

Clackamas County Planning and Zoning Division Department of Transportation and Development

Development Services Building 150 Beavercreek Road | Oregon City, OR 97045 503-742-4500 | zoninginfo@clackamas.us www.clackamas.us/planning

Notice of a Public Hearing on a Land Use Proposal in Your Area

Date of Mailing of this Notice: May 19, 2022

Notice Sent To: Agencies, Community Planning Organization(s) and property owners within 2,640 feet of the

subject property.

HEARING DATE: June 23, 2022

HEARING TIME: This hearing will not begin before 9:30 a.m. However, it may begin later depending on the length

of any preceding items.

HEARING LOCATION: The public hearing will be conducted virtually using the Zoom platform. One week prior to the hearing, a Zoom link to the public hearing and details on how to observe and testify online or by telephone will be

available on our website: www.clackamas.us/meetings/planning/hearingsofficer

File Number: Z0232-21-ZAP

Applicant: Jessey Cereghino

Property Owner: Janice Kennedy, Gayleen Weiler, Joleeta Perkins

<u>Proposal:</u> Zone change from FF-10 (Farm Forest 10 acre) to RA-2 (Rural Area Residential 2-acre) to allow for a future subdivision of 53 lots. No development is proposed as part of this application; the applicant has submitted a separate application for a 53-lot subdivision, however, the subdivision application has been placed on hold pending the outcome of the zone change.

<u>Applicable Comprehensive Plan and Zoning and Development Ordinance Criteria:</u> Comprehensive Plan, Zoning and Development Ordinance Sections 202, 316, 1202, 1307. These criteria may be viewed online at http://www.clackamas.us/planning/zdo.html; https://www.clackamas.us/planning/zdo.html; https://www.clackamas.us/planning/comprehensive.html

Oregon Administrative Rules and Statewide planning Goals 11, 12, and 14 are also applicable when determining whether a Goal Exception is required for the zone change.

<u>Site Address and/or Location:</u> 21418 S Hwy 213; near the northeast corner of the intersection of Hwy 213 and Mitchell Ln, northeast portion of the site abuts the end of Lammer Rd

Assessor's Map: T3S, R2E, Section 21, Tax Lot 200; T3S, R2E, Section 22, Tax Lot 200

Property Size: 111 acres

Zoning: FF-10 (Farm Forest 10 acre)

Comprehensive Plan Designation: Rural

Exhibit 5 Exhibits
Page 1/16/20/2/A \$ 1999 1/16/4

NOTICE TO MORTGAGEE, LIENHOLDER, VENDOR OR SELLER: ORS CHAPTER 215 REQUIRES THAT IF YOU RECEIVE THIS NOTICE, IT MUST PROMPTLY BE FORWARDED TO THE PURCHASER.

HOW TO OBTAIN ADDITIONAL INFORMATION

Staff Contact: Melissa Ahrens; 503-742-4519 or mahrens@clackamas.us

A copy of the application, all documents and evidence submitted by or on behalf of the applicant, and applicable criteria are available for inspection at no cost. In addition, a staff report on the application will be available for inspection at no cost at least **seven days prior to the hearing**. Hard copies of documents will be provided at a cost of \$1 for the first page and 10 cents for each additional page or you may view or obtain these materials:

- 1. By emailing or calling the staff contact; or
- 2. Online at https://accela.clackamas.us/citizenaccess/. After selecting the "Planning" tab, enter the File Number to search. Select Record Info and then select "Attachments" from the dropdown list, where you will find the submitted application.

<u>Community Planning Organization for Your Area</u>: The following recognized Community Planning Organization (CPO) has been notified of this application and may develop a recommendation. You are welcome to contact the CPO and attend their meeting on this matter, if one is planned. If this CPO currently is inactive and you are interested in becoming involved in land use planning in your area, please contact the Community Involvement Office at 503-655-8552. **CPO:** Beavercreek Hamlet **Contact**: Tammy Stevens: <u>tsr@bctonline.com</u>, P.O. Box 587, Beavercreek, OR, 97004-0736

HOW TO SUBMIT TESTIMONY ON THIS APPLICATION

- All interested parties are invited to "attend" the hearing remotely online or by telephone and will be provided with an opportunity to testify orally, if they so choose. One week prior to the hearing, specific instructions will be available online at www.clackamas.us/meetings/planning/hearingsofficer
- Written testimony received by June 9, 2022, will be considered by staff prior to the issuance of the staff report and
 recommendation on this application. However, written testimony will continue to be accepted until the record
 closes, which may occur as soon as the conclusion of the public hearing.
- Written testimony may be submitted by email, fax, or regular mail. Please include the permit number on all correspondence and address written testimony to the staff contact who is handling this matter.
- Testimony, argument, and evidence must be directed toward the criteria identified above, or other criteria in the Zoning and Development Ordinance or Comprehensive Plan that you believe apply to the decision. Failure to raise an issue in person at the hearing or by letter prior to the close of the record, or failure to provide statements or evidence sufficient to afford the Hearings Officer an opportunity to respond to the issue, precludes an appeal to the Oregon Land Use Board of Appeals based on that issue.
- Written notice of the Hearing Officer's decision will be mailed to you if you submit oral or written testimony or make written request for notice of decision and provide a valid mailing address.

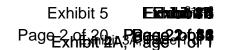
PROCEDURE FOR THE CONDUCT OF THE HEARING

The hearing will be conducted by one of the Land Use Hearings Officers, who are appointed by the Board of County Commissioners to conduct public hearings and issue decisions on certain land use permit applications. The following procedural rules have been established to allow an orderly hearing:

- 1. The length of time given to individuals speaking for or against an item will be determined by the Hearings Officer prior to the item being considered.
- 2. A spokesperson representing each side of an issue is encouraged.
- 3. Prior to the conclusion of the evidentiary hearing, any participant may request an opportunity to present additional evidence, argument, or testimony regarding the application. The Hearings Officer will either continue the hearing or leave the record open for additional written evidence, argument, or testimony.

Clackamas County is committed to providing meaningful access and will make reasonable accommodations, modifications, or provide translation, interpretation or other services upon request. Please contact us at 503-742-4545 or email DRenhard @clackamas.us.

503-742-4545: ¿Traducción e interpretación? |Требуется ли вам устный или письменный перевод? 翻译或口译 ? | Cấn Biên dịch hoặc Phiên dịch? | 번역 또는 통역?





Clackamas County Planning and Zoning Division Department of Transportation and Development

Development Services Building 150 Beavercreek Road | Oregon City, OR 97045 503-742-4500 | zoninginfo@clackamas.us www.clackamas.us/planning

LAND USE APPLICATION DEEMED COMPLETE

	ORIGINAL DATE SUBMITTED:
	FILE NUMBER:
	APPLICATION TYPE:
	anning and Zoning Division staff deemed this application complete for the purposes of Oregon ed Statutes (ORS) 215.427 on:
Staff N	Name Title
Comn	nents:
Check	one:
	The subject property is located inside an urban growth boundary. The 120-day deadline for final action on the application pursuant to ORS 215.427(1) is:
	The subject property is not located inside an urban growth boundary. The 150-day deadline for final action on the application pursuant to ORS 215.427(1) is:

APPLICANT SUBMITTAL LIST

Index of Submittal:

21418 S HWY 213 and No site address, Lammer Rd.

Original Submittal

- 1. Zone Change Application
- 2. Zone change Narrative
- 3. Traffic Impact Study, Zone change analysis (as it relates to traffic)
- 4. Septic area approvals (for FF10- 61 holes)
- 5. ¼, ½ and 1 mile lot size analysis
- 6. Preliminary statement of feasibility from Clackamas River Water
- 7. Pre-application notes from Planning and Engineering
- 8. Wetland and seasonal ditch map.
- 9. Pre-application notes

Completeness Response

- 10. Memorandum from Legal Counsel re Zone Change Criteria and Statewide Planning Goals Consistency, including the following exhbiits:
 - a. County staff correspondence re: no sensitive habitat areas
 - b. ¼, ½, and 1-mile density study
 - c. Soil report
 - d. Traffic Impact Study (M. Ard, Nov. 15, 2021)
 - e. RA2 Subdivision Concept w/ Topography
 - f. Comments from Clackamas River Water (Oct. 27, 2021)
 - g. Preliminary Statement of Feasibility (B. Johnson, Oct. 26, 2020)
- 11. Wetland Delineation and Report (June 15, 2021)
- 12. RA-2 Zone Concept Subdivision Plat

Appendix N - South System Exhibit 5 Page 4 nt A Page 4 pg 4



- 13. Ltr. from E. Hernandez regarding septic feasibility
- 14. Preliminary statement of feasibility signed by J. Gish
- 15. Ltr. from T., Sisul explaining how water quality standards can be met for internal streets (Sep. 18, 2021)
- 16. Ltr. from G. Stephenson addressing ODOT Left Turn Request and Transportation Planning Rule (April 19, 2021), with the following exhibits:
 - a. Concept left turn and channelization at Mitchell Lane
 - b. Concept left turn and channelization at new access point north of Mitchell Lane

Appendix N - South System Exhibit 5 Ekhali ist Page 5 nt 2 page 5 pg 8 9 9





April 20, 2022

Garrett H. Stephenson

Admitted in Oregon T: 503-796-2893 C: 503-320-3715 gstephenson@schwabe.com

VIA E-MAIL

Mr. Ben Blessing
Ms. Melissa Ahrens
Clackamas County Planning and Zoning
Development Services Building
150 Beavercreek Road
Oregon City, Oregon 97045

RE: 150-day extension of County File Nos. Z0232-21-ZAP and Z0233-21-SL

Dear Mr. Blessing and Ms. Ahrens:

This office represents Jessey Cereghino (the "Applicant") in the above-referenced casefiles, which relate to a proposed zone change and subdivision of property located at the intersection of Highway 213 and Mitchell Street. The applications were deemed complete on November 15, 2021. On December 29, 2021, the Applicant extended the 150-day deadline by 45 days to Monday, May 20, 2022. On February 16, 2022, the Applicant further extended the 150-day deadline to Friday, July 29, 2022. Pursuant to ORS 215.427(5) this letter officially requests, and hereby grants, a further extension of the County's 150-day decision deadline for the above-referenced casefiles by 31 days, to Monday, August 29, 2022. The purpose of the request is to allow additional time for the Applicant to address staff's informational requests.

Best regards,

Garrett H. Stephenson

GST/JC:jmhi

cc: Mr. Jessey Cereghino (via email) (w/enclosures)

PDX\136370\265303\GST\33507465.1



February 16, 2022

Garrett H. Stephenson

Admitted in Oregon T: 503-796-2893 C: 503-320-3715 gstephenson@schwabe.com

VIA E-MAIL

Mr. Ben Blessing Ms. Melissa Ahrens Clackamas County Planning and Zoning Development Services Building 150 Beavercreek Road Oregon City, Oregon 97045

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Best regards,

Garrett H. Stephenson

DocuSigned by:

Jessey Cereguino Jessey Cereghino

GST/JC:jmhi

cc: Mr. Jessey Cereghino (via email)

PDX\136370\265303\GST\32987703.1



RECEIVED

December 29, 2021

JAN 5 2022

Clackamas County
Planning & Zoning Division

Garrett H. Stephenson

Admitted in Oregon T: 503-796-2893 C: 503-320-3715 gstephenson@schwabe.com

VIA E-MAIL

Mr. Ben Blessing
Ms. Melissa Ahrens
Clackamas County Planning and Zoning
Development Services Building
150 Beavercreek Road
Oregon City, Oregon 97045

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Best regards,

Garrett H. Stephenson

Jessey Cereguino

GST/JC:jmhi

cc: Mr. Jessey Cereghino (via email)

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Planning and Zoning Department of Transportation and Development

Development Services Building 150 Beavercreek Road | Oregon City, OR 97045 503-742-4500 | zoninginfo@clackamas.us www.clackamas.us/planning STAFF USE ONLY

pd 5.24.21

Staff Initials:

Z0232-21-ZAP

File Number:

Land use application for:

ZONE CHANGE

Reviewed by Hearings Officer

Application Fee: \$3,560 if filed with another application for the same property, or \$4,110 if filed alone (+ \$120 if an expanded notification area is required by ZDO Section 1307)

Aprilland	PLICANT INFORMATION			
Applicant name: Jessey Cerehine Applicant mailing address:	Sessey Celshiro Quest.	Applicant phone:		
13820 5 John WALLE LN	mulino	State:	ZIP: 970012	
Contact person name (if other than applicant):	Contact person email: Con		ntact person phone:	
Contact person mailing address:	City:	State:	ZIP:	

District the second			F	ROPOSAL		
Brief description of proposal:	New	Zime	טלי	RAZ	on	Pre-application conference file number: 2PAC 0102-20

011		5	ITE INFOR	MATION	
Site address: 214 No 51k Map and tax lot #:	Appren -	LAMME	MND	Comprehensive Plan designation:	Zoning district:
map and tax lot m.	Township: 35 Township: 35				Land area:
			_Section:	Tax Lot:	
Adjacent properties u	inder same owners	ship:			
	Township:	_Range:	Section:	Tax Lot:	
	Township:	_ Range:	Section:	Tax Lot:	

Printed names of all property owners:

Janice W Kennedy, Trustee

Gayleen D. Weiler

Joleeta K. Perkins

I hereby certify that the statements contained berein, along with the evidence submitted, are in all respects

Applicant signature:

Date(s):

May-04-2021 | 9:14 PM PDT

May-04-2021 | 6:04 PM PDT

May-04-2021 | 6:08 PM PDT

May-04-2021 | 6:08 PM PDT

May-04-2021 | 6:08 PM PDT

Date:

Date:

Date(s):

May-04-2021 | 6:04 PM PDT

May-04-2021 | 6:08 PM PDT

May-04-2021 | 6:08 PM PDT

Date:

Date:

Clackamas County

Page 1 of 4
Zone Change Reviewed by Hearings Officer (Type III)

Updated 01/01/2021



Planning and Zoning Department of Transportation and Development

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Land use application for:

ZONE CHANGE

Reviewed by Hearings Officer

Application Fee: \$3,560 if filed with another application for the same property, or \$4,110 if filed alone

(+ \$120 if an expanded notification area is required by ZDO Section 1307)

Staff Initials:	File Number:

Applicant name:	Applicant email:	í	Applica	ant phone:
Jessey Carehino	Jessen (21	shiro Quart	! 5	11-490-0920
Jessey Cerehino Applicant mailing address:	City:		State:	
13820 5 John WAY	re LN mulino		on	97042
Contact person name (if other than applica	nt): Contact person ema	il:	Conta	ct person phone:
Contact person mailing address:	City:		State:	ZIP:
	PROPOSAL			1
Brief description of proposal:	Zime to 12AZ	orc Pre-ap	plication cor	nference file number
RRFF5		2	PACO	102-20
	SITE INFORMATIO	N		
Site address: 21418 SHWY		orehensive Plan design	nation:	Zoning district:
No sik Appren - E				FFLO
Map and tax lot #:				Land area:
Township: <u>35</u> R	ange: <u>ZE</u> Section: <u>ZI</u>	Tax Lot: _ 'ZU	0	111 Acres
Township: 35 R	ange: 25 Section: 22	Tax Lot: _ 2.0	0	
Township: R	ange: Section:	Tax Lot:		
Adjacent properties under same ownership):			
Township: R	ange: Section:	Tax Lot:		
Township: R	lange: Section:	Tax Lot:	_	
Printed names of all property owners:	Signatures of all property of	wners: D	ate(s):	
I hereby certify that the statements of true and correct to the best of my ki	contained herein, along with		, ,	in all respects
Applicant signature:	O	10	oate:	. 1

APPLICANT INFORMATION

Clackamas County

Page 1 of 4 Zone Change Reviewed by Hearings Officer (Type III) Updated 01/01/2021

A. Complete a pre-application conference:

You must attend a pre-application conference with Planning and Zoning staff before filing this application. <u>Information</u> about the pre-application conference process and a request form are available from the Planning and Zoning website.

