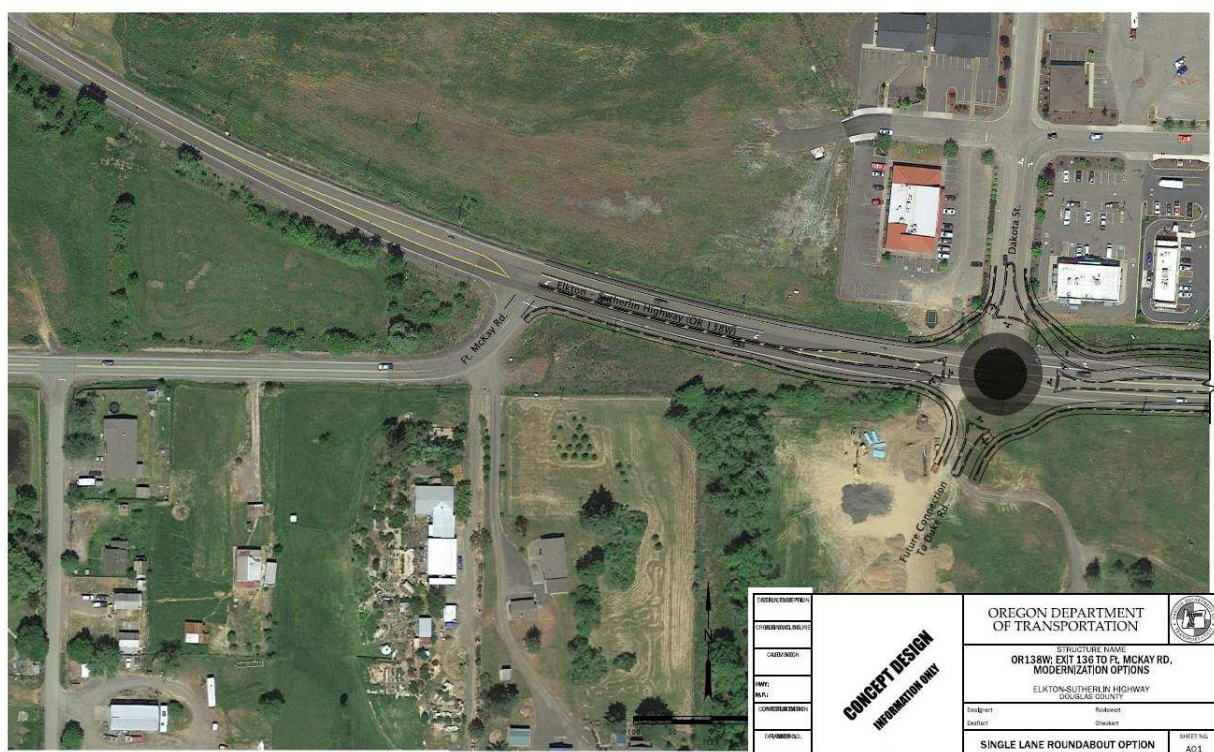


Figure 8: Roundabout Concept

Roundabout Analysis

The proposed roundabout design is shown as a single lane for all directions of traffic flow. Analysis results in Table 9 are for a 20 year design and were obtained by using the Sidra program that provides LOS and v/c using the HCM 2010 Methodologies for sign control.

These results indicate the added volume for the medical facility and Exit 136 ramp reconfiguration will result in an unfavorable LOS E. The single lane roundabout would require more ROW acquisition than the other options and affect

the access for the business already located on the north side of the highway. The recommendation in the IAMP is to increase the number of lanes on OR 138W and would require even more ROW which is not feasible.

Table 9: Roundabout Operating Performance

ROUNDBOUT V/C AND DELAY					
Year	Performance Measure	EB	WB	NB	SB
2042 4-way Trips and Exit 136	Volume-to-Capacity	0.79	0.81	0.19	0.92
	Delay (sec)	29.4	19.6	10.9	48.7
	LOS	D	C	B	E
	Queue (ft)	250	275	25	400

Intersection Control Evaluation Outcome

The program output results for the 5 year and 20 year from Synchro and Sidra are shown in the comparison table of the critical movement analysis outputs that include the vehicle volume from the medical facility and Exit 136 reconfiguration:

Table 10: Alternative Comparison of Operating Performance

COMPARISON OF V/C AND DELAY for CRITICAL SB MOVEMENT				
Year	Performance Measure	Signalized	Roundabout	Stop Controlled
2027 4-way Trips and Exit 136	Volume-to-Capacity	0.45	0.64	0.69
	Delay (sec)	17.5	18.6	52.4
	LOS	B	C	F
	Queue (ft)	100	150	100
2042 4-way Trips and Exit 136	Volume-to-Capacity	0.63	0.92	1.33
	Delay (sec)	24.3	48.7	247.3
	LOS	C	E	F
	Queue (ft)	150	400	300

The 20 year outputs from the analysis tools indicate the Traffic Signal provides the lowest v/c ratio, lowest delay, and an acceptable LOS rating with the Stop Controlled alternative exceeding capacity, an unacceptable LOS, and excessive delays. The ODOT ICE 20 year analysis outcome ranked the selected alternatives in the order of the Traffic Signal, followed by the Roundabout, and lastly, the Stop Controlled intersection traffic control alternatives. Based on the available CRFs, more safety improvements for the existing crash type can be gained by the installation of the traffic signal at OR 138W/Central Avenue at Dakota Street over the roundabout. Other factors to consider for Roundabouts are the unbalanced volume distribution, larger ROW and participant conflicts. Based on the above information from a variety of analysis tools, the Traffic Signal is ranked the

highest in all outcomes. Additional Analysis is still needed to determine if a Traffic Signal is warranted.

Traffic Signal Warrant Analysis

The Manual on Uniform Traffic Control Devices (MUTCD) provides nine different warrants for the criteria to install a signal that are based on traffic average volumes, pedestrian average volumes, crash history, and other roadway conditions. Traffic Signal Analysis was conducted per the MUTCD justification process to determine if the installation of a traffic signal is warranted.

Traffic Signal Warrant Analysis - Existing Conditions

Count data for 2022 developed per the APM indicates that Warrant 1, Condition B and Warrant 2 were met for a community less than 10,000.

Figure 9: MUTCD Table 4C-1

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume									
Condition A—Minimum Vehicular Volume									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% ^a	80% ^b	70% ^c	56% ^d	100% ^a	80% ^b	70% ^c	56% ^d
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112
Condition B—Interruption of Continuous Traffic									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% ^a	80% ^b	70% ^c	56% ^d	100% ^a	80% ^b	70% ^c	56% ^d
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

^c May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Table 11: Data for Warrant 1

Hour	Major Average vph	Minor Average vph
9:30	528	57
11:00	542	75
12:00	655	117
13:00	593	84
14:00	590	60
15:00	615	88
16:00	675	97
17:00	628	86

The 8 hours shown in Table 11 meets the criteria from Figure 5, the Table 4C-1 for Warrant 1, Condition B.

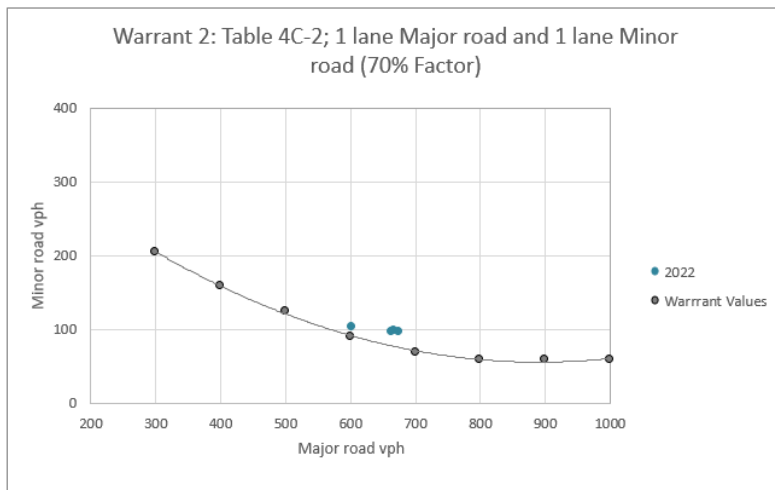


Figure 10: Graphed values for MUTCD Table 4C-2 and 2022 Volume Data

Table 12: Data for Warrant 2

Hour	Major Average vph	Minor Average vph
11:45	667	99
12:45	603	104
15:30	674	97
16:30	663	97

The graph (Figure 10) for Warrant 2, Figure 4C-2, is shown with the qualifying values shown in Table 12.

Per the MUTCD, a traffic control signal shall be considered if one of the signal warrants are met. Two warrants were met; Warrant 1, Condition B and Warrant 2 using the values from an isolated community with a population of less than 10,000. The other seven warrants were either not met or not applicable.

Traffic Signal Warrant Analysis - Future Conditions

Analysis was done using the averaged 2022 data combined with the added expected volumes from the medical facility for the planned 5-lane configuration. The qualifying combined 2022 hourly traffic volumes shown in Table 13 indicates that Signal Warrant 1, Condition A&B values previously shown (Figure 5) are met for a minimum of 504 vehicles on the major road and a minimum of 84 vehicles on the minor road for a population less than 10,000. Signal Warrant 2 was also met for the 5-lane configuration with the 2022 volumes that include the medical facility trips (Figure 11).

Table 13: 2022 Volume Data with Trips for Warrant 1

Hour	Major Average vph	Minor Average vph
9:00	586	91
10:00	614	86
11:00	640	109
12:00	753	151
13:00	691	118
14:00	688	94
15:00	713	122
16:00	773	131
17:00	726	120

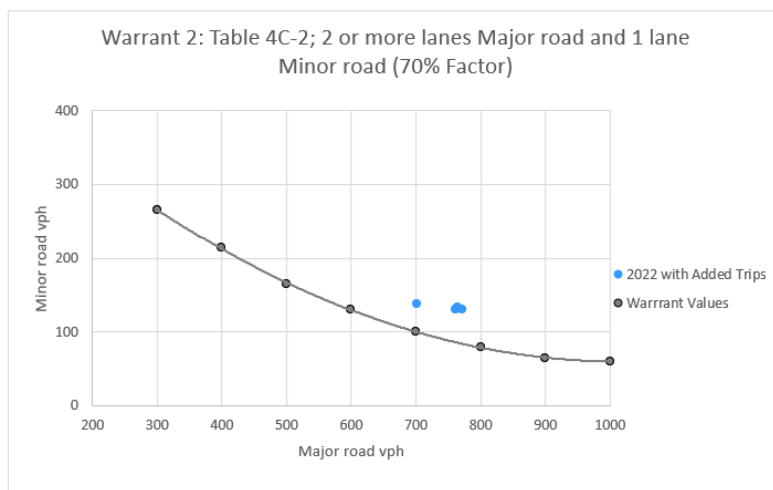


Figure 11: Warrant with 2022 Volume Data and Type

The future 2027 expected volumes that include the medical facility and the Exit 136 volumes were analyzed and results indicated that Signal Warrant 1, Condition A and Warrant 2 would be met. Both the 2022 and 2027 year analysis for Signal Warrants 1 and 2 were met while the other seven warrants were either not met or do not apply.

Signal Progression Analysis

Per OAR 734-020-0480, a traffic signal progression analysis is required for both existing and future conditions when a proposed traffic signal location is within one half mile of any existing or proposed new traffic signal. There is a traffic signal located 0.29 mile to the east at the NB I-5 Ramp terminals.

Existing conditions do not require progression analysis since there is only one signal located at the NB ramp terminals. The installation of a signal at Dakota Street would create the need for progression analysis. The IAMP future ramp terminal concept also includes a design for the SB on and off ramps connecting directly to OR 138W at a signalized intersection. This concept would increase the number of signals to three signals. Signal progression analysis was completed for the 2027 future possible conditions that would have the largest number of proposed coordinated signals using Synchro and the Time-Space-Diagram (TSD) tool. Shown in Figure 11 are the results of the graphic progression for a 90 second cycle length with leading and lagging left turns under the 90th percentile condition:

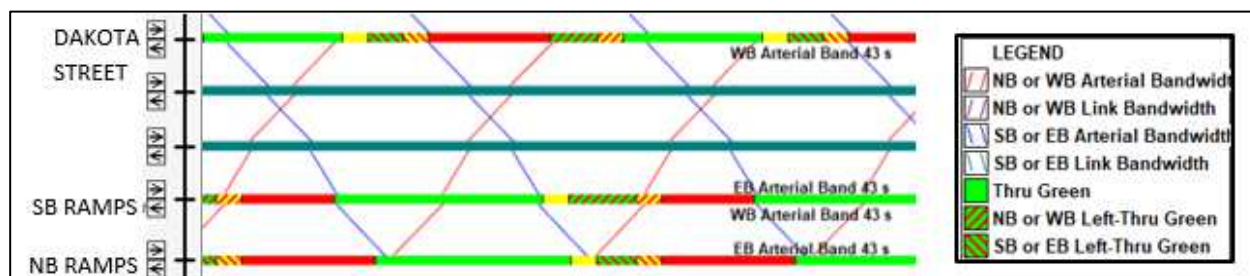


Figure 12: Time-Space-Diagram

Bandwidth is the amount of time available for vehicles to travel through a system at a determined progression speed without impedance. Under the conditions for three coordinated signals, the TSD results indicate a 43 second bandwidth would allow most vehicles the progression opportunity through the signalized intersections. Since this is an acceptable outcome, the concept with two signals would also provide a favorable analysis outcome.