B. Review applicable land use rules:

This application is subject to the provisions of <u>Section 1202</u>, <u>Zone Changes</u> of the <u>Clackamas County Zoning and Development Ordinance</u> (ZDO).

It is also subject to the ZDO's definitions, procedures, and other general provisions, as well as to the specific rules of the subject property's zoning district and applicable development standards, as outlined in the ZDO.

C.	Turn in all of the following:
	Complete application form: Respond to all the questions and requests in this application, and make sure all owners of the subject property sign the first page of this application. Applications without the signatures of <i>all</i> property owners are incomplete.
	Application fee: The cost of this application is \$3,560 if it is filed concurrently with another land use application for the same property or \$4,110 if it is filed alone. A \$120 notification surcharge also applies if an expanded notification area is required by ZDO Section 1307. Payment can be made by cash, by check payable to "Clackamas County", or by credit/debit card with an additional card processing fee using the <u>Credit Card Authorization Form</u> available from the Planning and Zoning website. Payment is due when the application is submitted. Refer to the FAQs at the end of this form and to the adopted <u>Fee Schedule</u> for refund policies.
	Vicinity map: Provide a map of the area around the property, drawn to scale, that shows the uses and location of improvements on adjacent properties and properties across any road.
	Site plan: Provide a site plan (also called a plot plan). A <u>Site Plan Sample</u> is available from the Planning and Zoning website. The site plan must be accurate and drawn to-scale on paper measuring no larger than 11 inches x 17 inches. The site plan must illustrate all of the following (when applicable):
	 Lot lines, lot/parcel numbers, and acreage/square footage of lots, and contiguous properties under the same ownership;
	 All existing and proposed structures, fences, roads, driveways, parking areas, and easements, each with identifying labels and dimensions;
	 Setbacks of all structures from lot lines and easements;
	 Significant natural features (rivers, streams, wetlands, slopes of 20% or greater, geologic hazards, mature trees or forested areas, drainage areas, etc.); and
	Location of utilities, wells, and all onsite wastewater treatment facilities (e.g., septic tanks, septic drainfield areas, replacement drainfield areas, drywells).
	Service Feasibility Determinations: Request that the property's water provider, sanitary sewer provider, and surface water management authority, as applicable, each complete a <u>Preliminary Statement of Feasibility</u> and include those completed statements with your application. If the proposed development will be served by an onsite wastewater treatment system (e.g., a septic system), include an approved Site Evaluation or Authorization Notice from the <u>Septic & Onsite Wastewater Program</u> attesting to the feasibility of your proposal.
	Transportation impact study: Refer to the information provided at the pre-application conference regarding the need for a transportation impact study. Include a copy of any required study with your application submittal.
Clackamas	Any additional information or documents advised of during the pre-application conference S County Page 2 of 4 Updated 01/01/2021 Zone Change Reviewed by Hearings Officer (Type III)

Answer the following questions: D.

What zoning district designation are you requesting for the subject property? 1. Requested zoning district: RAZ 15t PLFF5 200 If the zoning designation you requested in response to Question 1 cannot be approved 2. because the property doesn't meet the approval criteria, would you like an alternate zoning district designation to be considered? YES, and the alternate zoning district designation(s) I would like is/are: RRFF5 Are you filing this zone change application with another application? 3. ☐ NO, this application is being filed alone. YES, this application is being filed with another application. That other application requests the following: Subdisisin App

Updated 01/01/2021

E. Respond in a narrative:

Your application submittal must include a narrative that fully responds to the following. Due to the technical nature of these requirements, guidance on how best to respond will be provided during the required pre-application conference.

- 1. How is the proposed zone change consistent with the applicable goals and policies of the County's Comprehensive Plan?
- 2. If development under the proposed zone would need public services (sanitary sewer, surface water management, and water), could the need be accommodated with the implementation of the applicable service provider's existing capital improvement plan? The cumulative impact of the proposed zone change and development of other properties under existing zoning designations must be considered.
- 3. Explain how the transportation system is adequate and will remain adequate with approval of the proposed zone change. This explanation should take into consideration the following:
 - a. "Adequate" means a maximum volume-to-capacity ratio (v/c), or a minimum level of service (LOS), as established by Comprehensive Plan Tables 5-2a, *Motor Vehicle Capacity Evaluation Standards for the Urban Area*, and 5-2b, *Motor Vehicle Capacity Evaluation Standards for the Rural Area*.
 - b. Conduct the evaluation of transportation system adequacy pursuant to the Transportation Planning Rule (Oregon Administrative Rules 660-012-0060).
 - c. Assume that the subject property is developed with the primary use, allowed in the proposed zoning district, with the highest motor vehicle trip generation rate.
 - d. The methods of calculating v/c and LOS are established by the Clackamas County Roadway Standards.
 - e. The adequacy standards apply to all roadways and intersections within the impact area of the proposed zone change. The impact area is identified based on the Clackamas County Roadway Standards.
 - f. A determination of whether submittal of a transportation impact study is required is made based on the Clackamas County Roadway Standards, which also establish the minimum standards to which a transportation impact study shall adhere.
 - g. (d) through (f) above do not apply to roadways and intersections under the jurisdiction of the State of Oregon. Instead, motor vehicle capacity calculation methodology, impact area identification, and transportation impact study requirements are established by the ODOT Transportation Analysis Procedures Manual for such roadways and intersections.
- **4.** Explain how the safety of the transportation system is adequate to serve the level of development anticipated by the proposed zone change.

Clackamas County

Page 4 of 4
Zone Change Reviewed by Hearings Officer (Type III)

Updated 01/01/2021

Zone change Narrative

1. How is the proposed zone change consistent with the applicable goals and polices of the county's Comprehensive plan?

As proposed, we believe both the RA2 and the RRFF5 zones meet the Rural goals of the comprehensive plan. We believe they more closely align with the goals stated in the RA2 zone in section 4.MM.1 as follows:

- a. "Parcels are generally two acres or smaller". As you will see in attached documentation, the lot size analysis done by the county showed at distances of ¼ mile, ½ mile and 1 mile radius the majority of the lots were 2 acres or less. At ¼ mile distance they were 72% under 2 acres. At ½ mile distance they were 80% under 2 acres and at a 1-mile distance they were 85% less than 2 acres. So, it wasn't a small majority but a very large majority of the lots are 2 acres or less.
- b. "The area is significantly affected by development". A simple look at google maps shows that the properties along Highway 213 are largely developed from Oregon city to south of this property several major intersections. I certainly don't know how to define significantly, but using the previous section as indication that the residential use lots are less than 2 acres also seems significant.
- c. "There are no natural hazards, and the topography and soil conditions are well suited for the location of homes". The lot is mostly flat to gently rolling. There is drainage ditch that meanders through the property but with the lot design we can restrict building with proper setbacks to that area leaving plenty of room for every lot in the layout, in addition there is a creek on the one property but we do not plan to develop across the creek at all. The access for the homes on the other side of the creek will be from Lammer RD on the other side of the creek, thus avoiding any difficult terrain.
- d. "A public or private community water system is available". Yes, Clackamas river water is available and is good with a variety of proposals. They did request after they looked at the initial pre-app designs that we loop the water back to 213. We can do that through the fire access road we will add for fire department. In addition, if we need further loops for design, we can put an additional utility easement strategically to allow the Flow and access to water that Clackamas River Water would want us to have.
- e. "Areas are in proximity or adjacent to an Unincorporated Community or incorporated city". I do not know what definition for proximity is, but this is very close to the incorporated city of Oregon city. There are other unincorporated communities like Beavercreek and Mulino that are also only a few miles away.

f. "In areas adjacent to urban growth boundaries, RA-2 zoning shall be limited to those areas in which virtually all existing lots are two acres or less". This is NOT adjacent to the urban Growth boundary. In addition, 72-85% of all lots in the area are 2 acres or less.

The secondary Zoning we'd be looking for is RRFF5, which I think it still works, but think it is not as good a fit as RA2 zone as follows.

Section 4.MM.2: The RRFF-5 zoning district shall be applied when all the following criteria are met:

- a. "Parcels are generally five acres". As mentioned before, no, lots are generally 2 acres or less if generally is defined by majority or super majority.
- b. "The area is affected by development". Yes, same as previous RA2
- c. "There are no serious natural hazards, and the topography and soils are suitable for development". Also previously answered with RA2. The lots in RRFF5 certainly give more room, but the majority of the lots in RRFF5 are not 5 acres but closer to 3 using the flex lot standard, so not much different.
- d. "Areas are easily accessible to an Unincorporated Community or incorporated city". Yes.

In addition, defining the FF-10 criteria from 4.MM.11.3 has three criteria. And it sure seems clear it matches RA2 the best and RRFF5 second and FF10, the current zoning the worst.

- a. "Parcels are generally 10 acres." No. Very few are that large.
- b. "The area is developed with a mixture of uses not consistent with extensive commercial agriculture or forestry uses." The area doesn't have much farm and forest use along the 213 corridor to this point.
- c. "Access to an Unincorporated Community or an incorporated city is generally poor". No, access is very simple to several communities from this location.

Additional notes from Clackamas county during pre-application conference: I do not need to retype the notes from the pre-app, just point out that the county determined we could meet specific criteria to qualify for this 'carve out' pathway that avoids the needs for a Goal 14 exception.

2. If Development under the proposed zone would need public services could the need be accommodated with the implementation of the applicable service provider's existing capital improvement plan?

This one is a fairly simple one to answer. Yes. The densest zone change option we are pursuing is RA2, which is also 2-acre minimum lots. There are options in RA2 for PUD developments but we are not pursuing any version of that. So, the individual lots would be all 2 acres or more. This

lot size is fairly simple to accommodate the storm, and septic because we have a fairly non-restrictive site.

The water district has done different mock ups for us that allow us to house at least 55 home sites, and we are not going to be doing that many homes in the densest version of this development. I will provide in the additional documentation the pre-app information from Clackamas River Water. They asked for a loop to 213, which we have provided access to do in our most current layout drawings in both RA2 and RRFF5, which would also be utilized as an emergency access for Fire. One of their designs in RA2 did include doing a water line under the creek to loop the water with the Lammer property, but in post discussions we will not be doing more than 1-4 homes on Lammer and don't need the loop to go through to Lammer if we can loop to 213. During the final engineering of this plan we could even create more opportunity to loop the water lines if necessary.

Septic: Under the current zoning, we have ability to do 11 lots. There is not much flexibility in this layout, because every lot needs to be 10 acres with no flex lot standard available. With that in mind, we had 61 holes evaluated (9 lots with 6 holes, one with 3 and one with 4) from the septic department. All of these sites were approved for standard systems (some capping fill). Virtually the whole site appears to be approvable for septic systems with exception to the ditch running North west through the would have adequate room for a septic system meeting setbacks from the season ditch, and wetland. The Septic department can't say with certainty that this would be the case, but we can draw the conclusion from the attached site evaluations we would have the room even if some easements were necessary for a few of the lots. There is a huge benefit on the 2 acre lots for the on-site disposal because having a water district and no wells, allows us maximum space for septic systems. Wells require 100-foot setbacks which does create tight sites. However, many sites around Clackamas county have both a well and septic on two acre lots. We are only needing to get the septic system. Knowing the Clackamas county soils department can't say with 100 percent certainty we understand our final layout might be slightly modified in order to get septic approvals to all work and could result in a slight variation of total lots. The goal of the 11 site evaluations was to get a feel if the zone change would be appropriate based on the soils because the soils department could only allow 11 site evaluations at this time as it zoned FF10. It accomplished not only the goal of 11 sites with standard systems, but also to show it is likely to have an easy time getting the additional approvals.

Surface water management: We have not done any specific studies for how to handle surface water management because this would be a fairly simple design once we have roads established. The areas drainage is quite good and the pavement is quite minimal for the acreage we are working on. The county would require water quality swales or ditches off the side of the new shared private roads. These roads are not required to be curbed roads so we would have almost continuous water quality swales. These would be able to easily handle the run off and we could keep water on site with large enough swales, or if allowed we could let it feed into the current season ditch after going through the water quality swales as it has been doing the last 100 years.

Appendix N - South System

The development zone of RA2 would have no adverse impact to surrounding areas. I will attach the Lot Size analysis Clackamas county did for me last fall looking at the density of the lots in the surrounding area. In a typical template test for other uses they look at a ¼ mile radius from the lot to determine the size of the majority of lots (50% or more). In this template test we did ¼ mile radius, ½ mile radius and a 1-mile radius. In all cases the super majority of the lots were less than 2 acres in size which is the smallest lot we would have. It is hard to imagine that the density of our 2 acre lots would challenging when the vast majority in a ¼ mile, ½ mile and 1 mile are smaller than 2 acres.

- 3. Explain how the transportation system is adequate and will remain adequate with approval of the proposed zone change.
 - a. "Adequate" means a maximum volume-to-capacity ratio (v/c), or a minimum level of service (LOS), as established by Comprehensive Plan Tables 5-2a, Motor Vehicle Capacity Evaluation Standards for the Urban Area, and 5-2b, Motor Vehicle Capacity Evaluation Standards for the Rural Area.

Based on the analysis provided in the Traffic Impact Study prepared by Ard Engineering, if a southbound left-turn lane is provided in conjunction with the proposed development the study intersection will operate acceptably per Clackamas County and ODOT standards both upon completion and at the long-range planning horizon. See Table 3 on page 18 of the Traffic Impact Study.

b. Conduct the evaluation of transportation system adequacy pursuant to the Transportation Planning Rule (Oregon Administrative Rules 660-012-0060)

A detailed TPR analysis is provided on pages 21-23 of the Traffic Impact Study prepared by Ard Engineering. The analysis cites the relevant sections of OAR 660-012-0060 and provides detailed responses to the requirements.

c. Assume that the subject property is developed with the primary use, allowed in the proposed zoning district, with the highest motor vehicle trip generation rate.

The analysis was conducted using the "reasonable worst case development scenarios" for the existing and proposed zoning, as required by Clackamas County, ODOT, and the Transportation Planning rule.

d.

e.

f.

g. (d) through (f) do not apply to roadways and intersections under the jurisdiction of the State of Oregon. Instead, motor vehicle capacity calculation methodology, impact area identification, and transportation impact study requirements are established by the ODOT Transportation Analysis Procedures Manual for such roadways and intersections.

Since the study intersection operates under the jurisdiction of the Oregon Department of Transportation, sections (d) through (f) are not applicable to this analysis. The Traffic Impact study prepared by Ard Engineering was conducted in conformance with the procedures and methods described in ODOT's Transportation Analysis Procedures Manual.

4. Explain how the safety of the transportation system is adequate to serve the level of development anticipated by the proposed zone change.

Appropriate operational and safety mitigations are recommended in the Traffic Impact Study prepared by Ard Engineering. With implementation of the recommended mitigation, the safety of the transportation system will be adequate to serve the level of development anticipated by the proposed zone change.

Additional Engineering notes: The engineering department had several concerns during the pre-application conference. I believe with proper planning all of those concerns for access off Mitchell could easily be met. In addition to the formality items like a PUE and dedications where required, they were worried in our original design that Mitchell would have too many homes on it with only a single access. We discussed putting in a fire access point directly to 213 that would be gated for fire access, no other vehicle access. This was a solution that they seemed would work just fine for our higher density of housing. Connecting through to Lammer was discussed but that is not a route we want to look into, and the 213 fire access seems to work.

A second issue was that we need to have proper fire turn arounds. As the final engineering is not complete, this doesn't show perfectly. But we have the room to do this and will illustrate some ways to accomplish this on the attached maps. I believe these items and their other concerns are easily answered during formal engineering process and would be conditions we understand could impact our final layout approvals.

Additionally, we are proposing 4 home sites taking access from Lammer Rd. This is a concern to the engineering department and I do expect there to be some conditions that we may or may not be able to satisfy to get the full 4 units off of Lammer. Johnny Gish did raise his concerns that we may have issues with fire truck access and site line visibility in the Pre-application conference. My hope is the zone change would be approved, but it is possible that we have a reduction to the 4 homes proposed off of Lammer if we can't put proper safety measures in place cost effectively. This shouldn't impact the overall project so I didn't want to slow down the application for this reason. We would not be proposing a bridge to go over the creek to get the extra lots, so we are treating this access off of Lammer as stand alone and whatever we can reasonably develop from this side is what we will do final engineering for.

Appendix N - South System

Additional Plan Notes: Lots 42-49 are shown to have ample room (half acre plus) above the 20% slope to the road. It is hard to tell this on the plan, as noted, but I wanted to be sure that it was known that it was taken into account to avoid any development or need for any areas greater than 20 percent slope to be developed with home sites. I would expect a buffer from the creek and the 20% slope areas to be restricted as non-development areas with the final engineering and planning notes. The areas created were created to be a minimum size to allow ample room to develop both a home site and a septic system. It does increase the chances on those 7 lots that an advanced treatment facility will be needed to reduce the linear footage of the septic systems, which is understood. For a reference, the shallowest lot area is 260 feet from the proposed new road to the 20% slope.

21418 S HWY 213 3 2 E 21 TAX LOT 200

3,621,961 SQUARE FEET 83.15 ACRES±

3 2 E 22 TAX LOT 200

1,217,984 SQUARE FEET 27.96 ACRES±

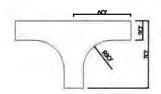
111.11 ACRES TOTAL
R2 ZONING, MIN LOT SIZE 2 AC
111/2 = 55 LOTS ALLOWED
53 LOTS PROPOSED.

UTILITIES:
SEPTIC. 61 CURRENTLY
APPROVED TEST HOLES, SEE
ATTACHED DOCUMENTATION.
SITES MAY HAVE TO CHANGE
TO MEET ON SITE WASTE
WATER CRITERIA

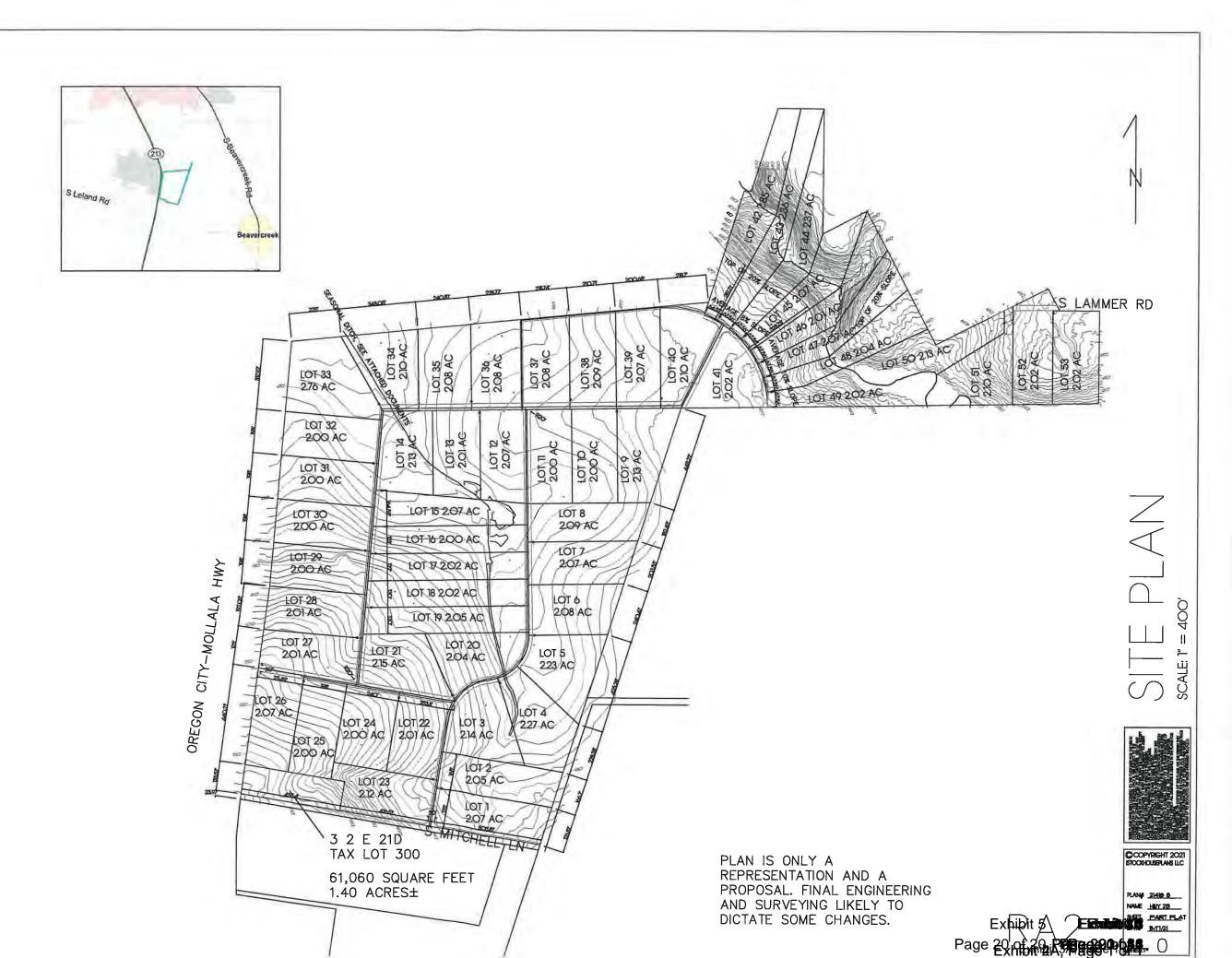
WATER: CLACKAMAS RIVER, NEW MAIN TO RUN UNDER STREETS

POWER: UNDERGROUND IN PUE AND PRIVATE STREETS, PEDESTALS AS NOTED

ALL ROADS TO BE 30' WIDE IN A PRIVATE ACCESS EASEMENT AS SHOWN. ALL RADII TO BE 20'. ALL ACCESS WILL BE REVIEWED BY ENG STAFF AND FIRE DEPT TO MEET INGRESS/EGRESS REQMTS. CLACKAMAS CO FIRE TRUCK TURNING AS NOTED BELOW:



NO EXISTING STRUCTURES TO REMAIN. ALL NEW STRUCTURES WILL MEET COUNTY ZONING CODE ACRITERISA. TO System



21418 S HWY 213 3 2 E 21 TAX LOT 200

3,621,961 SQUARE FEET 83.15 ACRES±

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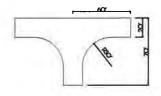
111.11 ACRES TOTAL
RRFF5 ZONING, MIN LOT SIZE 2
AC
111/5 = 22 LOTS ALLOWED
22 LOTS PROPOSED.

UTILITIES:
SEPTIC. 61 CURRENTLY
APPROVED TEST HOLES, SEE
ATTACHED DOCUMENTATION.
SITES MAY HAVE TO CHANGE
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WATER CRITERIA

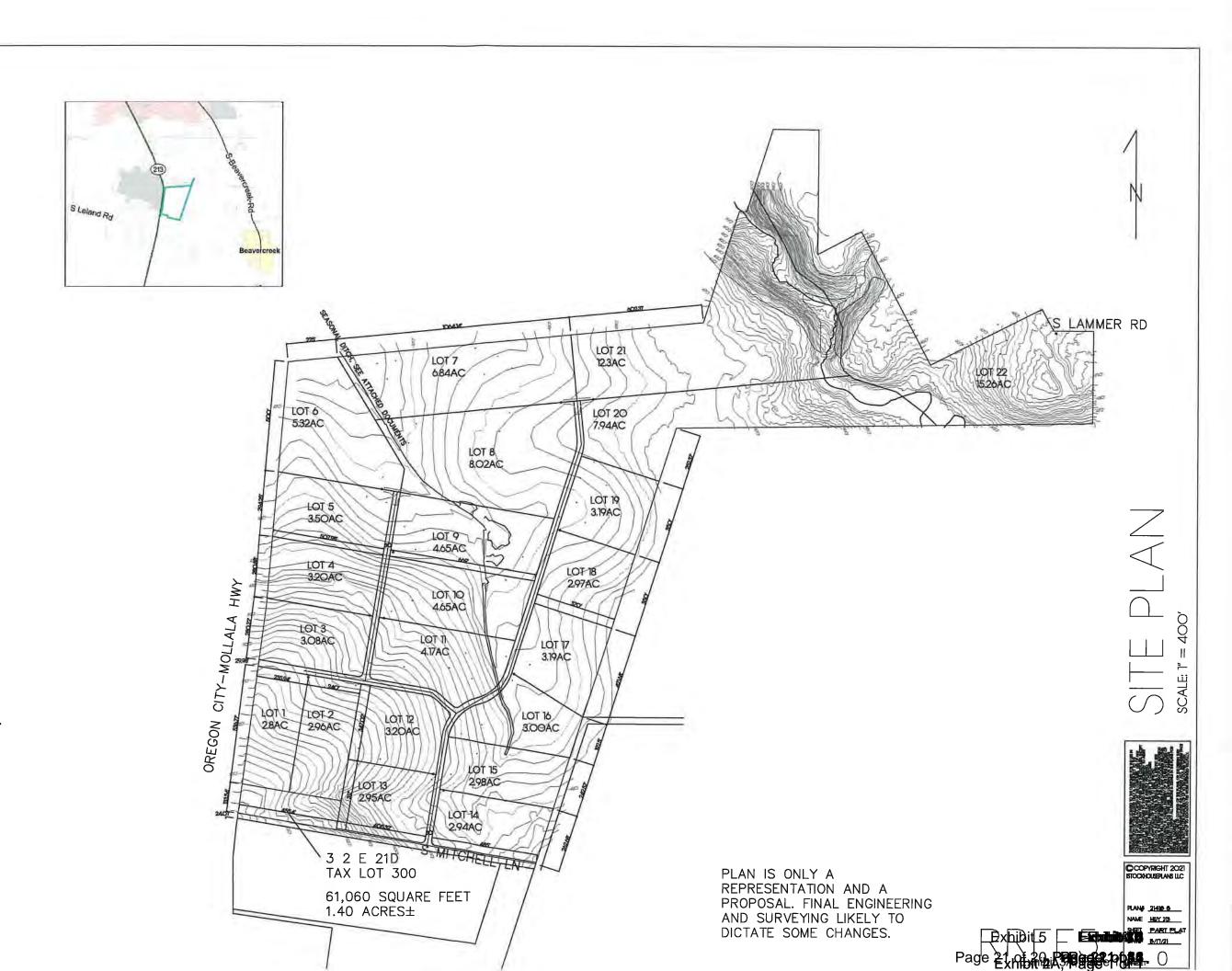
WATER: CLACKAMAS RIVER, NEW MAIN TO RUN UNDER STREETS

POWER: UNDERGROUND IN PUE AND PRIVATE STREETS, PEDESTALS AS NOTED

ALL ROADS TO BE 30' WIDE AS PUBLIC OR IN A PRIVATE ACCESS EASEMENT AS SHOWN. ALL RADII TO BE 20'. ALL ACCESS WILL BE REVIEWED BY ENG STAFF AND FIRE DEPT TO MEET INGRESS/EGRESS REQMTS. CLACKAMAS CO FIRE TRUCK TURNING AS NOTED BELOW:



NO EXISTING STRUCTURES TO REMAIN. ALL NEW STRUCTURES WILL MEET COUNTY ZONING CODE CRITERIA.