Documentation of Transportation System Plan Consistency

The Douglas County Transportation System Plan (updated in October 2022) includes improvements for the I-5 Interchange at Exit 136 following the 2009 IAMP that identified deficiencies and improvements. Those improvements included a preferred design for the interchange to mitigate projected travel demand. Specified in the IAMP was to increase OR 138W/Central Avenue to five lanes from Fort McKay Road to Comstock Road. Also mentioned was the land use around the interchange and access to Parkhill Lane and the Frontage Road to help support the operational improvements needed for the interchange. The configuration and analysis proposed in this report supports the recommendations in the IAMP and Douglas Counties vision for the future.

Evidence of Other Agency Support

The City is in support of the signal and is prepared to provide the funding to install the 4-way signal and increased number of lanes for both OR 138W and Dakota Street.

Conclusion







There are safety and capacity concerns at the intersection of OR 138W and Dakota Street. The Stop Controlled alternative has longer delays than the Traffic Signal delays and will progress to LOS F within 5 years. The Stop Controlled alternative will also be overcapacity by year 2042. Operations of the Traffic Signal maintain acceptable levels for LOS, delay, and v/c ratios for all analysis years. The addition of a traffic signal on OR 138W will not have queuing, LOS or capacity concerns and provides sufficient capacity to handle future traffic growth. The signal would also reduce the number and severity of the angle turning related crashes at the intersection and would require less right-of-way acquisition than a roundabout. The roundabout was considered at this location, but this study reveals the benefits of the Traffic Signal over a Roundabout or Stop Controlled. Therefore, based on the operations analysis and feasibility, a traffic signal is recommended to improve the overall safety and operation of the intersection.

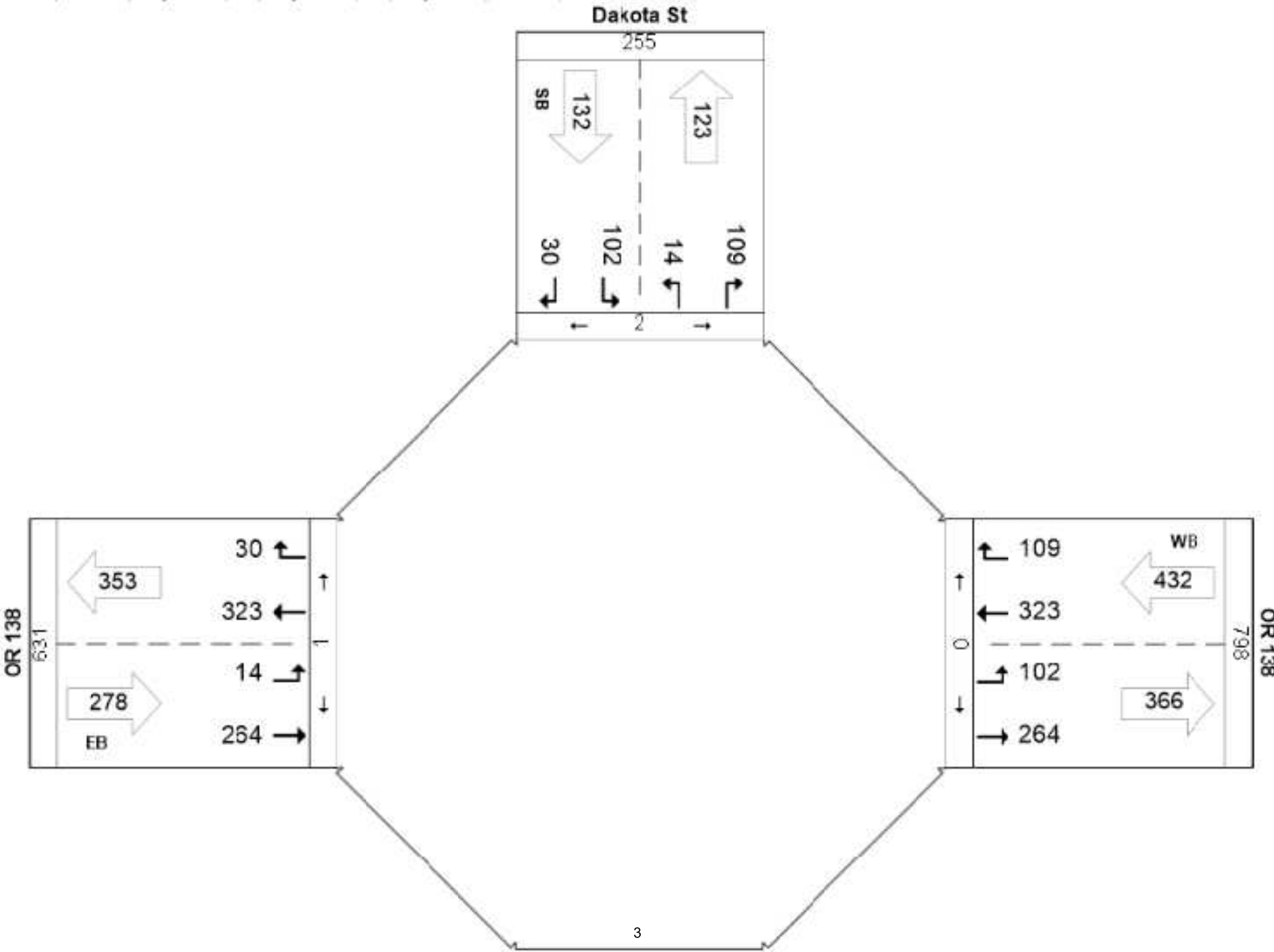
APPENDIX

Dakota T-Intersection Existing Stop Controlled

4: OR138W & Dakota St

01/04/2023

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	268	328	111	104	30
Future Vol, veh/h	14	268	328	111	104	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	0	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	15	282	345	117	109	32
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	345	0	-	0	657	345
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	312	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1203	-	-	0	427	693
Stage 1	-	-	-	0	713	-
Stage 2	-	-	-	0	738	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1203	-	-	-	422	693
Mov Cap-2 Maneuver	-	-	-	-	422	-
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	738	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		15.1		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2	
Capacity (veh/h)	1203	-	-	422	693	
HCM Lane V/C Ratio	0.012	-	-	0.259	0.046	
HCM Control Delay (s)	8	-	-	16.5	10.4	
HCM Lane LOS	A	-	-	C	B	
HCM 95th %tile Q(veh)	0	-	-	1	0.1	





Oregon Traffic Monitoring System

Summary of Turning Movements

6/7/2022 Through 6/7/2022

Intersection ID: 28085

Date: 6/7/2022

County: Douglas

Hour: 6:00 AM - 10:00 PM

City: Sutherlin

Legs: Dakota St (SB), OR 138 (WB), OR 138 (EB)

LRS ID: 23100I00

Location: Dakota St at OR 138

LRS Location Point: 23.96

Notes:

Summary By Movements								Entering Volumes		
Time of Day	N-E	N-W	E-N	E-W	W-N	W-E	Total	North	East	West
6:00	2	1	5	10	1	23	42	3	15	24
6:15	3	0	3	18	0	37	61	3	21	37
6:30	2	1	2	32	0	35	72	3	34	35
6:45	2	1	9	33	2	55	102	3	42	57
7:00	10	2	3	33	3	63	114	12	36	66
7:15	11	1	4	27	4	74	121	12	31	78
7:30	5	3	10	32	1	124	175	8	42	125
7:45	6	5	10	46	3	84	154	11	56	87
8:00	3	0	9	43	0	48	103	3	52	48
8:15	5	2	8	49	0	47	111	7	57	47
8:30	9	3	14	48	2	53	129	12	62	55
8:45	9	1	12	46	2	68	138	10	58	70
9:00	13	2	10	40	1	70	136	15	50	71
9:15	16	2	13	53	3	47	134	18	66	50
9:30	14	3	18	58	1	59	153	17	76	60
9:45	17	4	15	54	5	67	162	21	69	72
10:00	12	4	11	51	3	71	152	16	62	74
10:15	17	3	15	60	1	67	163	20	75	68
10:30	14	3	18	54	5	56	150	17	72	61
10:45	12	9	16	51	5	59	152	21	67	64
11:00	19	4	17	58	2	57	157	23	75	59
11:15	21	1	16	47	3	59	147	22	63	62
11:30	17	3	26	51	6	55	158	20	77	61
11:45	22	7	27	60	7	79	202	29	87	86



Oregon Traffic Monitoring System

Summary of Turning Movements

6/7/2022 Through 6/7/2022

Summary By Movements								Entering Volumes		
Time of Day	N-E	N-W	E-N	E-W	W-N	W-E	Total	North	East	West
12:00	34	14	26	72	2	71	219	48	98	73
12:15	34	3	34	72	9	62	214	37	106	71
12:30	14	6	34	57	8	82	201	20	91	90
12:45	41	4	27	53	4	76	205	45	80	80
13:00	18	5	25	47	0	77	172	23	72	77
13:15	21	7	27	61	1	71	188	28	88	72
13:30	29	10	22	72	3	69	205	39	94	72
13:45	20	3	28	47	8	66	172	23	75	74
14:00	16	12	24	63	4	66	185	28	87	70
14:15	17	9	22	47	4	77	176	26	69	81
14:30	15	3	22	78	1	57	176	18	100	58
14:45	15	14	14	74	5	63	185	29	88	68
15:00	24	2	23	68	4	50	171	26	91	54
15:15	17	3	22	69	3	49	163	20	91	52
15:30	28	9	21	90	2	74	224	37	111	76
15:45	24	5	33	65	4	70	201	29	98	74
16:00	24	6	34	74	2	52	192	30	108	54
16:15	26	9	25	93	4	66	223	35	118	70
16:30	23	8	24	82	5	75	217	31	106	80
16:45	29	7	26	74	3	71	210	36	100	74
17:00	25	6	28	76	2	53	190	31	104	55
17:15	25	4	32	88	1	58	208	29	120	59
17:30	22	6	18	94	3	52	195	28	112	55
17:45	19	6	28	62	2	64	181	25	90	66
18:00	21	2	15	54	0	44	136	23	69	44
18:15	16	5	22	47	2	31	123	21	69	33
18:30	17	7	14	51	2	19	110	24	65	21
18:45	9	3	9	41	0	36	98	12	50	36
19:00	11	1	14	43	1	24	94	12	57	25
19:15	16	5	15	31	3	17	87	21	46	20



Oregon Traffic Monitoring System

Summary of Turning Movements

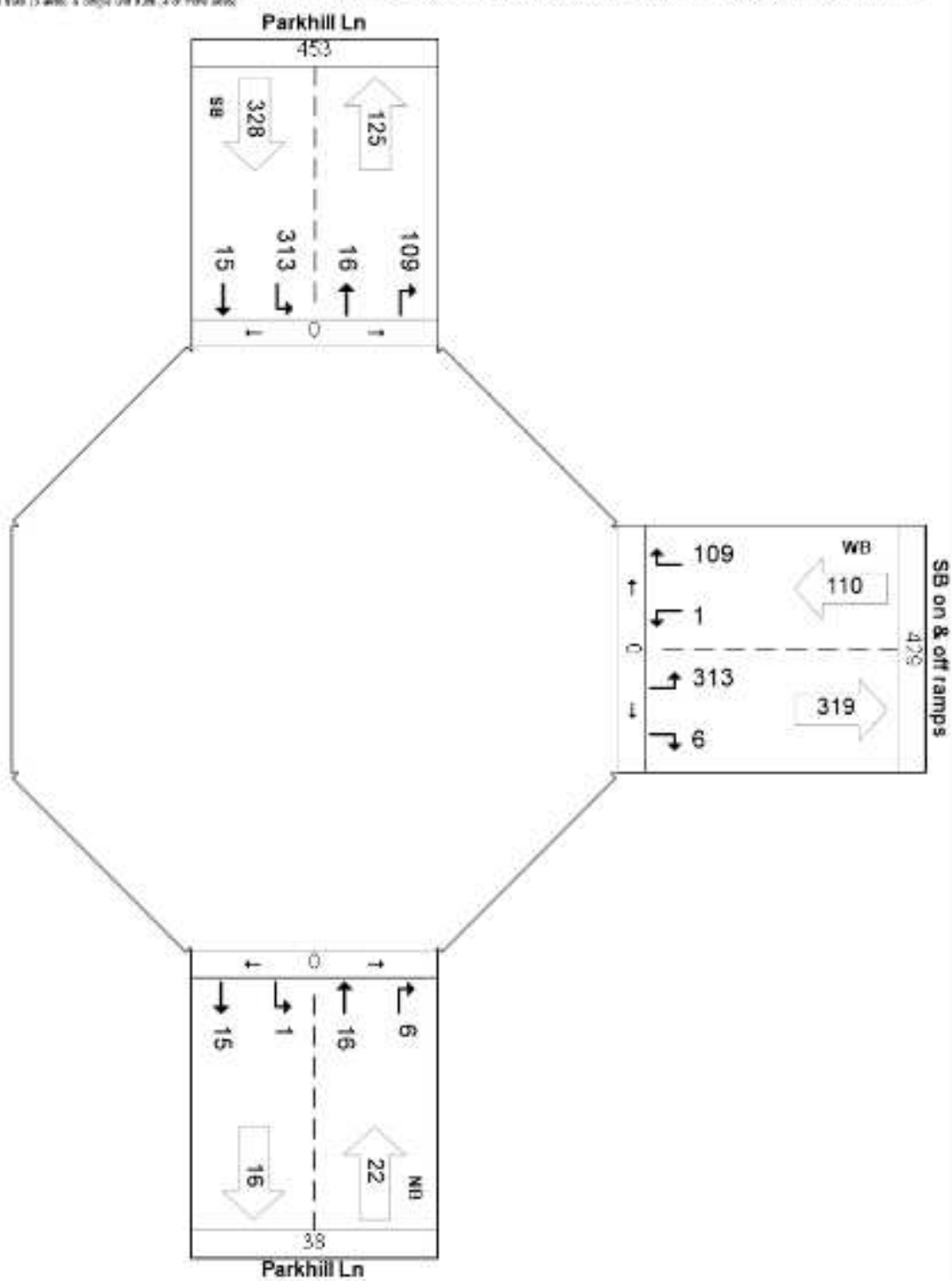
6/7/2022 Through 6/7/2022

Summary By Movements								Entering Volumes		
Time of Day	N-E	N-W	E-N	E-W	W-N	W-E	Total	North	East	West
19:30	11	2	11	27	2	22	75	13	38	24
19:45	9	4	12	43	0	26	94	13	55	26
20:00	7	3	11	53	1	21	96	10	64	22
20:15	8	3	19	34	2	30	96	11	53	32
20:30	13	2	21	31	0	20	87	15	52	20
20:45	17	2	7	24	1	15	66	19	31	16
21:00	12	3	12	15	1	14	57	15	27	15
21:15	12	3	11	15	1	11	53	15	26	12
21:30	6	0	4	19	2	14	45	6	23	16
21:45	3	2	2	15	0	13	35	5	17	13
Total Count	1009	273	1109	3275	162	3385	9213	1282	4384	3547