CEREGHINO SUBDIVISION TRAFFIC IMPACT STUDY

CLACKAMAS COUNTY, OREGON

EXPIRES: 12/31/2021

PREPARED FOR: Jessey Cereghino

PREPARED BY: Michael Ard, PE Ard Engineering

DATE: May 20, 2021

21370 SW Langer Farms Parkway, Suite 142, Sherwood, OR 97140 - (503)862-6960



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EXECUTIVE SUMMARY

- 1. Two tax lots located on the east side of Oregon Highway 213 immediately north of S Mitchell Lane in Clackamas County are proposed for a zone change and subsequent residential development. The site will take access via S Mitchell Lane, which intersects Highway 213.
- 2. Upon completion of the proposed development, the subject property is projected to generate 36 site trips during the morning peak hour, 49 trips during the evening peak hour, and 462 daily trips.
- 3. Based on the zone change analysis, the proposed change to RA-2 zoning could result in a net increase of up to 33 trips during the morning peak hour, 43 trips during the evening peak hour, and 416 additional daily trips as compared to the existing FF-10 zoning.
- 4. Based on the operational analysis, the study intersections are projected to operate acceptably per ODOT and Clackamas County standards through 2023 either with or without the addition of site trips from the proposed development. No operational mitigations are necessary or recommended in conjunction with the proposed development.
- 5. Based on the zone change analysis, the study intersection is not projected to meet ODOT's performance target under year 2036 traffic conditions either with or without the addition of site trips from the proposed zone change. If a southbound left-turn lane is provided on the Highway 213 approach to Mitchell Lane in conjunction with the proposed zone change, intersection operation is projected to improve as compared to background conditions.
- 6. Based on the queueing analysis, it is recommended that a storage length of 100 feet be provided for the future southbound left-turn lane on Highway 213 at Mitchell Lane.
- 7. An examination of crash data for the most recent five years shows no significant crash trends that may be indicative of design deficiencies. The intersection crash rate was determined to be well below the 90th percentile crash rate for similar intersections in Oregon, and the severity of the reported crashes was relatively low. No specific crash mitigations are recommended.
- 8. Based on the warrant analysis, no new traffic signals are recommended.
- 9. A left-turn lane is projected to be warranted and is recommended for installation on the southbound Highway 213 approach to Mitchell Lane in conjunction with the proposed development.
- 10. A right-turn lane is currently warranted on the northbound Highway 213 approach to Mitchell Lane. The proposed development is not projected to impact the need for this turn lane.
- 11. The proposed development will meet the requirements of Oregon's Transportation Planning Rule provided that a southbound left-turn lane is required as a condition of the proposed zone change. The turn lane should be installed prior to occupancy of the proposed residential subdivision.



PROJECT DESCRIPTION & LOCATION

INTRODUCTION

A residential development and associated zone change is proposed for two tax lots in Clackamas County. The subject properties have a total area of approximately 110 acres and are currently zoned FF-10. Under the proposed plan, the properties would be rezoned to RA-2, and the site would be developed with 49 lots for residential homes. It should be noted that a creek divides the site, and since the creek will not have any form of roadway crossing the proposed development plan, this analysis focuses only on the portion of the property on the west side of the creek. This portion of the property will take access exclusively via S Mitchell Lane, which intersects Oregon Highway 213 approximately one quarter mile north of S Leland Road.

The subject property is proposed for residential development. This report addresses the potential transportation impacts of the proposed development at the anticipated time of project completion as well as the impacts of the proposed zone change at the long-range planning horizon. Based on discussions with Clackamas County and ODOT staff, the study consists of an operational and safety analysis conducted for the intersection of Oregon Highway 213 at S Mitchell Lane under existing and future development scenarios.

The purpose of this analysis is to determine whether the surrounding transportation system is capable of safely and efficiently supporting the proposed use and to identify any necessary improvements and mitigations.

SITE LOCATION AND STUDY AREA DESCRIPTION

The project site comprises two parcels, tax lots 32E2100200 and 32E2200200. They have a combined area of 110.3 acres and are currently zoned FF10. The properties are located on the east side of Oregon Highway 213 north of S Mitchell Lane in Clackamas County. The site is surrounded by the existing Stone Creek Golf Club immediately to the east, the Grand View Baptist Church and small commercial uses along the highway to the south, and a mixture of low-density residential and undeveloped properties.

The subject property will take primary access via S Mitchell Lane, which intersects Oregon Highway 213.

Oregon Highway 213 (Cascade Highway South) is classified by the Oregon Department of Transportation as a District Highway. At the Mitchell Lane intersection, it has one through lane in each direction. It has a posted speed limit of 55 mph in the site vicinity.

S Mitchell Lane is classified by Clackamas County as a Local street. It has a two-lane cross-section along the site frontage, with one through lane in each direction and no centerline striping.



EXISTING CONDITIONS

The intersection of Oregon Highway 213 at S Mitchell Lane is a T-intersection operating under stop control. Through traffic traveling along Highway 213 is free-flowing, while vehicles approaching via S Mitchell Lane are required to stop and yield to through traffic prior to entering Highway 213. Each approach has a single, shared lane for all turning movements.

A vicinity map displaying the project site, vicinity streets, and study intersection including lane configurations is provided in Figure 1 on page 6.

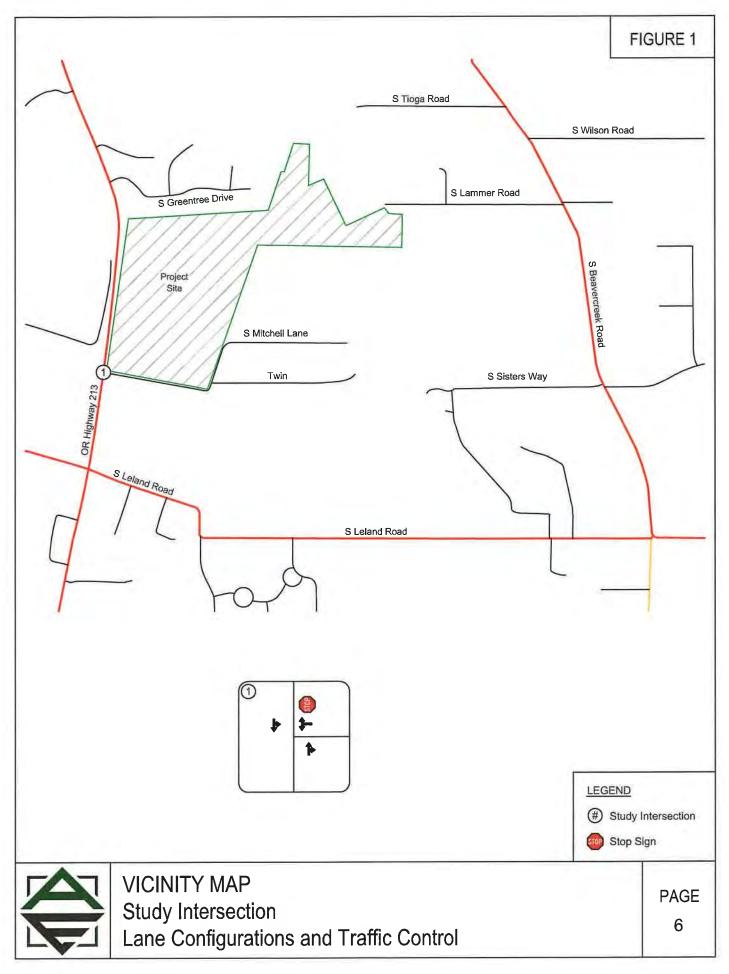
TRAFFIC COUNT DATA

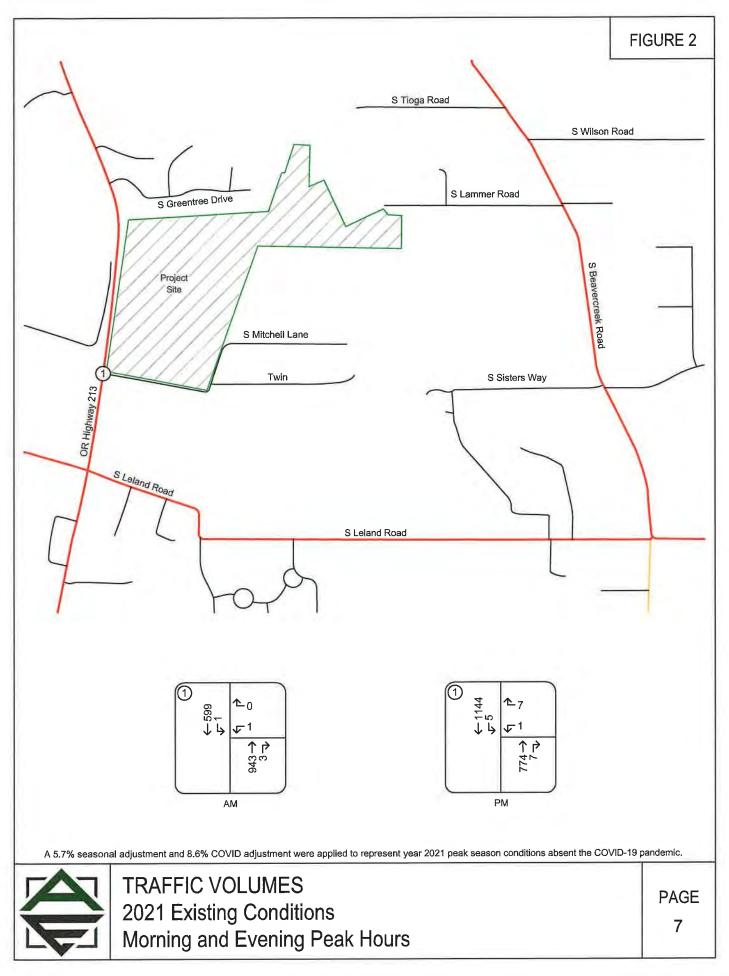
Traffic counts were conducted at the intersection of Oregon Highway 213 and S Mitchell Lane on Thursday, April 8, 2021 from 7:00 to 9:00 AM and from 4:00 to 6:00 PM. Data was used from the highest-volume hour during each analysis period.

The Oregon Department of Transportation (ODOT) requires that analysis be conducted for peak-season conditions, with the analyzed traffic volumes based on 30th-highest hour conditions. The analysis therefore requires adjustment of the measured traffic volumes to represent peak season conditions. ODOT maintains a permanent Automatic Traffic Recorder station on Oregon Highway 213 approximately 3.4 miles south of S Mitchell Lane (ATR 03-020, Mulino). This station tracks monthly variations in traffic volumes along the highway corridor. Based on the data, the weekday peak traffic volumes occur in August. Accordingly, the April count volumes were increased by 5.7 percent to represent peak season conditions.

In addition to the seasonal adjustment, the measured traffic volumes were adjusted to account for the impact of the COVID-19 pandemic. Using data from ODOT's Observed Statewide Traffic Volume Patterns report for April 2021, a COVID adjustment of 8.57 percent was calculated and applied to the measured turning highway volumes.

Figure 2 on page 7 shows the existing 2021 traffic volumes for the peak season morning and evening peak hours at the study intersections.





Appendix N - South System

Clackamas County Planning and Zoning Division Department of Transportation and Development

Development Services Building 150 Beavercreek Road | Oregon City, OR 97045 503-742-4500 | zoninginfo@clackamas.us www.clackamas.us/planning

NOTICE OF INCOMPLETE APPLICATION

FILE NUMBER: Z0232-21-ZAP, Z0233-21-SL

APPLICATION TYPE: Zone Change and Subdivision

STAFF CONTACT: Mahrens@clackamas.us; Bblessing@clackamas.us

DATE OF APPLICATION SUBMITTAL: May 24th, 2021

180 DAYS FROM DATE OF APPLICATION SUBMITTAL: November 20th, 2021

DATE DEEMED INCOMPLETE: June 15th, 2021

DATE OF CERTIFIED MAILING OF THIS NOTICE: June 16th, 2021

MISSING INFORMATION REQUIRED FOR A COMPLETE APPLICATION, For the combined Zone Change and Subdivision applications please provide the following:

- 1. <u>Statewide Planning Goals Consistency</u>. Per Zoning and Development Ordinance (ZDO) section 1202 and 1307.07(C)(1)(c), please address consistency with all applicable Statewide Planning Goals, with particular attention paid to the following:
 - (a) Addressing Goal 6 regarding air, water, and land resources quality. See #2 below regarding the Wetland delineation report, which can be used to address applicable sections of this Statewide Planning Goal and Comprehensive Plan Chapter 3
 - (b) Addressing Goal 14 regarding urbanization and urban uses in rural areas. No exception to Statewide Planning Goal 14, urbanization, was proposed in your application. By definition, all land outside an acknowledged UGB and not the subject of an exception to Goal 14 is "rural" land. Please explain why the proposed zone change and associated subdivision on the subject rural properties is still a "rural" and not an "urban" use requiring a Goal 14 exception. For a complete application you would need to provide qualitative and quantitative evidence sufficient enough to reach a reasonable conclusion about why a Goal 14 exception is not required as part of your proposed use, and specifically address why the proposed use is not an urban use on rural land. Please refer to OAR 660-004-0040 and OAR 660-004-010(1)(d)(D).
 - (c) Addressing Goal 12, Per Oregon Department of Transportation's (ODOT) attached email, in order to comply with the Transportation Planning Rule and Goal 12, the applicant will need to demonstrate constructability of the proposed installation of the left turn lane. As such, to complete the application the applicant will need to show that the left turn lane can be constructed within the existing public right of way. As such, please prepare a conceptual design layout of the proposed southbound left turn lane on OR 213 consistent with ODOT's Highway Design Manual. The conceptual layout should clearly identify the existing right of way.

Z0232-21-ZAP and Z0233-21-SL Incomplete Application Notice

Exhibit 5 Exhibits

Page 249 012 (Page 249 014)

- (d) Addressing multiple Statewide Planning Goals, Please also address OAR 660-012-065, Transportation Improvements on Rural Lands, and explain why the transportation improvements recommended in the submitted traffic analysis and those required by the County and ODOT would not necessitate a Goal Exception.
- 2. Wetland Delineation. The property contains regulatory wetlands onsite per the Department of State Lands statewide wetland mapper. Given the presence of regulatory wetlands onsite, a wetland delineation by a qualified consultant that meets the requirements of OAR 141-090-0005 to 0055 would be required to complete the subdivision application per Statewide Planning Goal 6, Policy 25 of Chapter 3 of the Comprehensive Plan, and ZDO Section 1307.07(C)(1)(c). Please also include the delineated wetland(s) and any associated significant vegetation on the site plans for the proposed subdivision per the requirements of 1105.02(A) 14 and 20 (see No. 3 below).
- 3. <u>Revised Preliminary Plat Site Plan.</u> Please submit a proposed site plan for each zone change scenario (RA2 and RRFF5) showing show the location of the following:
 - a. Existing and proposed septic systems as verified by Septic Statements of Feasibility/Site Evaluations, the 100' well radius (if wells are proposed).
 - b. The location of the delineated wetland(s) and any associated significant vegetation on the site plans for the proposed subdivision per the requirements of 1105.02(A) 14 and 20.
 - c. Diagrams, locations, dimensions, grade, etc. of all adjacent, existing, and proposed roadways per ZDO section 1105.02(A) 10, 11, 12, 15, 16 and 18,. Please be aware that the proposed roadways will need to be designed to meet the standards of ZDO section 1107.01A and Comprehensive Plan Ch.5 Figure 5-2a showing rural road cross sections. Normally applicants submit cross sections to meet these submittal requirements, however, cross sections are not an explicit requirement for completeness.
 - d. Existing and proposed utility lines and facilities.
- 4. <u>Septic Evaluations.</u> Only 11 septic evaluations were submitted, please submit the septic evaluations for the lots proposed both under the RA2 zone change scenario as well as the RRFF5 zone change scenario, per ZDO section 1006.05.
- 5. <u>Engineering statement of feasibility</u>. Please submit a statement of feasibility from our engineering department for the proposed surfacewater/storm water management of the site per ZDO Section 1006.06.
- 6. <u>Stormwater management plan</u>. Please submit a stormwater management plan per the Roadway standards of Ch.4
- 7. Zoning and Development Ordinance Development Standards 1000 section. Per policy 25 of Chapter 3 of the Comprehensive Plan please address ZDO sections 1002.03, Trees and Wooded Areas, 1002.04 River and Stream Corridors, and 1002.01 regarding steep slopes.

Exhibit 5 Exhibit 5 Page 250 nf 2020 2020 2020

Appendix N - South System

<u>IMPORTANT</u>

Your application will be deemed complete, if, within 180 days of the date the application was first submitted, the Planning Division receives one of the following:

- 1. All of the missing information; or
- 2. Some of the missing information and written notice from you (the applicant) that no other information will be provided; or
- 3. Written notice from you (the applicant) that none of the missing information will be provided.

If any one of these options is chosen within 180 days of the date of the initial submittal, approval or denial of your application will be subject to the relevant criteria in effect on the date the application was first submitted.

Z0232-21-ZAP and Z0233-21-SL Incomplete Application Notice

Exhibit 5 **Exhibit 5** Page 251 of 2012 **Page 355 1765**

NOTICE

Your application will be considered <u>Void</u> if, on the 181st day after the date the application was first submitted, you have been mailed this notice and have not provided the information requested in Options 1 – 3 above. In this case, no further action will be taken on your application.

Applicant or authorized representative, please check one of the following and return this notice to: <u>Clackamas County Planning Division; 150 Beavercreek Road, Oregon City, Oregon, 97045</u>

	I am submitting the required information (attached); or.		
	I am submitting some of the information reinformation will be submitted; or	equested (attached) and no other	
	I will not be submitting the requested infor submitted for review and decision.	ng the requested information. Please accept the application as and decision.	
Sig	ned	Date	
 Prir	it Name		

Archived: Tuesday, June 15, 2021 4:24:20 PM

From: HAWKINS Kate Sent: Tue, 15 Jun 2021 13:37:33

To: Ahrens, Melissa

Cc: TAYAR Abraham * Avi; DANIELSON Marah B Subject: RE: Z0232-21-ZAP and Z0233-21-SL

Sensitivity: Normal

\f0Warning: External email. Be cautious opening attachments and links.

Melissa,

Thank you for taking the time to meet with our team yesterday. Following up on our conversation, I am including our written comments below. Please let us know if you have any questions or concerns.

ODOT has reviewed the Traffic Impact Study (TIS) prepared by ARD Engineering dated May 20, 2021 for the proposed zone change and subdivision at 21418 S Hwy 213. The TIS demonstrates that a left turn lane is projected to be warranted and recommends installation on the southbound OR 213 approach to Mitchell Lane in conjunction with the proposed development. The TIS concludes that, "The proposed development will meet the requirements of Oregon's Transportation Planning Rule provided that a southbound left-turn lane is required as a condition of the proposed zone change. The turn lane should be installed prior to occupancy of the proposed residential subdivision." ODOT agrees with the conclusion that the left turn lane is necessary to meet the requirements of the Transportation Planning Rule. The left lane is also needed to mitigate safety concerns with high travel speeds and increase in left turning traffic.

In order to comply with the Transportation Planning Rule, the applicant will need to demonstrate constructed installation of the left turn lane. As such, the applicant will need to show that the left turn lane can be constructed within the existing public right of way. If additional right of way is needed, the applicant should be required to acquire it as part of the land use decision for the zone change. Therefore, as part of the completeness review ODOT is requesting the County require the applicant to prepare a conceptual design layout of the proposed southbound left turn lane on OR 213 consistent with ODOT's Highway Design Manual. The conceptual layout should clearly identify the existing right of way.

Thank you,

Kate (Wihtol) Hawkins, AICP

Associate Transportation Planner

ODOT Region 1

kate.w.hawkins@odot.state.or.us

(503) 731 - 3049

she • her • hers

From: Ahrens, Melissa < MAhrens@clackamas.us>

Sent: Thursday, June 3, 2021 3:34 PM

To: RODRIGUEZ Myriam * Marcela < Marcela .RODRIGUEZ@odot.state.or.us >; TAYAR Abraham * Avi < Abraham .TAYAR@odot.state.or.us >

Ce: Blessing, Ben ">Blessing@clackamas.us">"Blessing@cl

Subject: Z0232-21-ZAP and Z0233-21-SL

\cbpat7This message was sent from outside the organization. Treat attachments, links and requests with caution. Be conscious of the information you share if you respond.

Hello Marcela and Avi,

We wanted to touch base with you regarding a recent application submittal we have received for a zone change and associated subdivision at 21418 s hwy 213 (tax lots 32E21 00200), totally 111 acres. The proposed zone change is for either an RRFF5 zone (and associated 22 lot subdivision) or an RA2 zone (and associated 53 lot subdivision). The application was recently submitted and we are still doing our completeness review for legal filing purposes. As part of that review, our County engineering department (Christian Snuffin) reviewed their traffic study for completeness as part of the zone change application. When just considering the County transportation network, the traffic study may be complete, however, we wanted to check in with you since it appears most of the impacts would be to ODOT facilities. Could you take a look at the submitted traffic study (see attached application) and let us know if you would want it to include anything else for purposes of (1) addressing the transportation planning rule/Goal 12 consistency, as per transportation planning rule OAR 660-12 and (2) addressing that the safety of the transportation system is adequate to serve the level of development anticipated by the proposed zone change and that the transportation system is adequate with approval of the proposed zone change.

At this stage we are just reviewing the application for completeness, however, once it is filed and we are preparing our staff recommendation we can start to look at and consider any comments or suggested conditions of approval that you may want reviewed. If it would be easier to set up a zoom meeting at any point to coordinate feel free to let me know and I can set something up. Ben Blessing (cc-ed) and I are working on these application together, with Ben focusing more on the subdivision component. If possible, due to our completeness review timeline it would be appreciated if you could get back to us by next week. Thank you!

Melissa

Melissa Ahrens

Senior Planner

Clackamas County Planning and Zoning Division

150 Beavercreek Road

Oregon City, OR 97045

MAhrens@co.clackamas.or.us

Direct Ph: 503-742-4519 I Fax: 503-742-4550

To help keep the public and staff safe during the COVID-19 pandemic, we are offering comprehensive services by phone, email and online.

- $\therefore \chi \beta \pi \alpha \tau 11 \bullet \text{ Remote permitting, submissions, approval and inspection services.}$
- ∴χβπατ11• To ask general questions or find out which division can best meet your needs, call 503-742-4400 or email dtdcustomerInfo@clackamas.us
- $\therefore \chi \beta \pi \alpha \tau 11 \bullet \underline{\text{Connect with staff by phone or email}} \textbf{8 a.m.} \textbf{4:00 p.m.}, \textbf{Monday Thursday and 8 a.m.} \textbf{3 p.m.}, \textbf{Friday and 8 a.m.} \textbf{3 p.m.}, \textbf{5 p.m.}, \textbf{6 p.m.},$
- $\therefore \chi \beta \pi \alpha \tau 11 \bullet \text{ Visit with staff in person using Zoom} \ (\underline{\text{schedule an appointment}}) : \textbf{9 a.m. to 2 p.m., Monday} \textbf{Thursday}$
- Beginning June 22, our Development Services lobby is now open limited hours: 9 a.m. to 2 p.m., Monday Thursday

Check our webpage for updates on service hours and related issues:

- Updates on Development Services hours and related issues
- Information about the status of other county departments

Thank you, and we appreciate your understanding during this challenging time

The Clackamas County Department of Transportation and Development is dedicated to providing excellent customer service. Please help us to serve you better by giving us your <u>feedback</u>. We appreciate your comments and will use them to evaluate and improve the quality of our public service.

Spam Email Phishing Email

Exhibit 5 **Exhibit 5**Page 254 152 (**PR) 1984 1984**

Memorandum

To: Melissa Ahrens

Senior Planner

Clackamas County Planning and Zoning Division

From: Garrett H. Stephenson

Date: November 13, 2021

Subject: Highway 213 Zone Change; Applicability of Goal 14 and Response to Zone

Change Criteria (Clackamas County Casefile No. Z0232-21-ZAP)

File No.: 136370.265303

This memo evaluates and addresses the applicability of Goal 14 to the Zone Change application by Jessey Cereghino for a zone change on two parcels currently zoned FF-10 (identified as tax lots 32E2100200 and 32E2200200).

1. The Application does not require a Goal 14 Exception.

The Property is zoned FF-10 and is designated "Rural" on the Comprehensive Plan map. Pursuant to County Plan policy 4.MM, "areas may be designated Rural if they are presently developed, built upon, or otherwise committed to sparse settlement or small farms with limited, if any, public services available." FF-10 is one of three zones that implement the Rural Plan designation; the other zones include Rural Area Residential 2-Acre (RA-2) and Rural Residential Farm Forest 5-Acre (RRFF-5).

The Application proposes a zone change from FF-10 to RA-2, facilitating a reduction in the minimum parcel size from ten acres to two acres. The Application does not propose to change the Property's current Rural Plan designation. As the Rural Comprehensive Plan designation includes three different parcel sizes (FF-10, RRFF-5, and RA-2), the Application is a "zone change" only and does not require a Comprehensive Plan amendment. The selection of appropriate parcel size is based on the factors listed in Policy 4.MM.4 and a change from a larger parcel size to the RA-2 zoning district is subject to Policy 4.MM.11.1 and its constituent criteria, which are addressed below.

Under OAR 660-004-0040, the minimum allowable lot size within a rural residential area is two acres. Establishment of lot sizes *smaller* than this requires an exception to Goal 14. The Hearings Officer can find that Goal 14 exception is not required for this application, for three reasons:

First, the Application includes a subdivision of the Property into 53 lots equal or greater than the two-acre minimum lot size in OAR 660-004-0040.

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Second, the resultant parcels will remain Rural as defined in the Plan for the following reasons:

- The Application will not require new urban levels of service. Public water lines are already in place in the area, including a 12-inch main line in Highway 213 and a 6-inch water line in S Lammer Road. Each two-acre lot will be served with a separate septic system. As explained below, the proposed two-acre lots will be substantially larger than the vast majority of existing lots and parcels in the area, which will allow the lots to retain a comparatively rural character.
- The Application will not adversely affect the ability of the nearby Metro UGB to serve its "urbanization function" because it will maintain a level of rural character on the Property, especially when compared to existing lots in the vicinity. At full development, the Property will support 53 new dwellings in a total parcel area of 111 acres, or approximately 0.47 dwellings/acre. On the other hand, the County's lowest-density urban residential zone allows a maximum of 1.45 dwellings/acre, nearly three times more than the Application's proposed density level. As such, these Properties will remain rural in character and function, and will not diminish the UGB's distinction between urban and rural areas. And, even if each home is occupied by a family, this level of density will not be enough on its own to create a demand for new supportive urban development (such as new schools and stores), especially since those services are already available in nearby Oregon City and Beaver Creek.
- The proposed two-acre lots are not urban lots. They are large enough to support separate septic systems and allow small-scale agriculture. Also, they cannot be further divided pursuant to OAR 660-004-0040.

Finally, as a matter of law, a Goal 14 exception is not required for application of a rural residential zoning district that was in effect on October 4, 2000. OAR 660-004-0040(6)(a). The RA-2 zoning district has been in existence since 1981 and has been one of the zones that implement the Rural Plan designation since that time. Application of such existing zones to other Rural areas is not itself subject to a Goal 14 exception requirement. *See Oregon Shores Conservation Coalition v. Curry County*, LUBA Nos. 2006-218 and 2006-219 (2007).

2. Response to Zone Change Approval Criteria

The approval criteria for a zone change are set forth in ZDO 1202.03. These are addressed below:

"1202.03 GENERAL APPROVAL CRITERIA A zone change requires review as a Type III or IV application pursuant to Section 1307, Procedures, and shall be subject to the following standards and criteria:

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A. The proposed zone change is consistent with the applicable goals and policies of the Comprehensive Plan."

RESPONSE: Goals and policies applicable to the Application are listed below, followed by the Applicant's explanation of how the Application is consistent with each.

Chapter 2, Citizen Involvement

RESPONSE: Chapter 2 implements statewide land use planning Goal 1 and includes goals and policies related to citizen involvement. There are no goals or policies directly applicable to a quasi-judicial review of land use applications for specific development proposals. However, the Hearings Officer can find that the Application is consistent with Chapter 2 and by extension, Goal 1, through the Type III Hearing Process.

Chapter 3, Natural Resources and Energy

RESPONSE: Chapter 3 implements Statewide Planning Goals 5, 6 and 13. Although there are no goals or policies in Chapter 3 that directly address zone changes, the Hearings Officer can find that the Application is consistent following goals and policies:

Water Resources Goals

- Maintain or improve the quality of rivers and streams.
- Protect and enhance wetlands as a valuable source of groundwater recharge, wildlife habitat, and stormwater drainage control.

Water Resources Policies

- 3.A.2 Apply erosion and sediment reduction practices in all river basins to assist in maintaining water quality. Existing riparian vegetation along streams and river banks should be retained to provide fisheries and wildlife habitat, minimize erosion and scouring, retard water velocities, and suppress water temperatures.
- 3.A.3 For areas that are outside both the Metropolitan Service District Boundary and the Portland Metropolitan Urban Growth Boundary, require preservation of a buffer or filter strip of natural vegetation along all river and stream banks as shown on the adopted Water Protection Rules Classification (WPRC) Maps.

RESPONSE: The Hearings Officer can find that the Application is consistent with the above-listed goals and policies because the proposed zone change will not change the stream and riparian protection requirements already required for any development on the Property. The proposed subdivision plan also demonstrates how lots that are near the creek and drainage ditch have been designed to provide an ample setback of dwellings from these resources.

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3.F Wetlands Policies 3.F.1 For areas that are outside both the Metropolitan Service District Boundary and the Portland Metropolitan Urban Growth Boundary, prevent disturbance of natural wetlands (marshes, swamps, bogs) associated with river and stream corridors. Adjacent development shall not substantially alter normal levels or rates of runoff into and from wetlands. Site analysis and review procedures specified in the Open Space and Floodplains section of the Land Use chapter shall apply.