[illegible]

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Single Value Track (1 axis): 6. Degree





Oregon Traffic Monitoring System

Summary of Turning Movements

9/26/2017 Through 9/26/2017

Intersection ID: 28088

Date: 9/26/2017

County: Douglas

Hour: 6:00 AM - 10:00 PM

City: Sutherlin

Legs: Parkhill Ln (SB), SB on & off ramps (WB), Parkhill Ln (NB)

LRS ID: 231ADI00

Location: Parkhill Ln at SB on & off ramps

LRS Location Point: 24.28

Notes: Weather: Clear

Summary By Movements								Entering Volumes		
Time of Day	N-E	N-S	E-N	E-S	S-N	S-E	Total	North	East	South
6:00	54	6	19	0	3	6	88	60	19	9
6:15	49	4	13	0	2	3	71	53	13	5
6:30	48	3	12	0	2	2	67	51	12	4
6:45	47	2	12	0	1	2	64	49	12	3
7:00	88	5	20	1	7	3	124	93	21	10
7:15	86	4	17	0	4	3	114	90	17	7
7:30	84	3	14	0	3	3	107	87	14	6
7:45	81	1	14	0	3	2	101	82	14	5
8:00	79	8	21	1	2	5	116	87	22	7
8:15	76	4	17	0	2	4	103	80	17	6
8:30	75	4	16	0	1	4	100	79	16	5
8:45	74	4	14	0	0	3	95	78	14	3
9:00	72	3	21	0	5	3	104	75	21	8
9:15	67	3	18	0	2	3	93	70	18	5
9:30	65	3	16	0	2	1	87	68	16	3
9:45	64	2	14	0	0	1	81	66	14	1
10:00	69	6	19	2	5	3	104	75	21	8
10:15	66	6	17	1	5	2	97	72	18	7
10:30	64	5	16	0	4	1	90	69	16	5
10:45	62	4	14	0	2	1	83	66	14	3
11:00	74	8	25	0	7	3	117	82	25	10
11:15	72	5	23	0	4	2	106	77	23	6
11:30	70	4	21	0	3	1	99	74	21	4
11:45	68	4	21	0	3	1	97	72	21	4



Oregon Traffic Monitoring System

Summary of Turning Movements

9/26/2017 Through 9/26/2017

Summary By Movements								Entering Volumes		
Time of Day	N-E	N-S	E-N	E-S	S-N	S-E	Total	North	East	South
12:00	83	5	31	1	6	2	128	88	32	8
12:15	78	4	28	0	4	2	116	82	28	6
12:30	77	3	25	0	3	1	109	80	25	4
12:45	75	3	25	0	3	1	107	78	25	4
13:00	76	10	27	3	7	4	127	86	30	11
13:15	72	9	23	1	7	4	116	81	24	11
13:30	71	9	20	0	5	3	108	80	20	8
13:45	69	8	19	0	5	3	104	77	19	8
14:00	66	9	20	0	3	2	100	75	20	5
14:15	68	9	22	1	5	5	110	77	23	10
14:30	79	8	19	1	3	3	113	87	20	6
14:45	72	6	24	4	2	2	110	78	28	4
15:00	78	10	20	0	5	3	116	88	20	8
15:15	59	10	13	1	5	4	92	69	14	9
15:30	65	11	31	3	9	3	122	76	34	12
15:45	63	4	38	1	4	3	113	67	39	7
16:00	72	9	25	1	3	9	119	81	26	12
16:15	63	4	22	3	1	1	94	67	25	2
16:30	55	1	27	1	7	2	93	56	28	9
16:45	70	8	30	1	4	1	114	78	31	5
17:00	64	9	25	0	3	4	105	73	25	7
17:15	60	6	24	0	3	4	97	66	24	7
17:30	50	3	27	1	5	1	87	53	28	6
17:45	58	10	25	1	5	2	101	68	26	7
18:00	40	8	22	1	4	2	77	48	23	6
18:15	38	7	22	1	4	2	74	45	23	6
18:30	37	7	18	0	3	2	67	44	18	5
18:45	35	6	17	0	3	0	61	41	17	3
19:00	31	8	16	1	5	3	64	39	17	8
19:15	28	5	12	0	5	3	53	33	12	8



Oregon Traffic Monitoring System

Summary of Turning Movements

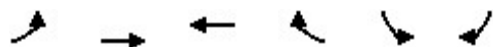
9/26/2017 Through 9/26/2017

Summary By Movements								Entering Volumes		
Time of Day	N-E	N-S	E-N	E-S	S-N	S-E	Total	North	East	South
19:30	26	4	12	0	4	1	47	30	12	5
19:45	25	3	12	0	4	1	45	28	12	5
20:00	23	5	11	1	2	3	45	28	12	5
20:15	21	4	7	0	2	2	36	25	7	4
20:30	21	4	6	0	2	1	34	25	6	3
20:45	20	3	6	0	0	1	30	23	6	1
21:00	17	4	9	0	2	2	34	21	9	4
21:15	15	4	7	0	1	2	29	19	7	3
21:30	14	3	6	0	0	1	24	17	6	1
21:45	14	2	5	0	0	0	21	16	5	0
Total Count	3702	346	1192	33	220	157	5650	4048	1225	377

T-Intersection Signal Capacity and LOS - 2022 Volumes

4: OR138W & Dakota St

01/30/2023



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	268	328	111	104	30
Future Volume (vph)	14	268	328	111	104	30
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	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)	1576	1552	1552	1410	1560	1396
Flt Permitted	0.43	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	718	1552	1552	1410	1560	1396
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	282	345	117	109	32
RTOR Reduction (vph)	0	0	0	63	0	27
Lane Group Flow (vph)	15	282	345	54	109	5
Heavy Vehicles (%)	2%	9%	9%	2%	3%	3%
Turn Type	pm+pt	NA	NA	Perm	pm+pt	Perm
Protected Phases	5	2	6		7	
Permitted Phases	2			6	4	4
Actuated Green, G (s)	29.6	29.6	22.7	22.7	7.5	7.5
Effective Green, g (s)	29.6	29.6	22.7	22.7	7.5	7.5
Actuated g/C Ratio	0.60	0.60	0.46	0.46	0.15	0.15
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	448	935	717	651	238	213
v/s Ratio Prot	0.00	c0.18	c0.22		c0.07	
v/s Ratio Perm	0.02			0.04		0.00
v/c Ratio	0.03	0.30	0.48	0.08	0.46	0.02
Uniform Delay, d1	4.3	4.7	9.1	7.4	18.9	17.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.2	0.5	0.1	1.4	0.0
Delay (s)	4.3	4.9	9.6	7.4	20.3	17.7
Level of Service	A	A	A	A	C	B
Approach Delay (s)		4.9	9.1		19.8	
Approach LOS		A	A		B	
Intersection Summary						
HCM 2000 Control Delay			9.4		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.50			
Actuated Cycle Length (s)			49.1		Sum of lost time (s)	18.0
Intersection Capacity Utilization			35.0%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

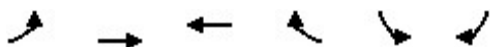
Intersection: 4: OR138W & Dakota St

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	T	L	R
Maximum Queue (ft)	35	115	151	81	46
Average Queue (ft)	6	48	69	34	14
95th Queue (ft)	27	96	134	62	38
Link Distance (ft)				473	473
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

T-Intersection Signal Capacity and LOS - 2027 Volumes

4: OR138W & Dakota St

01/30/2023



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	287	351	119	111	32
Future Volume (vph)	15	287	351	119	111	32
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	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)	1576	1552	1552	1410	1560	1396
Flt Permitted	0.42	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	689	1552	1552	1410	1560	1396
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	302	369	125	117	34
RTOR Reduction (vph)	0	0	0	66	0	29
Lane Group Flow (vph)	16	302	369	59	117	5
Heavy Vehicles (%)	2%	9%	9%	2%	3%	3%
Turn Type	pm+pt	NA	NA	Perm	pm+pt	Perm
Protected Phases	5	2	6		7	
Permitted Phases	2			6	4	4
Actuated Green, G (s)	30.4	30.4	23.5	23.5	7.8	7.8
Effective Green, g (s)	30.4	30.4	23.5	23.5	7.8	7.8
Actuated g/C Ratio	0.61	0.61	0.47	0.47	0.16	0.16
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	433	939	726	660	242	216
v/s Ratio Prot	0.00	c0.19	c0.24		c0.07	
v/s Ratio Perm	0.02			0.04		0.00
v/c Ratio	0.04	0.32	0.51	0.09	0.48	0.02
Uniform Delay, d1	4.4	4.8	9.3	7.4	19.4	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.2	0.6	0.1	1.5	0.0
Delay (s)	4.5	5.0	9.9	7.5	20.9	18.0
Level of Service	A	A	A	A	C	B
Approach Delay (s)		5.0	9.3		20.2	
Approach LOS		A	A		C	
Intersection Summary						
HCM 2000 Control Delay			9.6		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.53			
Actuated Cycle Length (s)			50.2		Sum of lost time (s)	18.0
Intersection Capacity Utilization			36.7%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

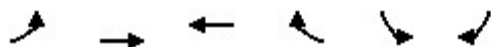
Intersection: 4: OR138W & Dakota St

Movement	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	R	L	R
Maximum Queue (ft)	31	163	161	11	96	45
Average Queue (ft)	8	59	74	0	35	15
95th Queue (ft)	31	118	141	8	71	40
Link Distance (ft)					473	473
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

T-Intersection Signalized Capacity and LOS - 2042 Volumes

4: OR138W & Dakota St

01/30/2023



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	345	422	143	134	39
Future Volume (vph)	18	345	422	143	134	39
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	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)	1576	1552	1552	1410	1560	1396
Flt Permitted	0.36	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	598	1552	1552	1410	1560	1396
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	363	444	151	141	41
RTOR Reduction (vph)	0	0	0	78	0	34
Lane Group Flow (vph)	19	363	444	73	141	7
Heavy Vehicles (%)	2%	9%	9%	2%	3%	3%
Turn Type	pm+pt	NA	NA	Perm	pm+pt	Perm
Protected Phases	5	2	6		7	
Permitted Phases	2			6	4	4
Actuated Green, G (s)	32.6	32.6	25.7	25.7	8.9	8.9
Effective Green, g (s)	32.6	32.6	25.7	25.7	8.9	8.9
Actuated g/C Ratio	0.61	0.61	0.48	0.48	0.17	0.17
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	380	945	745	677	259	232
v/s Ratio Prot	0.00	c0.23	c0.29		c0.09	
v/s Ratio Perm	0.03			0.05		0.00
v/c Ratio	0.05	0.38	0.60	0.11	0.54	0.03
Uniform Delay, d1	4.9	5.3	10.1	7.6	20.4	18.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	1.3	0.1	2.3	0.1
Delay (s)	5.0	5.6	11.4	7.7	22.8	18.7
Level of Service	A	A	B	A	C	B
Approach Delay (s)		5.6	10.5		21.9	
Approach LOS		A	B		C	
Intersection Summary						
HCM 2000 Control Delay			10.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.61			
Actuated Cycle Length (s)			53.5		Sum of lost time (s)	18.0
Intersection Capacity Utilization			42.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

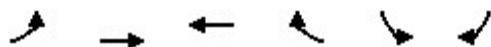
Intersection: 4: OR138W & Dakota St

Movement	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	R	L	R
Maximum Queue (ft)	44	171	175	33	130	48
Average Queue (ft)	14	70	93	1	48	18
95th Queue (ft)	40	136	161	14	96	44
Link Distance (ft)					473	473
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