RESPONSE: As explained above, the proposed zone change will not alter the wetland protections required under the ZDO. The proposed subdivision will be required to meet applicable open space, wetland, and floodplain regulations to the same extent under the proposed RA-2 zone as it would under the FF-10 zone. The Hearings Officer can find that the Application is consistent with this policy.

3.K.5 Minimize adverse wildlife impacts in sensitive habitat areas, including deer and elk winter range below 3,000 feet elevation, riparian areas, and wetlands.

RESPONSE: Per correspondence with County staff, there are no sensitive habitat areas mapped on the Property. **Exhibit 1.** The Hearings Officer can find that this policy does not apply.

3.L Natural Hazards Policies

3.L.2 Prevent development (structures, roads, cuts and fills) of landslide areas (active landslides, slumps and planar slides as defined and mapped by the Oregon Department of Geology and Mineral Industries, DOGAMI) to avoid substantial threats to life and property except as modified by 3.L.2.1. Vegetative cover shall be maintained for stability purposes and diversion of stormwater into these areas shall be prohibited. 3.L.2.1 Allow mitigation of identified landslide hazards based on established and proven engineering techniques, and related directly to an approved specific plan that avoids adverse impacts (see Land Use Chapter). Developers should be made aware of liability in such cases for protection of private and public properties from damage of any kind.

RESPONSE: There are no known natural hazards or landslide hazards mapped on the Property. The only steep slopes are located near the northeast corner; however, the Subdivision Application explains how the area can be developed without disturbing any hillside with a slope of 20 percent or greater. The Hearings Officer can find that the Application is consistent with this policy.

Chapter 4, Land Use

Rural Goals

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- *To provide a buffer between urban and agricultural or forest uses.*
- To perpetuate the rural atmosphere while maintaining and improving the quality of air, water, and land resources.
- To conserve open space and protect wildlife habitat.

RESPONSE: These goals are implemented through the Rural zoning designations discussed in the Chapter 4, below. As the Property is already designated as Rural and will remain so if the Application is approved, the Hearings Officer can find that the Application is consistent with the above goals.

4.MM Rural Policies

4.MM.1 Areas may be designated Rural if they are presently developed, built upon, or otherwise committed to sparse settlement or small farms with limited, if any, public services available.

RESPONSE: The Property is within an area dominated by rural residential uses. Public water service is available, but the Property does not have public sewer. As explained in more detail below, the proposed two-acre lots will be substantially larger than virtually all existing lots in the vicinity, meaning that the Property will be consistent with the "sparse settlement" quality identified in 4.MM. The Hearings Officer can find that the Application is consistent with this policy.

4.MM.2 Designation of additional Rural lands shall be based on findings that shall include, but not be limited to [...]:

RESPONSE: The Property is already designated as Rural land. This policy does not apply.

4.MM.3 Areas impacted by major transportation corridors, adjacent to urban growth boundaries or areas designated Rural, and for which public services are committed or planned shall be given priority in designating additional Rural areas.

RESPONSE: The Property is already designated as Rural. This Policy does not apply.

4.MM.4 Residential lot sizes shall be based upon:

4.MM.4.1 Parcelization;

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RESPONSE: The Property is located in an area dominated by lots smaller than two acres. Within a ¼ mile of the Property, 72 percent of tax lots are smaller than two acres. **Exhibit 2**. Within ½ mile of the Property, 80 percent of tax lots are smaller than two acres. **Exhibit 3**.

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Senior Planner

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Within 1 mile of the Property, 85 percent of tax lots are smaller than two acres. **Exhibit 4**. Given that 85 percent of tax lots within one mile of the Property are smaller than two acres, the Hearings Officer can find that the parcelization factor weighs in favor of application of the RA-2 zone to the Property.

4.MM.4.2 Level of existing development;

RESPONSE: The Project is located within a highly developed area between Oregon City to the north, Mulino to the south, and Beavercreek to the east. This area is dominated by the intersection of Highway 213 and Leland Road (also known as Fishers Corner), directly north of Grand View Christian Academy and directly east of the Stone Creek Golf Club. While not designated as an exception area like Beaver Creek, the Fishers Corner area substantially exceeds the residential development intensity of Beaver Creek. Existing single-family subdivisions are located to the north, south, west, and southwest of the Property; these have typical lot sizes ranging between 8,000 – 20,000 sq. ft. There is a smaller subdivision directly east located on S Lammer Road, comprising ½ acre lots. The area also includes churches, the Stone Creek Golf Course, a distillery, and a veterinary clinic. The Property is located approximately 1.5 miles from Clackamas Community College and about .90 miles from the Metro UGB line. Several other single-family subdivisions are located around Fishers Corner, south of the Property. The Hearings Officer can find that the level of existing development supports application of the RA-2 zone to the Property.

4.MM.4.3 Topography;

The Property consists of two large parcels—a western parcel that abuts Highway 213 and a northeastern parcel that is forested and features an existing creek. The western parcel is gently rolling and entirely devoid of steep slopes. It has very few trees and, aside from the drainage ditch, only a few isolated wetlands. A creek is located on the northeast parcel and some of these banks have slopes in excess of 20 percent. However, the northeast parcel is proposed to be developed by using longer and narrower lots, which will provide both an adequate setback from the banks of the creek as well as adequate buildable areas with mild slopes. No slopes equal to or greater than 20 percent will be developed. Given that the vast majority of the Property has gentle slopes that are easily developed, the Hearings Officer can find that the topography factor supports application of the RA-2 zone to the Property.

4.MM.4.4 Soil conditions;

RESPONSE: This policy does not explain how "soil conditions" factor into residential lot size. As the Property is already designated as Rural, the Hearings Officer can find that soil quality for farming activities is not relevant to lot size. However, the Hearings Officer can find that the soil conditions are appropriate for the proposed lots because the majority of soil on the property, Jory Silty Clay Loam is "well drained" according to the U.S. NRCS, meaning that the soil is capable

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of high infiltration rates necessary to support onsite septic systems and onsite infiltration for two-acre lots. **Exhibit 5**.

4.MM.4.5 Compatibility with the types and levels of available public facilities;

RESPONSE: Public water service is already available within Highway 213 and S. Lammer Road. The proposed two-acre minimum parcel size will be sufficient to support onsite septic systems. In fact, the Applicant has already obtained eleven preliminary onsite disposal evaluations; based on these preliminary evaluations and the soils in the area, the Applicant expects that each lot can be serviced with a standard tank and drainfield system, which can be sited on a two-acre parcel.

4.MM.4.6 Proximity to Unincorporated Communities or an incorporated city; and

RESPONSE: The Property is located within 0.95 miles of the Oregon City city limits and approximately 0.93 miles of the unincorporated community of Beavercreek. In general, the Oregon Land Conservation and Development Commission's (LCDC) rules consider "in proximity" to an incorporated city to be within 3 miles. See OAR 660-033-0130(2)(a), 19(a), 40(b)(E). Further, LCDC's UGB expansion analysis methodology requires municipalities to consider all lands within one mile of cities with populations of 10,000 or more. OAR 660-024-0065. For these reasons, the Hearings Office can find that "in proximity" for purposes of this policy includes properties within one to three miles of the nearest incorporated city or unincorporated community, and consequently, find that this proximity factor supports application of RA-2 zone to the Property.

4.MM.4.7 Capacity and level of service of the road network

The Applicant has conducted a complete traffic impact study ("TIS") that demonstrates the zone change will have no adverse impact on the surrounding transportation system:

"Based on the operational analysis, the study intersections are projected to operate acceptably per ODOT and Clackamas County standards through 2023 either with or without the addition of site trips from the proposed development. No operational mitigations are necessary or recommended in conjunction with the proposed development.

Based on the zone change analysis, the study intersection is not projected to meet ODOT's performance target under year 2036 traffic conditions either with or without the addition of site trips from the proposed zone change. If a southbound left-turn lane is provided on the Highway 213 approach to Mitchell Lane in conjunction with the proposed zone change, intersection operation is projected to improve as compared to background conditions."

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Exhibit 6.

The Hearings Officer can find that the road network capacity factor supports application of RA-2 zone to the Property for three reasons. First, all study intersections will operate acceptably with the projected trip generation from the Project through 2023. Second, the intersection of Highway 213 and Mitchell Lane will not meet 2036 performance targets regardless of the proposed zone change. Finally a southbound left-turn lane provided by the Project will improve the 2036 condition above a no-development scenario.

4.MM.5 Existing large lots should be reduced to meet future rural housing needs prior to expanding the areas designated as Rural.

RESPONSE: This Application is facially consistent with the above policy because it reduces the minimum lot size of existing Rural lands, thereby relieving pressure on other agricultural lands that might otherwise be sought for conversion to Rural lands.

4.MM.6 Areas with marginal or unsuitable soils for agricultural or forest use shall be given a higher priority for conversion to rural development than areas with more suitable soils.

RESPONSE: The Application does not propose conversion of resource-zoned (farm/forest) lands to Rural lands. This policy does not apply.

4.MM.7 Public facilities should be expanded or developed only when consistent with maintaining the rural character of the area.

RESPONSE: The Application does not propose, nor does the proposed subdivision require, expansion of public facilities. This policy does not apply.

4.MM.8 Increased water service to an area shall not be used in and of itself to justify reduced lot sizes.

RESPONSE: The Application proposes reduced lot sizes because the Property is close to the urban growth boundary and because the reduced lot sizes are more consistent with the surrounding lot sizes. Although the project will benefit from the availability of public water, it does not depend on it.

4.MM.11 The Rural Area Residential 2-Acre (RA-2), Rural Residential Farm/Forest 5-Acre (RRFF-5), and Farm/Forest 10-Acre (FF-10) zoning districts implement the goals and policies of the Rural plan designation. These zoning districts shall be applied in Rural areas as follows:

4.MM.11.1 The RA-2 zoning district shall be applied when all the following criteria are met:

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4.MM.11.1.a Parcels are generally two acres or smaller.

RESPONSE: The Property is located in an area dominated by lots smaller than two acres. Within a ¼ mile of the Property, 72 percent of tax lots are smaller than two acres. **Exhibit 2**. Within ½ mile of the Property, 80 percent of tax lots are smaller than two acres. **Exhibit 3**. Within 1 mile of the Property, 85 percent of tax lots are smaller than two acres. **Exhibit 4**. The Hearings Officer can find that the Application is consistent with this Policy.

4.MM.11.1.b The area is significantly affected by development.

RESPONSE: The Project is located within a highly developed area between Oregon City to the north, Mulino to the south, and Beavercreek to the east. It is dominated by the intersection of Highway 213 and Leland Road (known as Fishers Corner), directly north of Grand View Christian Academy and directly east of the Stone Creek Golf Club. Existing single-family subdivisions are located to the north, south, west, and southwest; these have a typical lot sizes ranging between 8,000 – 20,000 sq. ft. There is a smaller subdivision directly east located on S Lammer Road, comprising ½ acre lots. The area also includes churches, the Stone Creek Golf Course, a distillery, and a veterinary clinic. The Property is located approximately 1.5 miles from Clackamas Community College and about .90 miles from the urban growth boundary line. Several other single-family subdivisions are located in the vicinity of Fishers Corner, south of the Property.

The Hearings Officer can find that the Application is consistent with this Policy.

4.MM.11.1.c There are no natural hazards, and the topography and soil conditions are well suited for the location of homes.

RESPONSE: The Property consists of two large parcels—a western parcel that abuts Highway 213 and a northeastern parcel that is largely forested and features an existing creek. The western parcel is gently rolling and entirely devoid of steep slopes. It has very few trees and, aside from the drainage ditch, only a few isolated wetlands. A creek with associated banks is located on the east parcel and some of these banks have slopes in excess of 20 percent. However, the east parcel is proposed to be developed by using longer and narrower lots, which will provide both an adequate setback from the banks of the creek as well as adequate buildable areas with mild slopes. **Exhibit 7**. The Hearings Officer can find that the Application is consistent with this Policy.

4.MM.11.1.d A public or private community water system is available.

RESPONSE: According to comments provided by Clackamas River Water, a 12-inch ductile iron waterline located within S Hwy 213 and a 6-inch steel waterline located within S Lammer Road. **Exhibit 8**. The Hearings Officer can find that the Application is consistent with this Policy.

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4.MM.11.1.e Areas are in proximity or adjacent to an Unincorporated Community or incorporated city.

RESPONSE: The Property is located within 0.95 miles of the Oregon City city limits and approximately 0.93 miles of the unincorporated community of Beavercreek. In general, the Oregon Land Conservation and Development Commission's (LCDC) rules consider "in proximity" to an incorporated city to be within 3 miles. See OAR 660-033-0130(2)(a), 19(a), 40(b)(E). Further, LCDC's UGB expansion analysis methodology requires municipalities to consider all lands within one mile of cities with populations of 10,000 or more. OAR 660-024-0065. For these reasons, the Hearings Office can find that "in proximity" for purposes of this policy includes properties within one to three miles of the nearest incorporated city or unincorporated community, and consequently, find that this proximity factor supports application of RA-2 zone to the Property. For these reasons, the Hearings Officer can find that the Property is "in proximity" to the nearest incorporated city and unincorporated community.

4.MM.11.1.f In areas adjacent to urban growth boundaries, RA-2 zoning shall be limited to those areas in which virtually all existing lots are two acres or less.

RESPONSE: The ZDO defines the word "adjoining" to mean "contiguous or abutting," and includes within that definition the word "adjacent." ZDO 202. Therefore, the correct interpretation of this policy is that it applies to properties that are "contiguous or abutting" (i.e. actually touching) a UGB. As the Property is located approximately .90 miles from the Metro UGB, the Hearings Officer should find that this policy does not apply.

The Hearings Officer can also find that this policy is not applicable because it is not clear and objective as required by ORS 197.307(4). As the Application includes both a zone change and residential subdivision, it is an application for the "development of housing," and therefore is subject only to "objective standards, conditions and procedures." The term "virtually all" is undefined in the ZDO and does not provide a numerical guidepost, meaning it lacks the "objective benchmarks" required for it to apply under ORS 197.307(4). *Warren v. Washington County*, 78 Or LUBA 375, 388-89 (2019).

Finally, if the Hearings Officer finds that this policy is applicable, it can find that it is met. As explained above, within one mile of the Property (the rough distance between the Property and Oregon City's urban growth boundary), 85 percent of all existing lots, including the current Property, are smaller than two acres.

B. If development under the proposed zoning district designation has a need for any of the following public services, the need can be accommodated with the implementation of the applicable service provider's existing capital improvement plan: sanitary sewer, surface water management, and water. The cumulative impact of the proposed zone change and development of other properties under existing zoning designations shall be considered.

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Senior Planner

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RESPONSE: Public water is already available and the lots will rely on onsite septic systems for sewerage. No public stormwater systems will be required because the lots will be large enough to fully infiltrate all runoff on each lot. This criterion does not apply.

C. The transportation system is adequate and will remain adequate with approval of the proposed zone change.

RESPONSE: The Application includes a complete TIS, which includes a Transportation Planning Rule ("TPR") analysis. **Exhibit 6.** The TPR analysis is located on pages 21–23. The trip generation estimate was based on the highest level of density allowed on the Property under the RA-2 zone, which is 55 dwelling units. At this point, the only study intersection expected to be impacted by the Application is on Highway 213 at S Mitchell Road. As Highway 213 is an ODOT facility, the TIS relies on ODOT's mobility standards, which are stated in v/c ratios. In this instance, the target v/c ratio on the Oregon Highway Plan is 0.75. The TIS includes a complete operation analysis using ODOT's Highway Capacity Manual at pg. 18.

The TIS finds that the system is adequate and will remain adequate through 2023 and presumably for some time after that, "either with or without the addition of site trips from the proposed development," and finds that "no operational mitigations are necessary or recommended in conjunction with the proposed development."

The TIS's TPR analysis concludes that the Project will create a significant effect on the existing or planned transportation system (Highway 213) by 2036, but that it can be adequately mitigated.

For the above reasons, the Hearings Officer can find that this criterion is met.

D. Safety of the transportation system is adequate to serve the level of development anticipated by the proposed zone change.

RESPONSE: With respect to safety, the TIS concludes as follows:

"An examination of crash data for the most recent five years shows no significant crash trends that may be indicative of design deficiencies. The intersection crash rate was determined to be well below the 90th percentile crash rate for similar intersections in Oregon, and the severity of the reported crashes was relatively low. No specific crash mitigations are recommended."

As there are no identified safety concerns under the maximum-intensity development scenario assumed by the TIS, the Hearings Officer can find that this criterion is met.

GST

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Stephenson, Garrett H.

From: Hanschka, Steve <SteveHan@clackamas.us>
Sent: Tuesday, October 05, 2021 11:00 AM

To: Stephenson, Garrett H.
Cc: 'DEBLASI Michael * DSL'

Subject: RE: Need help locating County Habitat Maps

Attachments: 03_3s2e21 (1).pdf; zdo704.pdf

Garrett, in this case / location the only potential habitat area at 32E21 00200 regulated by the County would be associated with the stream that flows through the approximate center of the property. However, state stream data shows that fish presences there is unknown and, therefore, it would not be regulated by the applicable Zoning Ordinance Section 704. However, it could still be regulated by the Oregon Dept. of State Lands with staff cc-ed on this email. Thanks.

Steve Hanschka | **Sr. Planner, CFM**Clackamas County Planning & Zoning Division

150 Beavercreek Road | Oregon City, OR 97045 | ☎: 503-742-4512 | ☒: stevehan@clackamas.us Office Hours: Tues.-Fri. 8 am – 6:30 pm

Development Direct is here!! We're excited to launch Development Direct -- our new one-stop digital services hub for Building Codes and Development Engineering. Click here to learn more.

There will be a free community training online webinar on August 24th from 9am to 11am. A link to this training is on the <u>Coming Soon</u> website.

From: Stephenson, Garrett H. [mailto:GStephenson@SCHWABE.com]

Sent: Monday, October 4, 2021 2:57 PM

To: Hanschka, Steve <SteveHan@clackamas.us>
Subject: Need help locating County Habitat Maps

Warning: External email. Be cautious opening attachments and links.

Steve,

You were referred to me by your colleague Glen Hamburg. I am assisting a client with a zone change application for a property located at Highway 213 and Mitchell Lane, about halfway between Oregon City and Molalla. Attached is a tax map showing the property location (the large TL 200 off of Highway 213). One of the zone change criteria requires me to

address whether the property is a listed significant habitat area (as identified by the comprehensive plan). It looks like those maps are no longer available on the website.

Would you mind sending me any significant habitat maps showing this property?

Thanks!

Garrett H. Stephenson

Shareholder

Direct: 503-796-2893 Mobile: 503-320-3715 gstephenson@schwabe.com

Schwabe Williamson & Wyatt

Please visit our COVID-19 Resource page

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32E16B 02509 1/4 Mile Analysis: 32E22 00200 AND 32E21 00200 32F15C 00103 32E16D 01500 01600 Subject Property 32E16D 00802 1/4 Mile Buffer 32E15C 01700 Tax Los within 1/4 mile 32E15D 02300 **Surrounding Lots** 32E16C 00400W1 City Boundaries 32E15D 02200 Lakes & Rivers 32E16C 00490 **RESULTS:** 2E20 0010 202 Total Parcels within Buffer 144 less than 2 ac. (72%) 19 less than 5 ac (9%) 32E22A 00614 38 over 5 ac (19%) 00322 00300 32E23B 00 See attached Spreadsheet for results 32E22 0040 32E22 0040 32E22A 01300 32E22A 01301 32E22 0030 32E22 00600 32E22 00500 32E22D 00100 32E22D 00506 32E22 0070 2,400 1,200 32E22D 00503 32E22D 00200 32E22D 00507 32E21D 00205 32E22D 00501 The information provided was derived from digital databases from Clackamas County's GIS. Although we strive to provide the best data we can, we sometimes use data developed by jurisdictions outside Clackamas County. Therefore, Clackamas County cannot accept any responsibility for any errors, omissions, or positional accuracy, and therefore, there are no warranties which accompany this product. Although information from Land Surveys may have 32E22 00900 been used in the creation of this product, in no way does this product represent or constitute a Land Survey. Users are strongly cautioned to verify all information before making any decisions. 32E22D 00810 Date: 10/13.2020 Drawn By: Ben B 32E22 01100 32E22D 00809 File No. File Path: S:\Planning\CAD-GI\$\GIS\Properties\ Exhibit 5∞

Quarter Mile Analysis

APN	MAPACRES	PARCEL	_NUMBER *	YEARBLT
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32E22 00402			5022409	<null></null>
32E22 00401				1993
32E21D 00205	10.879696		5025157	2015
32E21D 00200	10.639941		889621	2014
32E22D 00506	10.245742		1733725	2015
32E22 00700			891020	1967
32E22A 01002			5033705	2019
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32E22A 01800	2.953272	891501	
32E21DB00500	2.854285	889952	
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32E15C 01500	1.998897	881512	1990
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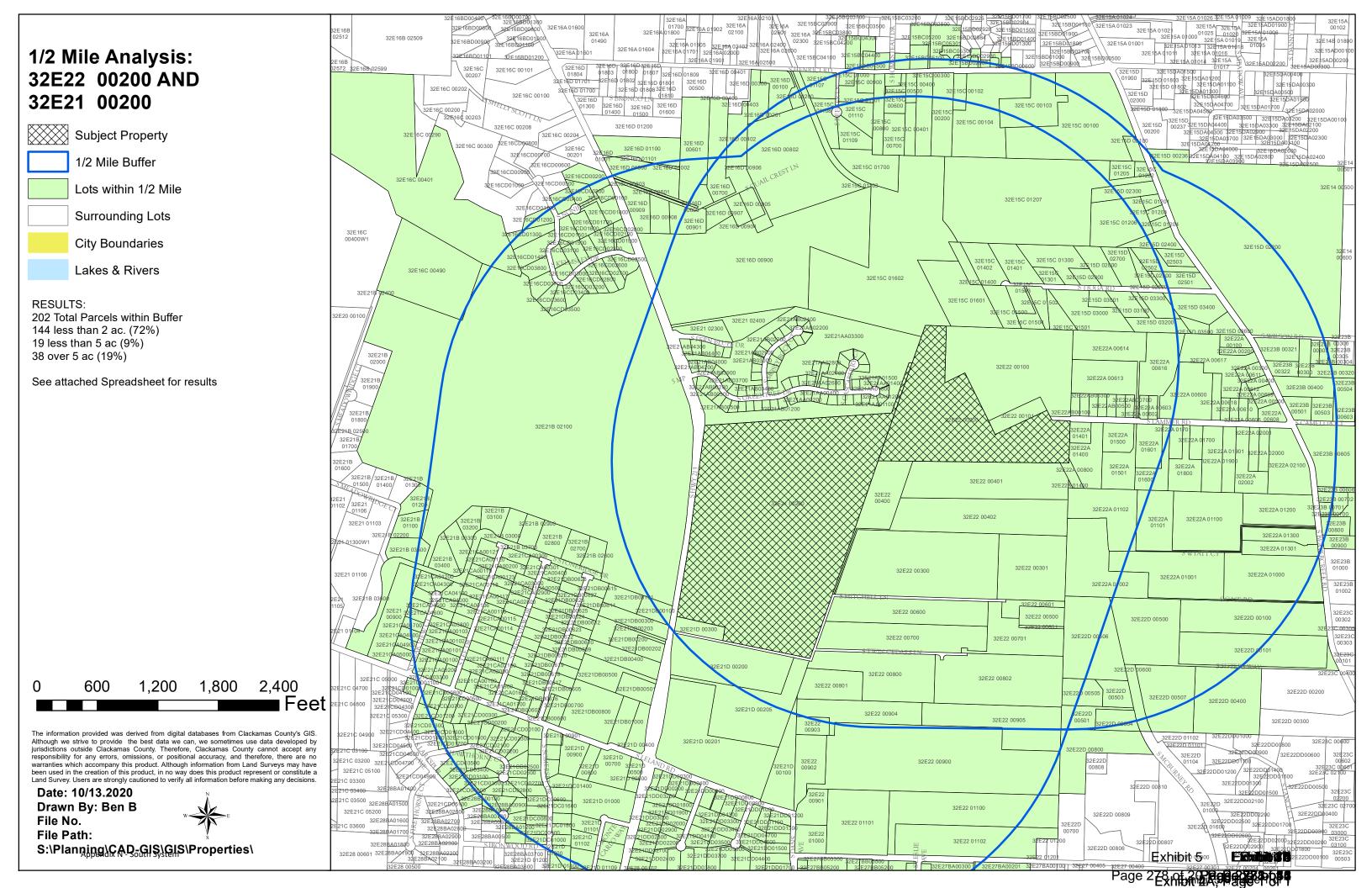
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38 out of 202 parcels greater than 5 acres (19%)

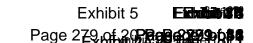
19 out of 202 parcels less than 5 acres (9%)

144 out of 202 parcels less than 2 acres (72%)



Half Mile Analysis

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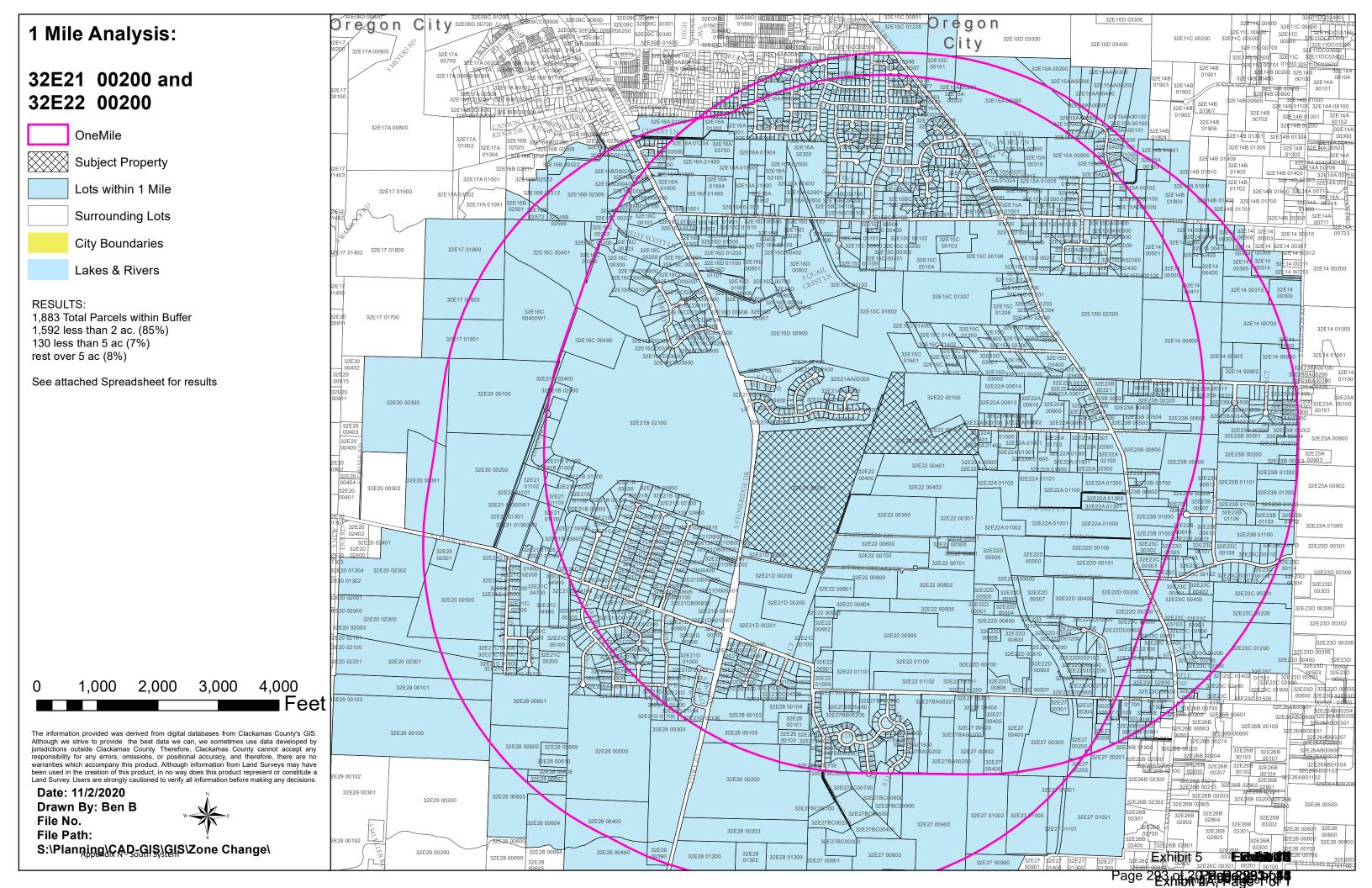
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507 out of 627 lots less than 2 Acres (80 percent)

53 out of 627 lots less than 5 acres (8 percent

Appendix N - South System

67 out of 627 lots greater than 5 acres (12 percent)