T-Intersection Signal Capacity and LOS - 2027 Volume plus Medical Trips

4: OR138W & Dakota St

01/30/2023



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	42	287	351	142	135	32
Future Volume (vph)	42	287	351	142	135	32
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	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)	1576	1552	1552	1410	1560	1396
Flt Permitted	0.41	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	678	1552	1552	1410	1560	1396
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	302	369	149	142	34
RTOR Reduction (vph)	0	0	0	81	0	28
Lane Group Flow (vph)	44	302	369	68	142	6
Heavy Vehicles (%)	2%	9%	9%	2%	3%	3%
Turn Type	pm+pt	NA	NA	Perm	pm+pt	Perm
Protected Phases	5	2	6		7	
Permitted Phases	2			6	4	4
Actuated Green, G (s)	33.4	33.4	24.9	24.9	8.9	8.9
Effective Green, g (s)	33.4	33.4	24.9	24.9	8.9	8.9
Actuated g/C Ratio	0.62	0.62	0.46	0.46	0.16	0.16
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	458	954	711	646	255	228
v/s Ratio Prot	0.00	c0.19	c0.24		c0.09	
v/s Ratio Perm	0.05			0.05		0.00
v/c Ratio	0.10	0.32	0.52	0.11	0.56	0.02
Uniform Delay, d1	4.7	5.0	10.4	8.4	20.9	19.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.6	0.1	2.6	0.0
Delay (s)	4.8	5.2	11.1	8.4	23.5	19.1
Level of Service	A	A	B	A	C	B
Approach Delay (s)		5.1	10.3		22.7	
Approach LOS		A	B		C	
Intersection Summary						
HCM 2000 Control Delay			10.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			54.3		Sum of lost time (s)	18.0
Intersection Capacity Utilization			46.5%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						







Intersection: 4: OR138W & Dakota St

Movement	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	R	L	R
Maximum Queue (ft)	36	184	192	22	108	55
Average Queue (ft)	11	71	88	1	46	20
95th Queue (ft)	36	135	162	14	88	45
Link Distance (ft)					473	473
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Dakota T-Intersection Existing Stop Controlled







4: OR138W & Dakota St

01/04/2023

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	268	328	111	104	30
Future Vol, veh/h	14	268	328	111	104	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	0	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	15	282	345	117	109	32
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	345	0	-	0	657	345
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	312	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1203	-	-	0	427	693
Stage 1	-	-	-	0	713	-
Stage 2	-	-	-	0	738	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1203	-	-	-	422	693
Mov Cap-2 Maneuver	-	-	-	-	422	-
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	738	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		15.1		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2	
Capacity (veh/h)	1203	-	-	422	693	
HCM Lane V/C Ratio	0.012	-	-	0.259	0.046	
HCM Control Delay (s)	8	-	-	16.5	10.4	
HCM Lane LOS	A	-	-	C	B	
HCM 95th %tile Q(veh)	0	-	-	1	0.1	

Dakota St Existing Stop Control
4: OR138W & Dakota St

Capacity
10/06/2022







Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	251	307	104	97	29
Future Vol, veh/h	13	251	307	104	97	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	0	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	14	264	323	109	102	31
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	323	0	-	0	615	323
Stage 1	-	-	-	-	323	-
Stage 2	-	-	-	-	292	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1226	-	-	0	451	713
Stage 1	-	-	-	0	729	-
Stage 2	-	-	-	0	753	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1226	-	-	-	446	713
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	753	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		14.3		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2	
Capacity (veh/h)	1226	-	-	446	713	
HCM Lane V/C Ratio	0.011	-	-	0.229	0.043	
HCM Control Delay (s)	8	-	-	15.5	10.3	
HCM Lane LOS	A	-	-	C	B	
HCM 95th %tile Q(veh)	0	-	-	0.9	0.1	

Intersection: 4: OR138W & Dakota St

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	34	67	44
Average Queue (ft)	3	30	17
95th Queue (ft)	18	55	42
Link Distance (ft)		473	473
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Stop Control Capacity and LOS - 2027 Volumes 4: OR138W & Dakota St

01/11/2023







Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	287	351	119	111	32
Future Vol, veh/h	15	287	351	119	111	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	0	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	9	9	2	3	3
Mvmt Flow	16	302	369	125	117	34
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	369	0	-	0	703	369
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	334	-
Critical Hdwy	4.12	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.218	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1190	-	-	0	402	674
Stage 1	-	-	-	0	697	-
Stage 2	-	-	-	0	723	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1190	-	-	-	397	674
Mov Cap-2 Maneuver	-	-	-	-	397	-
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	723	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		16.2		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2	
Capacity (veh/h)	1190	-	-	397	674	
HCM Lane V/C Ratio	0.013	-	-	0.294	0.05	
HCM Control Delay (s)	8.1	-	-	17.8	10.6	
HCM Lane LOS	A	-	-	C	B	
HCM 95th %tile Q(veh)	0	-	-	1.2	0.2	

Intersection: 4: OR138W & Dakota St

Movement	EB	WB	SB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	31	22	78	44
Average Queue (ft)	4	1	35	18
95th Queue (ft)	22	11	64	42
Link Distance (ft)			473	473
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

T-Intersection Stop Controlled with Trips Capacity and LOS - 2027 Volumes - 4: OR138W & Dakota St

01/12/2023

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	287	351	142	135	32
Future Vol, veh/h	42	287	351	142	135	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	0	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	9	9	2	3	3
Mvmt Flow	44	302	369	149	142	34
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	369	0	-	0	759	369
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	390	-
Critical Hdwy	4.12	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.218	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1190	-	-	0	373	674
Stage 1	-	-	-	0	697	-
Stage 2	-	-	-	0	682	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1190	-	-	-	359	674
Mov Cap-2 Maneuver	-	-	-	-	359	-
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	682	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		19.3		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2	
Capacity (veh/h)	1190	-	-	359	674	
HCM Lane V/C Ratio	0.037	-	-	0.396	0.05	
HCM Control Delay (s)	8.1	-	-	21.4	10.6	
HCM Lane LOS	A	-	-	C	B	
HCM 95th %tile Q(veh)	0.1	-	-	1.8	0.2	







Intersection: 4: OR138W & Dakota St

Movement	EB	WB	SB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	36	22	110	44
Average Queue (ft)	10	2	42	18
95th Queue (ft)	35	16	82	41
Link Distance (ft)			473	473
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

T-Intersection Stop Control Capacity - 2042 Volumes

4: OR138W & Dakota St

01/12/2023

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	345	422	143	134	39
Future Vol, veh/h	18	345	422	143	134	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	0	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	9	9	2	3	3
Mvmt Flow	19	363	444	151	141	41
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	444	0	-	0	845	444
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	401	-
Critical Hdwy	4.12	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.218	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1116	-	-	0	332	612
Stage 1	-	-	-	0	644	-
Stage 2	-	-	-	0	674	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1116	-	-	-	326	612
Mov Cap-2 Maneuver	-	-	-	-	326	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	674	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		21.3		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2	
Capacity (veh/h)	1116	-	-	326	612	
HCM Lane V/C Ratio	0.017	-	-	0.433	0.067	
HCM Control Delay (s)	8.3	-	-	24.2	11.3	
HCM Lane LOS	A	-	-	C	B	
HCM 95th %tile Q(veh)	0.1	-	-	2.1	0.2	























Intersection: 4: OR138W & Dakota St

Movement	EB	WB	SB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	31	11	119	51
Average Queue (ft)	5	0	49	23
95th Queue (ft)	24	8	90	44
Link Distance (ft)			475	475
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

4-Way Signal for 2022 Volumes with Trips and Exit 136 - Capacity and LOS

4: OR138W & Dakota St

01/30/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	268	6	68	328	133	6	11	36	130	11	30
Future Volume (vph)	24	268	6	68	328	133	6	11	36	130	11	30
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1576	1547		1474	1552	1410		1527	1319	1560	1440	
Flt Permitted	0.32	1.00		0.58	1.00	1.00		1.00	1.00	0.82	1.00	
Satd. Flow (perm)	537	1547		903	1552	1410		1552	1319	1341	1440	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	26	285	6	72	349	141	6	12	38	138	12	32
RTOR Reduction (vph)	0	1	0	0	0	80	0	0	33	0	24	0
Lane Group Flow (vph)	26	290	0	72	349	61	0	18	5	138	20	0
Heavy Vehicles (%)	2%	9%	9%	9%	9%	2%	9%	9%	9%	3%	9%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)	16.7	16.7		19.4	19.4	19.4		0.9	5.5	11.5	11.5	
Effective Green, g (s)	16.7	16.7		19.4	19.4	19.4		0.9	5.5	11.5	11.5	
Actuated g/C Ratio	0.37	0.37		0.43	0.43	0.43		0.02	0.12	0.26	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
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)	244	576		449	672	610		31	161	376	369	
v/s Ratio Prot	0.00	c0.19		0.02	c0.22				0.00	c0.05	0.01	
v/s Ratio Perm	0.04			0.05		0.04		0.01	0.00	c0.04		
v/c Ratio	0.11	0.50		0.16	0.52	0.10		0.58	0.03	0.37	0.05	
Uniform Delay, d1	9.4	10.9		7.8	9.3	7.5		21.8	17.3	13.6	12.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.7		0.2	0.7	0.1		24.7	0.1	0.6	0.1	
Delay (s)	9.6	11.5		8.0	10.0	7.6		46.5	17.4	14.2	12.6	
Level of Service	A	B		A	A	A		D	B	B	B	
Approach Delay (s)		11.4			9.1			26.7			13.8	
Approach LOS		B			A			C			B	
Intersection Summary												
HCM 2000 Control Delay		11.4			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.56										
Actuated Cycle Length (s)		44.8			Sum of lost time (s)			16.0				
Intersection Capacity Utilization		46.6%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

2022 Trips and Exit 136 - Queue Length
4-way Signalized Intersection

01/30/2023























Intersection: 4: OR138W & Dakota St

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	LT	R	L	TR
Maximum Queue (ft)	58	165	80	149	18	60	70	104	50
Average Queue (ft)	15	76	29	55	1	15	23	41	20
95th Queue (ft)	47	135	65	117	10	45	56	83	46
Link Distance (ft)						381	381	473	473
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

4-Way Signal for 2027 Volumes with Trips and Exit 136 - Capacity and LOS

4: OR138W & Dakota St

01/30/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	287	6	73	351	143	6	12	39	139	12	32
Future Volume (vph)	26	287	6	73	351	143	6	12	39	139	12	32
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1576	1547		1474	1552	1410		1528	1319	1560	1441	
Flt Permitted	0.34	1.00		0.57	1.00	1.00		1.00	1.00	0.80	1.00	
Satd. Flow (perm)	563	1547		887	1552	1410		1552	1319	1314	1441	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	28	305	6	78	373	152	6	13	41	148	13	34
RTOR Reduction (vph)	0	1	0	0	0	76	0	0	34	0	26	0
Lane Group Flow (vph)	28	310	0	78	373	76	0	19	7	148	21	0
Heavy Vehicles (%)	2%	9%	9%	9%	9%	2%	9%	9%	9%	3%	9%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)	20.5	20.5		25.8	25.8	25.8		1.0	8.5	11.8	11.8	
Effective Green, g (s)	20.5	20.5		25.8	25.8	25.8		1.0	8.5	11.8	11.8	
Actuated g/C Ratio	0.40	0.40		0.50	0.50	0.50		0.02	0.16	0.23	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
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)	265	612		526	773	702		29	216	331	328	
v/s Ratio Prot	0.00	c0.20		0.02	c0.24				0.00	c0.06	0.01	
v/s Ratio Perm	0.04			0.05		0.05		0.01	0.00	c0.04		
v/c Ratio	0.11	0.51		0.15	0.48	0.11		0.66	0.03	0.45	0.06	
Uniform Delay, d1	10.1	11.8		7.2	8.6	6.9		25.2	18.2	17.1	15.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.7		0.1	0.5	0.1		42.6	0.1	1.0	0.1	
Delay (s)	10.3	12.5		7.3	9.1	7.0		67.8	18.2	18.0	15.8	
Level of Service	B	B		A	A	A		E	B	B	B	
Approach Delay (s)		12.3			8.3			33.9			17.5	
Approach LOS		B			A			C			B	
Intersection Summary												
HCM 2000 Control Delay			12.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			51.8			Sum of lost time (s)				16.0		
Intersection Capacity Utilization			48.4%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

2027 Trips and Exit 136 - Queue Length 4-way Signalized Intersection

01/30/2023























Intersection: 4: OR138W & Dakota St

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	LT	R	L	TR
Maximum Queue (ft)	29	188	76	153	39	54	66	108	61
Average Queue (ft)	12	64	25	58	1	13	25	40	23
95th Queue (ft)	35	137	56	122	14	41	56	76	52
Link Distance (ft)						381	381	473	473
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

4-Way Signal for 2042 Volumes with Trips and Exit 136 - Capacity and LOS

4: OR138W & Dakota St

01/30/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	345	8	94	422	184	6	15	50	179	15	39
Future Volume (vph)	33	345	8	94	422	184	6	15	50	179	15	39
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1576	1547		1474	1552	1410		1531	1319	1560	1442	
Flt Permitted	0.22	1.00		0.54	1.00	1.00		1.00	1.00	0.48	1.00	
Satd. Flow (perm)	372	1547		839	1552	1410		1552	1319	782	1442	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	363	8	99	444	194	6	16	53	188	16	41
RTOR Reduction (vph)	0	1	0	0	0	106	0	0	44	0	31	0
Lane Group Flow (vph)	35	370	0	99	444	88	0	22	9	188	26	0
Heavy Vehicles (%)	2%	9%	9%	9%	9%	2%	9%	9%	9%	3%	9%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases	2			6		6	8		8		4	
Actuated Green, G (s)	23.5	23.5		30.5	30.5	30.5		2.4	11.2	17.1	17.1	
Effective Green, g (s)	23.5	23.5		30.5	30.5	30.5		2.4	11.2	17.1	17.1	
Actuated g/C Ratio	0.35	0.35		0.45	0.45	0.45		0.04	0.17	0.25	0.25	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0	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	
Lane Grp Cap (vph)	161	539		462	702	638		55	219	298	365	
v/s Ratio Prot	0.01	c0.24		0.03	c0.29				0.01	c0.08	0.02	
v/s Ratio Perm	0.07			0.07		0.06		0.01	0.00	c0.08		
v/c Ratio	0.22	0.69		0.21	0.63	0.14		0.40	0.04	0.63	0.07	
Uniform Delay, d1	15.8	18.8		11.5	14.2	10.8		31.8	23.6	21.5	19.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	3.6		0.2	1.9	0.1		4.7	0.1	4.3	0.1	
Delay (s)	16.4	22.4		11.7	16.0	10.9		36.5	23.7	25.8	19.2	
Level of Service	B	C		B	B	B		D	C	C	B	
Approach Delay (s)		21.9			14.1			27.4			24.3	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			18.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			67.4			Sum of lost time (s)			24.0			
Intersection Capacity Utilization			59.9%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

2042 Trips and Exit 136 - Queue Length
4-way Signalized Intersection









01/30/2023

Intersection: 4: OR138W & Dakota St

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	LT	R	L	TR
Maximum Queue (ft)	47	282	102	185	50	84	74	172	64
Average Queue (ft)	20	107	42	109	4	18	30	71	24
95th Queue (ft)	47	198	83	181	25	56	63	136	55
Link Distance (ft)						381	381	473	473
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

4-Way Stop Control for 2022 with Trips and Exit 136 - Capacity and LOS
4: OR138W & Dakota St

01/26/2023

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	268	6	68	328	133	6	11	36	130	11	30
Future Vol, veh/h	24	268	6	68	328	133	6	11	36	130	11	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	0	-	-	0	-	-
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, %	2	9	9	9	9	2	9	9	9	3	9	3
Mvmt Flow	25	282	6	72	345	140	6	12	38	137	12	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	345	0	0	288	0	0	846	824	285	849	827	345
Stage 1	-	-	-	-	-	-	335	335	-	489	489	-
Stage 2	-	-	-	-	-	-	511	489	-	360	338	-
Critical Hdwy	4.12	-	-	4.19	-	-	7.19	6.59	6.29	7.13	6.59	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.13	5.59	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.13	5.59	-
Follow-up Hdwy	2.218	-	-	2.281	-	-	3.581	4.081	3.381	3.527	4.081	3.327
Pot Cap-1 Maneuver	1214	-	-	1235	-	0	274	300	738	280	299	696
Stage 1	-	-	-	-	-	0	664	630	-	559	538	-
Stage 2	-	-	-	-	-	0	533	538	-	656	628	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1214	-	-	1235	-	-	236	273	738	239	272	696
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	273	-	239	272	-
Stage 1	-	-	-	-	-	-	650	617	-	547	499	-
Stage 2	-	-	-	-	-	-	461	499	-	598	615	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	1.4	13.4	32.4
HCM LOS			B	D









Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	236	528	1214	-	-	1235	-	239	491
HCM Lane V/C Ratio	0.027	0.094	0.021	-	-	0.058	-	0.573	0.088
HCM Control Delay (s)	20.7	12.5	8	-	-	8.1	0	38.5	13
HCM Lane LOS	C	B	A	-	-	A	A	E	B
HCM 95th %tile Q(veh)	0.1	0.3	0.1	-	-	0.2	-	3.2	0.3

Intersection: 4: OR138W & Dakota St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	LT	R	L	TR	L	TR
Maximum Queue (ft)	29	4	119	34	38	72	120	60
Average Queue (ft)	5	0	27	1	5	27	48	25
95th Queue (ft)	24	3	81	14	24	58	91	49
Link Distance (ft)					334	334	463	463
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

4-Way Stop Control at 2027 with Trips and Exit 136 - Capacity and LOS
4: OR138W & Dakota St

01/12/2023

Intersection												
Int Delay, s/veh	9.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	287	6	73	351	143	6	12	39	139	12	32
Future Vol, veh/h	26	287	6	73	351	143	6	12	39	139	12	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	0	-	-	0	-	-
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, %	2	9	9	9	9	2	9	9	9	3	9	3
Mvmt Flow	27	302	6	77	369	151	6	13	41	146	13	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	369	0	0	308	0	0	906	882	305	909	885	369
Stage 1	-	-	-	-	-	-	359	359	-	523	523	-
Stage 2	-	-	-	-	-	-	547	523	-	386	362	-
Critical Hdwy	4.12	-	-	4.19	-	-	7.19	6.59	6.29	7.13	6.59	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.13	5.59	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.13	5.59	-
Follow-up Hdwy	2.218	-	-	2.281	-	-	3.581	4.081	3.381	3.527	4.081	3.327
Pot Cap-1 Maneuver	1190	-	-	1214	-	0	250	278	719	255	277	674
Stage 1	-	-	-	-	-	0	645	615	-	535	519	-
Stage 2	-	-	-	-	-	0	509	519	-	635	613	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1190	-	-	1214	-	-	211	250	719	213	249	674
Mov Cap-2 Maneuver	-	-	-	-	-	-	211	250	-	213	249	-
Stage 1	-	-	-	-	-	-	630	601	-	523	477	-
Stage 2	-	-	-	-	-	-	433	477	-	573	599	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			1.4			14.1			43.1		
HCM LOS							B			E		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	211	499	1190	-	-	1214	-	213	460
HCM Lane V/C Ratio	0.03	0.108	0.023	-	-	0.063	-	0.687	0.101
HCM Control Delay (s)	22.6	13.1	8.1	-	-	8.2	0	52.4	13.7
HCM Lane LOS	C	B	A	-	-	A	A	F	B
HCM 95th %tile Q(veh)	0.1	0.4	0.1	-	-	0.2	-	4.3	0.3









Intersection: 4: OR138W & Dakota St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	LT	R	L	TR	L	TR
Maximum Queue (ft)	29	11	123	22	44	78	129	64
Average Queue (ft)	7	0	35	1	5	30	55	26
95th Queue (ft)	27	6	95	11	24	65	104	54
Link Distance (ft)					334	334	463	463
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

4-Way Stop Control with Trips plus Exit 136 and 2042 Volumes - Capacity and LOS

4: OR138W & Dakota St

01/12/2023

Intersection												
Int Delay, s/veh	39.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	345	8	94	422	184	6	15	50	179	15	39
Future Vol, veh/h	33	345	8	94	422	184	6	15	50	179	15	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	0	-	-	0	-	-
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, %	2	9	9	9	9	2	9	9	9	3	9	3
Mvmt Flow	35	363	8	99	444	194	6	16	53	188	16	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	444	0	0	371	0	0	1108	1079	367	1114	1083	444
Stage 1	-	-	-	-	-	-	437	437	-	642	642	-
Stage 2	-	-	-	-	-	-	671	642	-	472	441	-
Critical Hdwy	4.12	-	-	4.19	-	-	7.19	6.59	6.29	7.13	6.59	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.13	5.59	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.13	5.59	-
Follow-up Hdwy	2.218	-	-	2.281	-	-	3.581	4.081	3.381	3.527	4.081	3.327
Pot Cap-1 Maneuver	1116	-	-	1150	-	0	181	212	663	~ 185	211	612
Stage 1	-	-	-	-	-	0	585	568	-	461	458	-
Stage 2	-	-	-	-	-	0	435	458	-	571	565	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1116	-	-	1150	-	-	141	182	663	~ 142	181	612
Mov Cap-2 Maneuver	-	-	-	-	-	-	141	182	-	~ 142	181	-
Stage 1	-	-	-	-	-	-	567	550	-	447	406	-
Stage 2	-	-	-	-	-	-	346	406	-	495	547	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			1.5			16.9			193.8		
HCM LOS							C			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	141	412	1116	-	-	1150	-	142	368
HCM Lane V/C Ratio	0.045	0.166	0.031	-	-	0.086	-	1.327	0.154
HCM Control Delay (s)	31.7	15.5	8.3	-	-	8.4	0	247.3	16.6
HCM Lane LOS	D	C	A	-	-	A	A	F	C
HCM 95th %tile Q(veh)	0.1	0.6	0.1	-	-	0.3	-	11.8	0.5

Notes												
~: Volume exceeds capacity			\$: Delay exceeds 300s			+: Computation Not Defined			*: All major volume in platoon			

Intersection: 4: OR138W & Dakota St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	LT	R	L	TR	L	TR
Maximum Queue (ft)	42	9	172	71	47	91	336	79
Average Queue (ft)	11	0	53	4	7	38	141	31
95th Queue (ft)	37	5	131	31	30	71	292	65
Link Distance (ft)					334	334	463	463
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

MOVEMENT SUMMARY

OR-138W at Dakota St (Medical Facility and Exit 136)

Roundabout Yr 2027
Site Category: Future Conditions 1
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [Total HV] veh/h %		DEMAND FLOWS [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist] veh ft		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Dakota St														
3	L2	6	1.0	8	1.0	0.127	8.4	LOS A	0.4	10.7	0.58	0.58	0.58	35.1
8	T1	12	1.0	17	1.0	0.127	8.4	LOS A	0.4	10.7	0.58	0.58	0.58	34.5
18	R2	39	1.0	43	1.0	0.127	8.4	LOS A	0.4	10.7	0.58	0.58	0.58	33.1
Approach		57	1.0	68	1.0	0.127	8.4	LOS A	0.4	10.7	0.58	0.58	0.58	33.7
East: OR-138W														
1	L2	73	1.0	107	1.0	0.652	12.4	LOS B	5.6	145.3	0.35	0.17	0.35	33.0
6	T1	351	8.6	418	8.6	0.652	12.7	LOS B	5.6	145.3	0.35	0.17	0.35	32.4
16	R2	143	2.5	213	2.5	0.652	12.4	LOS B	5.6	145.3	0.35	0.17	0.35	31.4
Approach		567	6.1	739	5.7	0.652	12.5	LOS B	5.6	145.3	0.35	0.17	0.35	32.2
North: Dakota St														
7	L2	139	2.7	331	2.7	0.639	18.6	LOS C	5.2	131.6	0.75	0.97	1.40	28.7
4	T1	12	1.0	16	1.0	0.639	18.5	LOS C	5.2	131.6	0.75	0.97	1.40	28.3
14	R2	32	2.9	51	2.9	0.639	18.6	LOS C	5.2	131.6	0.75	0.97	1.40	27.4
Approach		183	2.6	398	2.6	0.639	18.6	LOS C	5.2	131.6	0.75	0.97	1.40	28.5
West: OR-138W														
5	L2	26	2.5	31	2.5	0.572	15.1	LOS C	4.1	108.8	0.67	0.84	1.13	32.0
2	T1	287	8.8	338	8.8	0.572	15.4	LOS C	4.1	108.8	0.67	0.84	1.13	31.5
12	R2	6	1.0	7	1.0	0.572	15.0	LOS C	4.1	108.8	0.67	0.84	1.13	30.4
Approach		319	8.1	376	8.1	0.572	15.4	LOS C	4.1	108.8	0.67	0.84	1.13	31.5
All Vehicles		1126	5.8	1580	5.3	0.652	14.6	LOS B	5.6	145.3	0.53	0.55	0.81	31.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

SITE LAYOUT

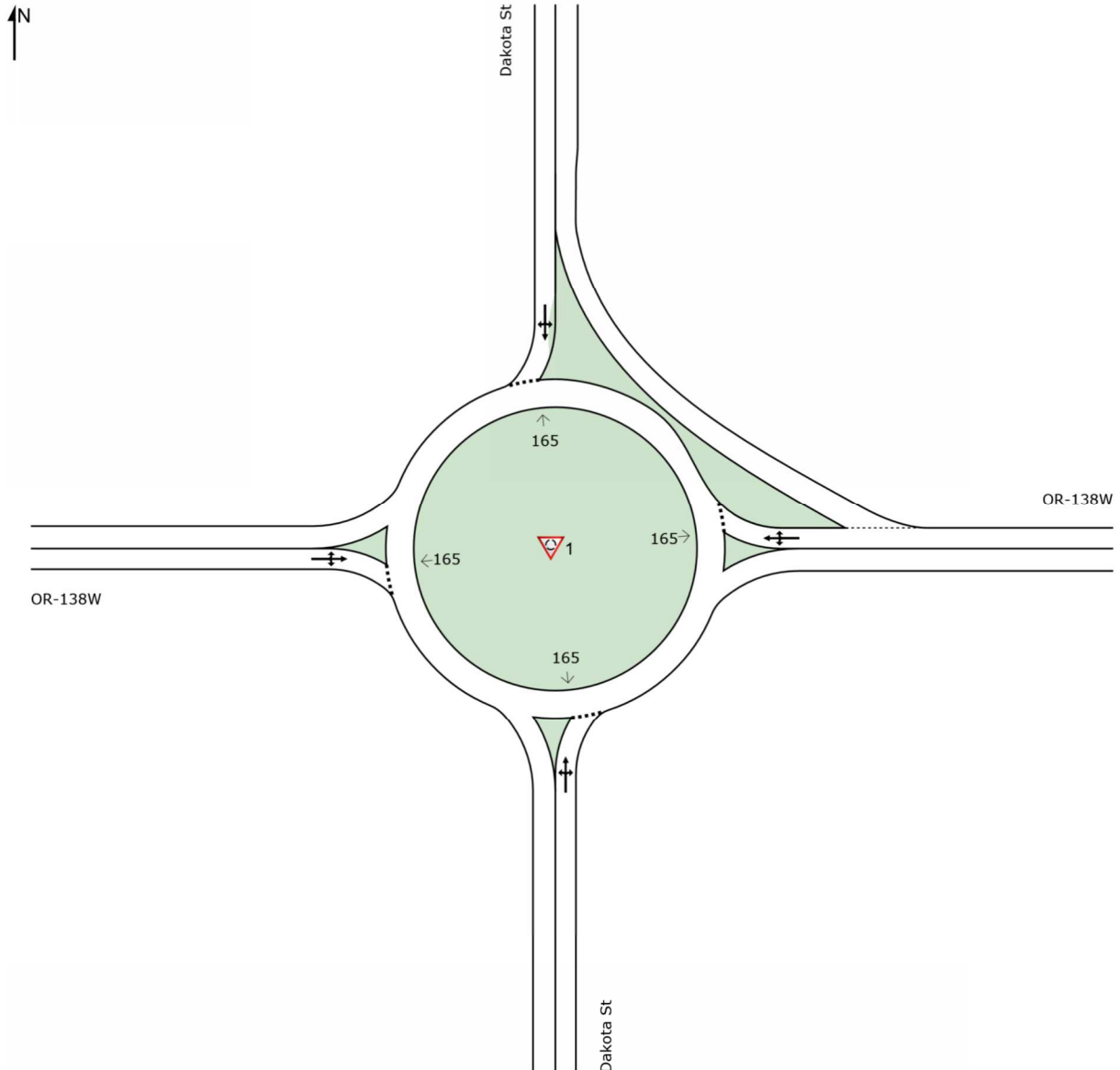
Site: 1 [OR-138W at Dakota St (Site Folder: General)]

Roundabout Yr 2027

Site Category: Future Conditions 1

Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: F:\ODOT_DATA\Projects\Studies\Dakota Signal TIA\Hwy231_DakotaSt_Sutherlin\Sidra\4-Way Intersection\Future-20yr 4-way intersection with WB - rt turn slip lane.sip9

VOLUME TO CAPACITY RATIO TARGETS OUTSIDE METRO ^{17A, B, C, D}							
Highway Category	Inside Urban Growth Boundary					Outside Urban Growth Boundary	
	STA ^E	MPO	Non-MPO Outside of STAs where non-freeway posted speed ≤ 35 mph, or a Designated UBA	Non-MPO outside of STAs where non-freeway speed > 35 mph but < 45 mph	Non-MPO where non-freeway speed limit ≥ 45 mph	Unincorporated Communities ^F	Rural Lands
Interstate Highways	N/A	0.85	N/A	N/A	0.80	0.70	0.70
Statewide Expressways	N/A	0.85	0.85	0.80	0.80	0.70	0.70
Freight Route on a Statewide Highway	0.90	0.85	0.85	0.80	0.80	0.70	0.70
Statewide (not a Freight Route)	0.95	0.90	0.90	0.85	0.80	0.75	0.70
Freight Route on a regional or District Highway	0.95	0.90	0.90	0.85	0.85	0.75	0.70
Expressway on a Regional or District Highway	N/A	0.90	N/A	0.85	0.85	0.75	0.70
Regional Highways	1.0	0.95	0.90	0.85	0.85	0.75	0.70
District/Local Interest Roads	1.0	0.95	0.95	0.90	0.90	0.80	0.75

Table 6: Volume to Capacity Ratio Targets for Peak Hour Operating Conditions

TECHNICAL MEMORANDUM

January 26, 2024

Project# 27380

To: Kristi Gilbert, Community Development Director
City of Sutherlin

From: Wade Scarbrough, PE; and Wayne Kittelson, PE

CC: Chris Hunter, ODOT Region 3 Southwest Area Manager

RE: OR 138W at Dakota Street Intersection Control Evaluation

ODOT ICE Report Peer Review

On behalf of Sutherlin Land, LLC (a collaboration of local property owners and business owners), Kittelson & Associates (Kittelson) reviewed the Intersection Control Evaluation (ICE) prepared by ODOT for the intersection of OR 138W at Dakota Street. The original ICE Report was signed on December 18, 2023, with an addendum attached and signed on December 27, 2023.

This technical memorandum summarizes a number of observations and comments for the City's consideration.

Existing Conditions Observations

- The analysis of existing conditions indicates the intersection is currently operating at LOS "C" for the critical southbound approach. According to the results shown in Table 7, the intersection will continue to operate at LOS "C" through the year 2027 with the addition of trips from planned projects.
- The safety analysis indicates there have been 5 crashes over the past 5 years. Although there were two Injury-B crashes, there were no fatal or serious injury crashes, and the intersection is not identified as a top 15% SPIS location.
- It should be noted that, of the 5 reported crashes, 2 occurred in 2017; 1 occurred in 2018; 0 occurred in 2019; 1 occurred in 2020; and 1 occurred in 2021 - indicating that there's not a worrisome trendline in crash frequency.
- ODOT has now published crash data for 2022, indicating that one property damage only (PDO) crash occurred during that year. Thus, the number of crashes over the most recent available 5-year period (2018 through 2022) has reduced to 4.
- Based on the operational and safety analysis, there does not appear to be an urgent need for immediate modifications at the intersection.

Performance Analysis

- It is unclear how ODOT calculated the roundabout performance measures that are reported in Table 9. The appendix includes a roundabout worksheet for 2027 traffic volumes, but we don't see the analysis worksheet for the 2042 volumes. The 2027 roundabout worksheet shows the analysis was

performed using the HCM 2010 method; however, ODOT's Analysis Procedures Manual recommends using the current HCM 7th Edition.

- According to Table 9, ODOT calculated a critical V/C ratio of 0.92 for the southbound approach at the roundabout in 2042. We ran an independent analysis of a single lane roundabout using the HCM 7th Edition and the same 2042 traffic volumes that were used in the signalized alternative analysis. The results show the westbound approach is the most critical approach with a V/C ratio of 0.61 and approach LOS of "B." The V/C of the southbound approach is 0.34, and the overall intersection level of service is "A." See attached worksheet.
- Based on our analysis, a single-lane roundabout will operate well within the City's and ODOT's performance targets through the 2042 design year and beyond.
- There is no need for a separate right-turn bypass lane on the westbound approach (as shown in Figure 8). We would recommend removing it from the design concept. As a result, the estimated construction cost and right-of-way impacts associated with the roundabout alternative would be less than those assumed in the ICE.
- Based on our analysis, the roundabout alternative could allow the OR 138 corridor to be built out with a three-lane cross section. Alternatively, the signalized alternative shown in Figure 7 indicates that Central Avenue will be widened to a five-lane cross section.

Cost Estimates

- The original ICE Report indicated construction cost estimates of \$3M for the single-lane roundabout and \$1.6M for the signal (Table 6). The ICE Addendum provided updated 2023 cost estimates, indicating \$5M for the single-lane roundabout and \$1.6M for the signal. It's unclear how these costs were developed and what assumptions are made with respect to roadway improvements on each approach.
- The analysis results and cost estimate shown in the ICE are based on a 3-lane signalized alternative, while Figure 7 indicates an ultimate 5-lane cross-section. As such, the ICE may not reflect the full cost of the ultimate signalized alternative.
- We recommend conducting a life-cycle cost analysis – including initial construction costs, ongoing operating/maintenance costs, and performance costs (associated with users' time, fuel, and crashes) – to provide a more complete comparison of alternatives. NCHRP Web-Only Document 220 provides guidance and a spreadsheet tool for conducting this analysis.

Safety Analysis

- The SPICE results summarized in Table 4 show the roundabout is expected to have less than 2 total crashes and less than 1 fatal injury crash over the project life cycle. Alternatively, the signal is expected to have more than 9 total crashes including nearly 3 fatal/injury crashes. *(Note: the report doesn't specify the assumed duration of the "life cycle" nor the "design year", and so we assume this to be 2042).*
- The alternative comparison summary in Table 6 indicates that the signal would have a better crash reduction than the roundabout. This appears to be an error.
- Table 6 indicates that a roundabout will reduce crashes by 2 with CRF, whereas a signal will reduce crashes by 3 with CRF. According to Exhibit 7.15 of the latest roundabout design guide (NCHRP

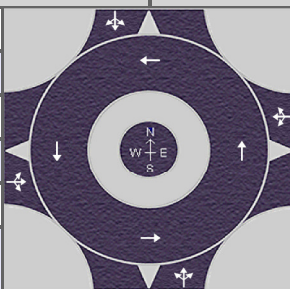
Report 1043 Guide for Roundabouts, 2023), TWSC conversion to a single-lane roundabout in a suburban setting should be expected to result in a crash modification factor (CMF) of 0.22, meaning that the 5-year crashes could be expected to reduce from 4 to less than 1 and the crash rate could be expected to drop from 0.220 per million entering vehicles (0.220/MEV) to 0.048/MEV.

Other Considerations

- Table 6 indicates the roundabout would have greater impacts on cultural and natural resources than the signalized alternative. While the roundabout may have a larger footprint at the intersection, it would have a lesser impact on the roadway approaches than the ultimate (5-lane) signalized alternative. In addition, the roundabout will likely have lower fuel consumption and emissions in comparison to other alternatives.
- Table 6 indicates that roundabouts are unfavorable for bicyclists. However, the most recent roundabout design guide (*NCHRP 1043 Guide for Roundabouts, 2023*) reports that roundabouts provide bicycle users with reduced conflict points, higher visibility to the bicyclists, and reduced speed differentials between bikes and vehicles. Opportunities to exit the roadway and use a separated shared path are also available for non-bicycle users.
- Table 6 indicates that the roundabout would be resisted by the local community. However, our meetings with local property owners and business owners have revealed that there are many members of the community who would prefer to see a roundabout installed rather than a signal.
- On page 14, the report cites the *FHWA Roundabout Guide 2000 Edition*, and states that “roundabouts may not provide safety benefits for bicycles.” This statement is based on the 1st edition of the FHWA guide. The current edition is the 3rd edition (*NCHRP Report 1043: Guide for Roundabouts, 2023*). The guidelines have been updated and expanded significantly regarding bicycle design treatments. By following the current guidelines, the roundabout can be designed to serve the full range of people riding bicycles safely and comfortably. The public information officer for ODOT’s Central Region confirms this finding, saying in October 2023 that roundabouts “are so much safer than normal intersections – not only for vehicles, but for pedestrians and cyclists as well.”
- In addition to safety benefits, there are several other benefits of the roundabout that were not discussed, including:
 - The roundabout would achieve lower speeds on the highway as the speed zone changes from 40 mph to 30 mph immediately west of this intersection.
 - The roundabout could avoid the need to widen this section of highway to 5 lanes. With a 3-lane cross section instead of a 5-lane cross section, there would be additional space available in the right-of-way that could potentially be used for separated pedestrian and bicycle paths and/or landscape features.
 - The roundabout could provide an attractive gateway feature for drivers entering the city limits.

We hope these insights and observations are helpful for the City’s consideration. We look forward to discussing the intersection alternatives further at our upcoming work session on February 12. In the meantime, please feel free to contact us if you have any questions or ideas to discuss.

HCS7 Roundabouts Report

General Information			Site Information		
Analyst	WES		Intersection	OR-138 at Dakota St	
Agency or Co.	Kittelson & Associates		E/W Street Name	OR-138	
Date Performed	1/3/2024		N/S Street Name	Dakota St	
Analysis Year	2042		Analysis Time Period (hrs)	0.25	
Time Analyzed	2042 Design Hour		Peak Hour Factor	0.95	
Project Description			Jurisdiction	Sutherlin, OR	

Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	33	345	8	0	94	422	184	0	6	15	50	0	179	15	39
Percent Heavy Vehicles, %	2	2	9	9	9	9	9	2	9	9	9	9	3	3	9	3
Flow Rate (V _{PCE}), pc/h	0	35	396	9	0	108	484	198	0	7	17	57	0	194	17	42
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		440			790			81			253		
Entry Volume, veh/h		406			737			74			245		
Circulating Flow (v _c), pc/h	319			59			625			599			
Exiting Flow (v _{ex}), pc/h	647			533			250			134			
Capacity (C _{pce}), pc/h		997			1299			729			749		
Capacity (c), veh/h		919			1213			669			725		
v/c Ratio (x)		0.44			0.61			0.11			0.34		

Delay and Level of Service												
Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		9.2			10.5			6.6			9.2	
Lane LOS		A			B			A			A	
95% Queue, veh		2.3			4.3			0.4			1.5	
Approach Delay, s/veh	9.2			10.5			6.6			9.2		
Approach LOS	A			B			A			A		
Intersection Delay, s/veh LOS	9.7						A					



Oregon

Tina Kotek, Governor

Department of Transportation
Region 3 Planning & Programming
3500 NW Stewart Parkway
Roseburg, OR 97470
Phone: (541) 957-3500
Fax: (541) 672-6148

February 2, 2024

Jerry Gillham, City Manager
City of Sutherlin
126 E. Central Avenue
Sutherlin, OR 97479

Re: Sutherlin Interchange Design Study – Sutherlin LLC

Dear Jerry,

Our department received a copy of a technical memorandum from Kittelson & Associates addressed to Sutherlin LLC, proposing a new configuration for the interchange at Exit 136. As you know, Sutherlin LLC is composed of a group of landowners in the SW quadrant of the interchange. It appears that the memo was also sent to the City of Sutherlin. We have reviewed it and offer the following summary comments to the city.

History:

ODOT, in coordination with the City of Sutherlin jointly developed an Interchange Area Management Plan (IAMP) for Exit 136. This involved significant public outreach, coordination with local and regional partners, substantial technical analysis, as well as coordination with the Federal Highway Administration (FHWA). The intent of the plan was to develop a preferred interchange concept along with an access management plan for OR-138W that would provide more certainty for development, and a feasible path forward toward interchange modernization. Multiple designs were considered before selecting one that maximized capacity for future growth and could be built in phases. That plan was adopted by both ODOT and the City of Sutherlin in 2009.

In July of 2023, ODOT first became aware that the Sutherlin LLC hired Kittelson & Associates to propose alternate interchange designs. We have not been involved in this proposal, except as indicated below.

At a meeting on July 11th, single line drawings over aerials were shared with ODOT by Sutherlin LLC and their consultant. ODOT provided comments to the group at this meeting. A focus of their preferred alternative is to keep Parkhill (an ODOT roadway) open at its current location. Amongst other issues, we commented that having Parkhill Lane across from a new interstate ramp would violate Oregon interchange design standards. We also identified a need for them to show whether there are any safety or operational issues that may indicate a need to update the IAMP.

On October 3, 2023, we met with our interchange design engineer and Sutherlin LLC's engineer to discuss Parkhill Lane. We reiterated that the State would not build a new facility that would be substandard if Parkhill Lane was to remain. Local access to the SW quadrant properties appears to be feasible through an extension of Dakota Street southward, and development of a local street network.

On December 18, 2023, ODOT received a technical memo prepared by Kittelson along with traffic data to support their proposal. This memo was also sent to the City of Sutherlin. Below is a summary of our comments on this memo.

Summary of our Review:

1. Proposed ideas that include a direct connection of Park Hill Ln. to the Interstate ramp intersections are at odds with our design and planning guidance. The report doesn't present any information that indicates safety or operational issues with the adopted IAMP that would be better solved by violating our established criteria.
2. Connecting Parkhill to the ramp intersection would, in effect, subordinate the design and operations of the Interstate to a relatively small local road's needs and limit our ability to manage the interchange over time. While connection to a public approach may be unavoidable at a freeway ramp in certain circumstances, the existing development and land uses around Park Hill Lane are not such that an alternate route connecting to Dakota street is infeasible.
3. The current adopted concept for the Sutherlin Interchange allows the phasing of improvements. As highway funding is very limited, the ability to phase improvements over time is both desirable and realistic. The concept provided by Sutherlin LLC requires all improvements to be built at one time. Funding for interchange construction remains uncertain. It is unclear that the Sutherlin LLC preferred concept would resolve this issue.
4. Growth on the west side of I-5 will be negatively impacted by the proposed concept as it provides less capacity to meet the growing needs of Sutherlin.
5. The 2009 IAMP was not an internal process and took nearly two years to complete. The process included lots of community input, in addition to extensive technical and policy analysis to develop the preferred alternative. Without any significant congestion or safety issues around the interchange, ODOT sees no priority to re-open IAMP 136 at an anticipated expense of \$400,000 to re-evaluate options. Even if such an endeavor moved forward, there is no guarantee we would end up with a concept that would violate our engineering standards and receive FHWA approval.

Next Steps:

In reviewing the improvements contained within the adopted IAMP, we anticipate that the improvements may occur in this sequence, depending on funding opportunities and development. Items b, c, d may be interchangeable.

- a. Installation of a signal/roundabout at Dakota Street/OR-138W. A traffic signal is currently approved and has adequate funding. A roundabout has not yet been approved, but likely could. The much higher cost for the roundabout, estimated as much as \$10 million, is not funded and likely could not be constructed for many years. A roundabout could eventually replace the signal and would be dependent on funding and impacts due to the size of the roundabout (single vs dual lane).
- b. Improvements to OR-138W: up to 5-lane width between I-5 and Fort McKay, and 3-lane width between Fort McKay and Church Street. To include sidewalks and buffered bike lanes.
- c. Signalization of Parkhill Lane @ OR-138W (temporary)
- d. Installation of local street network in SW Quadrant of interchange (including connecting Parkhill and Dakota Street through this network).
- e. Construction of new SB on and off diamond ramps.

f. Construction of a loop SB loop on-ramp.

We recognize the access management plan in the IAMP which identifies future driveway locations to OR-138W relies upon development of a local street network. Likely, ODOT will consider adjusting some access locations temporarily to facilitate development that may occur prior to development of an internal street system. Once the street system is implemented, the access plan will be fully implemented.

ODOT agrees with Kittelson that development of a local street network plan in the SW quadrant of the interchange should be a priority. Development of such a plan should establish a common vision and clarity regarding densities and development patterns, as well as establish potential funding mechanisms for implementation of the plan.

We appreciate the desire from Sutherlin LLC to have more certainty regarding transportation improvements at the interchange. As the IAMP was developed with this in mind, we suggest that the next step is formalizing the local street network and the acquisition of rights of way. The city may also want to consider how such a street system will be funded for construction.

We look forward to working with you and your staff to develop transportation improvements that further the growth and direction of the city.

Sincerely,

Michael Baker
Region 3 Planning & Programming Manager

Cc: Darrin Neavoll, Region 3 Manager
Chris Hunter, SW Area Manager
Glen Pederson, District 7 Manager
Dave Warrick, ODOT Interchange Engineer
Aaron Brooks, Region Access Management Engineer
Kristi Swanson, Community Development Manager
Aaron Swan, Public Works Manager



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City of Sutherlin

STAFF REPORT					
Re: Workforce and Low-Income Housing Solutions				Meeting Date:	2/12/24
Purpose:	Action Item <input checked="" type="checkbox"/>	Workshop <input checked="" type="checkbox"/>	Report Only <input type="checkbox"/>	Discussion <input checked="" type="checkbox"/>	Update <input type="checkbox"/>
Submitted By: Jerry Gillham, City Manager				City Manager Review	<input checked="" type="checkbox"/>
Attachments: Public Notice					

WHAT IS BEING ASKED OF COUNCIL?

Consider the future of Sutherlin regarding the need for workforce housing while also researching ways the city could help to encourage/create housing for low income working residents within our community.

EXPLANATION

These dual issues related to housing are connected because there is either a lack of income/pay, lack of available inventory, or possibly both.

So, what if we were to assemble a task force to analyze the situations of both, research possible solutions and present these possible solutions to the city council sometime in the near future?

This would not be unlike the Fire Services Working Group that took several months to analyze, research, and recommend a solution for needed fire response operations.

OPTIONS

Council input in open discussion is very much appreciated.

City of Sutherlin

Housing and Homelessness Task Force

MISSION

Examine our existing housing inventory and in viewing our future, research and create solutions for needed housing, essential for bolstering our economy and improving the quality of life of all our citizens. Consider housing types such as workforce, and moderate-low income; and the environments necessary for each.

Organization: Staff

Team Facilitator:	Pat Lynch	Team Advisor:	Kurt Sorenson
Team Recorder:	Melanie Masterfield	Team Coordinator:	Jerry Gillham
Team Advisor:	Tami Trowbridge	Team Land-use:	Kristi Gilbert

Organization: Policy

Mayor Sumner; Councilor Woods; Councilor Whitaker

Organization: Citizens at Large (Established by Council)

The City of Sutherlin has received interest from several individuals interested in serving on a Council-Appointed, Housing and Homelessness Task Force and will formally authorize the establishment of, and making appointments to, this new task force on 2/12/24.

Please send a letter of interest to: m.masterfield@ci.sutherlin.or.us by end of day 2/6/24 should you wish to be considered.

Suggested Goals

1. Conduct existing inventory
2. Research history and anticipated future housing needs/trends
3. Identify all possible resources to assist in accomplishing our mission
4. Examine potential options
5. Forecast a ten-year outlook showing the impact
7. Advise staff in the ongoing issues of homelessness, to include Hastings Village



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City of Sutherlin

STAFF REPORT					
Re: Hastings Village New Structure				Meeting Date:	2/12/24
Purpose:	Action Item <input checked="" type="checkbox"/>	Workshop <input checked="" type="checkbox"/>	Report Only <input type="checkbox"/>	Discussion <input checked="" type="checkbox"/>	Update <input type="checkbox"/>
Submitted By: Jerry Gillham, City Manager				City Manager Review	<input checked="" type="checkbox"/>
Attachments: Rules, Team Responsibilities, Camp Layout					

WHAT IS BEING ASKED OF COUNCIL?

Recognizing that Umpqua Heart has declined to continue, in partnership with staff, establish the city's new role in managing Hastings Village.

EXPLANATION

What we've done to date:

The city has enjoyed our partnership and volunteer efforts Umpqua Heart committed to keep Hastings Village operational for "mostly-Sutherlin" homeless citizens. As you can see in the attached (1) grant funding request list, the city and Umpqua Heart worked together with the expectation of receiving some monies applied for by the city. We saw these funds as necessary for establishing Hastings Village as a premier example for Sutherlin and for other cities to follow. However, the expectation of a county-wide partnership never occurred because Roseburg received specific funds for a "Roseburg" navigation center while Sutherlin and the other Douglas County cities received nothing. We've been nursing our facility along for over two years, still waiting and hoping for support from another agency, county, state, or federal funding program.

It is important to recognize that Wayne Ellsworth has served and given of his time as the sole volunteer manager of the village through Umpqua Heart. As addressed in the paragraph above, he did this with the expectation that with the fruits of our partnership and his work, coupled with the state-wide positive recognition of our efforts, monies would surely come. And they haven't.

As one of only a few cities in Oregon that from the beginning set aside a site for the specific purposes of keeping campers off our public parks and city streets, we are now currently dumbfounded and dismayed for having followed the 9th Federal Court ruling and yet still have not received any financial support.

However, we can take some solace in knowing that we have expended few city funds with our unhoused in one location compared to the direct and indirect costs incurred by other cities. For example, other cities I have discussed this with express that the street camping circumstance alone consumes up to 75%

of police personnel time on any given shift, notwithstanding the direct costs of cleanup of vacated camping locations and other staff-time demands.

Currently, it remains a very strong possibility that the Merkley/Wyden monies will arrive in May/June of this year, and we would then, as allowed, reimburse ourselves for these expenses, proceed with essential site improvements, seek to contract ongoing management of the site, and institute a system of transitioning those individuals who qualify into independent housing. We would, for example, increase oversight and coordination of services that previously could not be provided without financial resources.

In the meantime, there currently exist two critical issues for consideration: First, we need to introduce new rules of operation conducive to the city's expectations; Secondly, ideally there should be a means of providing oversight day-to-day while carrying out the diversity of responsibilities necessary to keep the village operational. However, it would also be disastrous for our community to close the village down, leaving our public lands then open for nightly camping that ultimately leads to even greater issues than just night camping while incurring even more costs as addressed above.

What we're doing now:

So here we are in February, while Umpqua Heart decided to not renew our agreement for ongoing management. I am therefore, taking on the overall responsibility of managing the village the best way that I can. I have met with, and established Dana Foley as our new Hastings Facility Manager (HFM) and as you can see from the listing and new rules, he plays an integral role in our ongoing success.

Dana has already begun instituting a new system of accountability, while working to resolve issues related to risk, cleanliness, and safety of the individuals living here. Just this week he established a new layout (attached), interviewed each villager, explained the new rules of operation and took their pictures for our records.

What we hope to do in the future:

1. Identify and enter into an agreement with a qualified agency or non-profit capable of managing Hastings Village.
2. Ensure that vital services remain available to those who wish to use them.
3. Restrict campers to authorized and established 10 X10 or 12 X 12 areas assigned.
4. Secure outside funding to make additional improvements for life safety and sanitation purposes.
5. Continue to assist in developing next-tier housing to move those capable out of homelessness into more permanent and suitable housing.
6. With the guidance and assistance of the Housing and Homelessness Task Force, aggressively seek to add to the available housing inventory in Sutherlin for workforce and moderate-income people.

OPTIONS

Council input in open discussion is very much appreciated.

February 6, 2024

CITY OF SUTHERLIN

DRAFT Rules for Inhabitants of Hastings Village DRAFT

1. HASTINGS VILLAGE

- A. Is a place where **Sutherlin** residents who are experiencing homelessness can find respite in a low-barrier and safe environment.
- B. Sutherlin resident: is a person who has been residing within the Sutherlin city limits for more than a one-year period (Villager).
- C. Non-Sutherlin resident: visitors shall be allotted a 12' X 12' tent-space for night camping only from 9:00 P. M. to 7:00 A. M. The following morning: visitor must vacate the space at that time. Note: Current residents of the village, may by way of violating these rules, be relegated to "Visitor" status for a period of time as determined by the Hastings Facility Manager (HFM).

2. CITY OF SUTHERLIN

- A. Effective 2/6/24, the City of Sutherlin, Homeless Response Team (HRT), subsequently takes managing control of Hastings Village.
- B. The village shall be managed through the Homeless Response Team (HRT) comprised of City of Sutherlin representatives hereby titled, City Manager, Livability Services Director, Public Works Director, Police Captain, Community Engagement Manager and Hastings Facility Manager (HRM), as well as three members of the Village Council.
- C. The principle point of contact for Villagers shall be the VC/HFM, who will subsequently coordinate with the appropriate HRT member, or directly call 911.

3. VILLAGE COUNCIL

- A. The City of Sutherlin welcomes the continuing involvement by a core leadership team of the village now titled Village Council (VC).
- B. The VC shall be comprised of a Village President, Village Vice President, and Village Master at Arms. Other members may be added to the joint agreement of the HFM, HRT and VC.
- C. The VC shall serve as a liaison between all villagers and the HFM and shall serve as the leadership team ensuring all camp rules are adhered to and coordinating with the HFM on any violations, needs or requests of the villagers.
- D. The VC shall keep the HFM/HRT informed of villagers transitioning in and out of the village and ensure tenancy of Sutherlin-only residents.
- E. The VC shall serve as the welcoming body for new residents and shall have the authority with the consult of the HFM to place tenants onto the grounds in locations for the greatest safety of all villagers and keep the HFM informed.
- F. The ongoing leadership of the VC is critical to the quality of life and safety of all the residents and therefore, the VC shall have the responsibility of coordinating issues and needs of the village to the HFM. The HFM shall, however, have "final-say" on any matter brought before him.

4. VILLAGE RESIDENT'S EXPECTATIONS AND RULES FOR HABITATION

A. Visitors

The VC in collaboration with the HFM has both the right and authority to ensure the safety of all the residents of Hastings Village. If at any time a visitor of the village demonstrates actions compromising the safety or security of this village, the VC shall direct the individual to leave immediately and further, hold the responsibility for calling the HFM, Police Captain or 911 to have that person trespassed from the property. No visitor shall be authorized to camp for a night without the HFM final approval. The night-stay "visitor" shall vacate the Village by 7:00 the following morning.

- B. As referenced in section 1 C, from time-to-time a previous resident may be relegated back to "Visitor" status and therefore, must comply with 4 A above.

5. FACILITIES

- A. Village cleanliness is required for the well-being of all who live here and other than personal achievement in progressing forward, it is one of our highest priorities (See Section 9 B below).
- B. Every villager will be allotted a 12-foot by 12-foot space as designated by the HFM/VC.
- C. Any items extending out of this individually assigned 12' X 12' area shall be deemed waste and thrown into a dumpster either by the HFM, City staff and/or the VC.
- D. The HFM/VC shall set a day and time for each week when all villagers work together to clean up the entirety of the village and coordinate with the HFM for needed resources to complete weekly clean-up.
- E. The VC/HFM shall determine appropriate discipline for any individuals who refuse to participate in the weekly group clean-up. Such discipline could result in "trespassing" the violator and moving the individual from residency status to "Visitor" status.
- F. Every villager will be accountable for their own behavior and assigned space. Again, as referenced in "B and "C" above, if the space is grown beyond this expectation, the VC/HFM will determine appropriate disciplinary action.
- G. No tents or structures of any kind are allowed next to the fence along the West side next to Taylor. There shall from here forward remain a 30' buffer between structures and the fence.

6. BEHAVIOR

- A. Personal behavior that is disruptive to the rest of the villagers will not be tolerated. In such circumstances the HFM/VC shall have the authority to assess the circumstance on a case-by-case basis and render a solution for remedy, again, up to and including returning the violator back to "Visitor" status.
- B. Behaviors including public urination or defecation, not picking up after their own animals, excessive sanitation issues, public nudity or arousal, excessive hoarding, not contributing to the community shall be grounds for ejection from the village, Trespassed by the HFM/City staff and placed in "visitor" status, or in fact, based upon the actions, arrested.
- C. Acts towards any other villager such as intimidation, extortion, badgering, bullying, etc. will be cause for immediate expulsion and trespassed by HFM/HRT/City staff.
- D. Any illegal activity of any kind is absolutely prohibited in the village and will result in immediate expulsion and trespassed by the HFM/HRT/Police and possibly arrested.

7. PROGRAM OF CARE

- A. Hastings Village is in place with the goal of having each villager in an individually designed Program of Care (POC) that would lead to self-sustained independent living.
- B. As such, upon first arriving, each person (Sutherlin resident) is assigned a 12' X 12" space for tent living. If the individual then chooses to participate in a POC, they will be provided a covered shelter, when available.
- C. Upon completion of a POC or at a time when the case manager determines appropriate progress, the City of Sutherlin will work with agencies to facilitate a transition move into independent living.
- D. Should one not choose to move toward appropriate care leading to independent living, the courts have determined we must allow for a space to sleep at night.

8. DOGS

- A. As of this date, 2/6/2024, other than those currently in the village: going forward from here no dogs are allowed onto the grounds. The current dogs are hereby "grandfathered."
- B. Also, going forward, the rules for dog owners will be strictly enforced as follows:
 - 1. All dogs outside their assigned owner's living area shall always be on a controlled leash.
 - 2. Dog owners are expected to pick up all waste created by their dog.
 - 3. If approved by the HFM, a special run or isolated area shall be allowed with the cooperative agreement and accepted responsibility of the dog owners within the village.
 - 4. Dog owners of the village shall be held responsible for the behavior of their dog.

9. THREE HIGHEST PRIORITIES

- A. Individual Advancement
- B. Cleanliness
- C. Safety

I _____ will adhere to these expectations and be held accountable for by behaviors while staying at Hastings Village. If any of these expectations are not met with appropriate behavior, I will hold myself accountable for them and adhere to the behaviors brought forth by the council of Hastings Village.

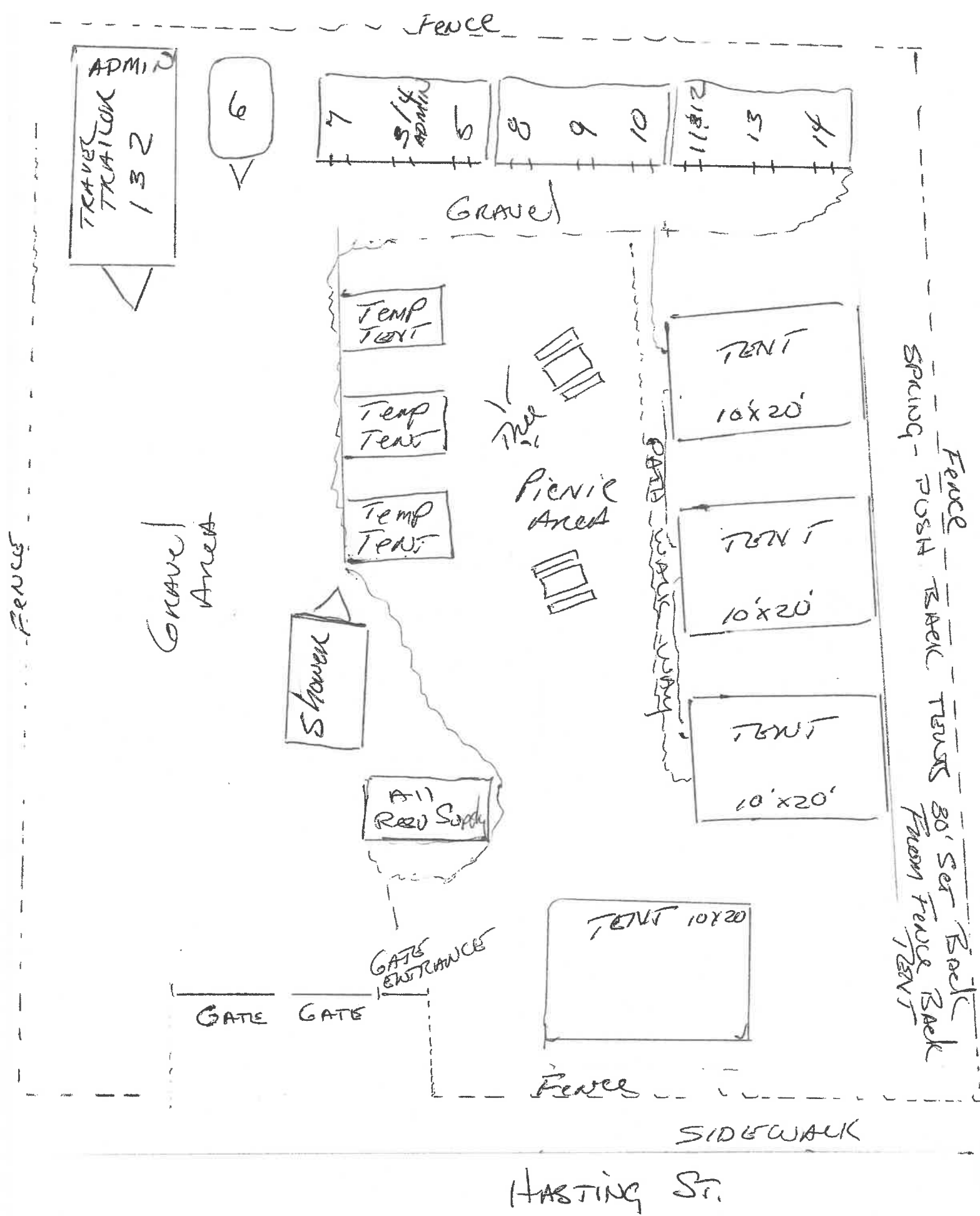
Signature

Date of Birth

Today's Date

HASTINGS VILLAGE: HOMELESS RESPONSE TEAM

Name	Position Title	Core Duties
Pat Lynch	Livability Services Director	Establish positive working relationships with all possible funding entities and seek funding from them; and apply for all possible funding grants applicable to our needs/agenda. Serve as our lobbyist.
Melanie Masterfield	Community Outreach Manager	Ensure our story and successes are broadcast throughout the State of Oregon and establish working relationships with businesses and agencies that could be beneficial to our agenda. Keep a record of our activities.
CPT Kurt Sorenson	Security Officer/Police Captain	Provide counsel to the team regarding critical safety issues that we should be responsive to and to serve as the “final say” in the handling of law-oriented issues and specific circumstances/events
Aaron Swan	Infrastructure and Logistics/Public Works Director	Provide counsel and oversight of site construction, repair, and improvements. Arrange for the delivery of services from other vendors
Dana Foley	Hastings Facility Manager (HFM)	Provide oversight of, and coordination with, the Village Council. Shall provide leadership and direction of the village living environment and have the final say in resolving the day-to-day issues that arise. Responsible for determining discipline action of any individual working in partnership with the VC
Dani Vallotten	Village Council	Provide oversight of day-to-day activities and coordinate with HFM
Kerri Miller	Village Council	Provide oversight of day-to-day activities and coordinate with HFM
Karl Kiesz	Village Council	Provide oversight of day-to-day activities and coordinate with HFM
Mary Anderson	Services Coordinator	Single point of contact for all contributed items to HV. Coordinate with VC in the storage, inventory, and timely delivery of needed resources for the village as a whole or individual villagers
Jerry Gillham	General Manager	





CITY MANAGER REPORT (verbal)





PILT (Payment in Lieu of Taxes) Discussion (verbal)





COUNCIL COMMENTS





PUBLIC COMMENT





ADJOURNMENT





FOR YOUR INFORMATION



PUBLIC NOTICE – CITY OF SUTHERLIN
URBAN RENEWAL AGENCY & CITY COUNCIL MEETINGS

The February 12, 2024, Urban Renewal Agency & City Council meetings will be held in Civic Auditorium at 175 E Everett beginning at 6:45 p.m. The City has taken steps to utilize current technology in order to make meetings available to the public in compliance with ORS 192.670 – Meetings by Means of Telephone or Electronic Communication. The public is welcome to attend the meeting in person or join via Zoom.

City of Sutherlin is inviting you to a scheduled Zoom meeting.

Topic: Urban Renewal Agency & City Council Meetings

Time: February 12, 2024 6:45 PM Pacific Time (US and Canada)

Join Zoom Meeting

<https://us06web.zoom.us/j/82521155465?pwd=SSSY6vkGCmu85BD6Y9SjL1JzAOJj.1>

Meeting ID: 825 2115 5465

Passcode: 675372

Find your local number: <https://us06web.zoom.us/u/kdNmfpQt8w>

Melanie Masterfield

From: Melanie Masterfield
Sent: Wednesday, February 7, 2024 8:28 AM
To: Ashley (ashley@bciradio.com); DC Commisioners (commissioners@co.douglas.or.us); Dennis Nakata; Erica Welch; Kyle-KQEN (KYLE@BCIRADIO.COM); Michael Salpino; News Desk (newsdesk@nrtoday.com); Register Guard (rgnews@registerguard.com); Roseburg Beacon (info@roseburgbeacon.com)
Subject: City of Sutherlin Agendas
Attachments: 2.12.24 URA Agenda.pdf; 2. CC FEB 12.24 Meeting.pdf

Good morning. I've attached our Urban Renewal and City Council meeting agendas for Monday, February 12, 2024.



Melanie Masterfield, CMC
City Recorder/Community Engagement Manager
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