One Mile Analysis

APN	MAPACRE!		YEARBLT
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32E27 009			
32E29 001			
32E15D 02			
32E28 005			
32E15A 00			
32E28 002			
32E20 003			
32E20 002			
32E20 001			
32E16C 00			
32E28 012	42.92934	898817	1955
32E16D 00			
32E20 025	39.65314	886768	<null></null>
32E14 006	39.36927	875752	1905
32E16C 00			
32E27 01(35.79473	897088	2015
32E15C 01	34.31722	5002585	<null></null>
32E22 009	32.16069	891066	<null></null>
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32E15C 01	29.79973	881460	<null></null>
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32E20 023	28.9059	886722	<null></null>
32E20 023	28.90585	1543468	1994
32E20 023			
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32E22 003			
32E28 013	21.84192	898826	<null></null>
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32E28 00 ²			
32E22 001			
32E27 010			
32E17 018			
32E27 01(
32E28 006			
32E17 018			
32E27 003			



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32E27 009			
32E23B 00			
32E28 002			
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32E22A 00	0.947938	891253	1977
32E16BD0		883592	1977
32E27 00 1	0.946704	896800	1984

32E23C 00	32E16CD0	0.94444	884243	1973
32E27BB0! 0.941237 898336 1972 32E27BB0! 0.941083 898327 1973 32E15C 01 0.937462 881558 1973 32E14 004 0.932526 875707 1978 32E16CD0 0.930025 883896 1979 32E16CD0 0.928458 884047 1998 32E22DD0 0.927952 891994 <null> 32E16D 00 0.926438 884298 1950 32E2DD0 0.925861 891949 <null> 32E16CD0 0.925861 891949 <null> 32E16CD0 0.9224474 883903 1980 32E22DD0 0.922945 893359 1989 32E16CD0 0.922838 883912 1978 32E16CD0 0.922838 883912 1978 32E22DD0 0.918557 892038 <null> 32E22DD0 0.918557 892038 <null> 32E22DD0 0.918473 893340 1990 32E22DD0 0.918473 893340 1990 32E22DD0 0.918481 891967 <null> 32E16D 01 0.909726 884528 1966 32E16AA0 0.90755 882361 1968 32E21 011 0.906305 886955 1977 32E21DB0 0.903753 892109 1910 32E23B 00 0.899908 892369 1973 32E15D 01 0.893466 881647 1978 32E15D 01 0.893466 881647 1978 32E15D 01 0.889343 881638 1978 32E23B 01 0.879995 892751 1972 32E23C 01 0.878821 893607 <null> 32E23B 01 0.879995 892751 1972 32E23C 01 0.878821 893607 <null> 32E23C 01 0.878821 893607 <null> 32E23B 02 0.865352 881754 1966 32E15D 02 0.865352 881754 1966 32E15D 02 0.865352 881754 1966 32E15D 03 0.836549 892655 <null> 32E21DD0 0.8844527 886811 <null> 32E21DD0 0.884527 886811 <null> 32E21DD0 0.884527 886811 <null> 32E21DD0 0.883896 877251 1972 32E21DD0 0.884527 886811 <null> 32E21DD0 0.833596 877251 1934 32E15D 03 0.836549 882655 <null> 32E15D 04 0.8385896 877251 1934 32E15D 03 0.836549 882655 <null> 32E15D 03 0.835896 877251 1934 32E15D 04 0.835896 877251 1934 32E15D 03 0.835896 877251 1934 32E15D 03 0.835896 877251 1934 32E15D 04 0.835896 877251 1934 32E15D 05 0.835896 877251 1934 32E15D 00 0.8385896 877251 1934 32E15D 00 0.8385896 877251 1934 32E15D 00 0.8385896 877251 1934 32E16BD0 0.8385896 877251 1934 32E16BD0 0.832581 891146 1963</null></null></null></null></null></null></null></null></null></null></null></null></null></null></null></null>				
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32E14 00² 0.932526 875707 1978 32E16CD0 0.930025 883896 1979 32E16CD0 0.928458 884047 1998 32E22DD0 0.927952 891994 <null> 32E16D 0C 0.926438 884298 1950 32E22DD0 0.925861 891949 <null> 32E16CD0 0.924474 883903 1980 32E23C 00 0.922838 883912 1978 32E16CD0 0.922838 883912 1978 32E22DD0 0.918557 892038 <null> 32E22DD0 0.918473 893340 1990 32E22DD0 0.918473 893340 1990 32E22DD0 0.918849 892047 <null> 32E22DD0 0.918281 891967 <null> 32E21DD0 0.918281 891967 <null> 32E21DD0 0.909726 884528 1966 32E16AA0 0.90755 882361 1968 32E21DB0 0.905038 890254 1966 32E21DB0 0.905038 892109 1910 32E23B 00 0.899908 892369 1973 32E15D 01 0.893466 881647 1978 32E15D 01</null></null></null></null></null></null>	32E15C 01	0.937462	881558	1973
32E16CD0 0.930025 883896 1979 32E16CD0 0.928458 884047 1998 32E22DD0 0.927952 891994 Null> 32E16D0 0.926438 884298 1950 32E22DD0 0.925861 891949 Null> 32E16CD0 0.924474 883903 1980 32E16CD0 0.922838 883912 1978 32E16CD0 0.920482 884038 1978 32E22DD0 0.918557 892038 Null> 32E22DD0 0.918473 893340 1990 32E22DD0 0.918473 893340 1990 32E22DD0 0.918481 891958 Null> 32E22DD0 0.918281 891967 Null> 32E21DD0 0.909726 884528 1966 32E16AA0 0.90755 882361 1968 32E21DB0 0.905038 890254 1966 32E21DB0 0.905038 890254 1966 32E21DB0 0.903753 892109 1910 32E23B 00 0.899908 892369 1973 32E15D 01 0.889343 881634 1978	32E23C 00	0.936907	893527	1971
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32E16AA1	0.14113	1810730	1998
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32E16AA1	0.139622	1810712	1998
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32E16AA1	0.139482	1810696	2000
32E16AA1	0.133164	1810030	1998
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32E15A 00	0.133193	877180	
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32E15BD0		1654677	
32E22D 01		891921	
32E15BB1(0.06049	1790217	
	0.06049		
32E21DB0		889998	
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32E27BBN 0.013773 <Null>
32E16A 02 0.0111 882735 <Null>
32E22DDN 0.003715 <Null> <Null>

1,592 Lots smaller than 2 acres (85 %)

130 lots smaller than 5 acres (7 %)

Over 5 acres, (8 %)

United States Department of Agriculture

Natural Resources Conservation Service A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Clackamas County Area, Oregon



Appendix N - South System Exhibit 5 Exhibit 5 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

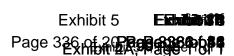
Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2 053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

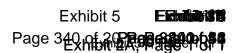
Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

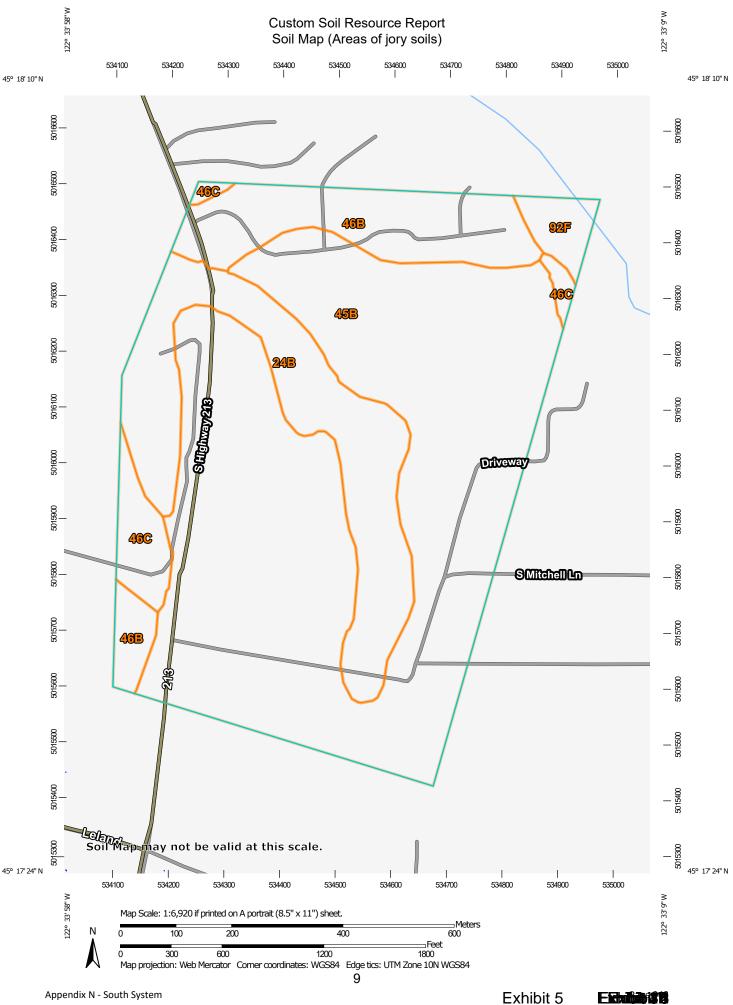
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and



identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



MAP LEGEND

Area of Interest (AOI) Spoil Area

Area of Interest (AOI) Stony Spot

Soils

Soil Map Unit Polygons Wet Spot Soil Map Unit Lines Other

Soil Map Unit Points Special Line Features

Water Features

Very Stony Spot

Special Point Features

Blowout Streams and Canals

Borrow Pit Transportation

Clay Spot Rails

Closed Depression Interstate Highways

Gravel Pit **US Routes** Gravelly Spot Major Roads Landfill Local Roads

Lava Flow Background

Marsh or swamp Aerial Photography

Mine or Quarry

Miscellaneous Water

Perennial Water Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole Slide or Slip Sodic Spot

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon Survey Area Data: Version 16, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Aug 19, 2015—Sep 13. 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Areas of jory soils)

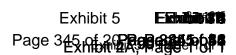
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
24B	Cottrell silty clay loam, 2 to 8 percent slopes	31.3	17.5%
45B	Jory silty clay loam, 2 to 8 percent slopes	116.6	65.2%
46B	Jory stony silt loam, 3 to 8 percent slopes	21.2	11.9%
46C	Jory stony silt loam, 8 to 15 percent slopes	6.3	3.5%
92F	Xerochrepts and Haploxerolls, very steep	3.4	1.9%
Totals for Area of Interest		178.9	100.0%

Map Unit Descriptions (Areas of jory soils)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.



The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

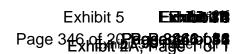
Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.



Clackamas County Area, Oregon

24B—Cottrell silty clay loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 223v Elevation: 300 to 900 feet

Mean annual precipitation: 45 to 80 inches Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 140 to 200 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Cottrell and similar soils: 90 percent Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cottrell

Setting

Landform: Hillslopes, terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope, interfluve, tread

Down-slope shape: Linear Across-slope shape: Linear Parent material: Old alluvium

Typical profile

H1 - 0 to 24 inches: silty clay loam H2 - 24 to 55 inches: silty clay H3 - 55 to 86 inches: silty clay loam

Properties and qualities

Slope: 2 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.57 in/hr)

Depth to water table: About 24 to 35 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C

Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)

Other vegetative classification: Moderately Well Drained < 15% Slopes

(G002XY004OR) Hydric soil rating: No

Minor Components

Borges

Percent of map unit: 4 percent

Exhibit 5 Exhibit 5 Page 347 A R Page 347 A

Landform: Depressions on terraces, hillslopes Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope, tread

Down-slope shape: Linear Across-slope shape: Linear

Other vegetative classification: Poorly Drained (G002XY006OR)

Hydric soil rating: Yes

Aquults

Percent of map unit: 1 percent Landform: Depressions Hydric soil rating: Yes

45B—Jory silty clay loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 224x Elevation: 250 to 1.200 feet

Mean annual precipitation: 50 to 60 inches
Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Jory and similar soils: 90 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jory

Setting

Landform: Hillslopes

Landform position (two-dimensional): Summit, footslope Landform position (three-dimensional): Base slope, interfluve

Down-slope shape: Linear Across-slope shape: Linear Parent material: Colluvium

Typical profile

H1 - 0 to 13 inches: silty clay loam H2 - 13 to 60 inches: silty clay

Properties and qualities

Slope: 2 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 2e Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Forage suitability group: Well drained < 15% Slopes (G002XY002OR)
Other vegetative classification: Well drained < 15% Slopes (G002XY002OR)

Hydric soil rating: No

46B—Jory stony silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2251 Elevation: 250 to 1,200 feet

Mean annual precipitation: 40 to 50 inches Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Jory and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jory

Setting

Landform: Hillslopes

Landform position (two-dimensional): Summit, footslope Landform position (three-dimensional): Base slope, interfluve

Down-slope shape: Linear Across-slope shape: Linear Parent material: Colluvium

Typical profile

H1 - 0 to 8 inches: stony silt loam H2 - 8 to 48 inches: stony silty clay H3 - 48 to 60 inches: stony silty clay

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: C

Exhibit 5 Exhibit 5 Page 349 of 200 Page 349 o

Forage suitability group: Well drained < 15% Slopes (G002XY002OR)

Other vegetative classification: Well drained < 15% Slopes (G002XY002OR)

Hydric soil rating: No

46C—Jory stony silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2252 Elevation: 250 to 1,200 feet

Mean annual precipitation: 40 to 50 inches Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Jory and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jory

Setting

Landform: Hillslopes

Landform position (two-dimensional): Summit, footslope Landform position (three-dimensional): Base slope, interfluve

Down-slope shape: Linear Across-slope shape: Linear Parent material: Colluvium

Typical profile

H1 - 0 to 8 inches: stony silt loam
H2 - 8 to 48 inches: stony silty clay
H3 - 48 to 60 inches: stony silty clay

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: C

Forage suitability group: Well drained < 15% Slopes (G002XY002OR)

Other vegetative classification: Well drained < 15% Slopes (G002XY002OR)

Hydric soil rating: No

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92F—Xerochrepts and Haploxerolls, very steep

Map Unit Setting

National map unit symbol: 2281 Elevation: 50 to 1,000 feet

Mean annual precipitation: 40 to 60 inches Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Not prime farmland

Map Unit Composition

Xerochrepts and similar soils: 50 percent Haploxerolls and similar soils: 35 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Xerochrepts

Setting

Landform: Terraces

Landform position (three-dimensional): Riser

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Colluvium derived from igneous rock

Typical profile

H1 - 0 to 8 inches: silt loam

H2 - 8 to 48 inches: gravelly clay loam
H3 - 48 to 60 inches: very cobbly clay loam

Properties and qualities

Slope: 20 to 60 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.57 in/hr)

Depth to water table: About 36 to 72 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B Hydric soil rating: No

Description of Haploxerolls

Setting

Landform: Terraces

Landform position (three-dimensional): Riser

Down-slope shape: Concave

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Across-slope shape: Linear

Parent material: Colluvium derived from igneous rock

Typical profile

H1 - 0 to 12 inches: silt loam

H2 - 12 to 60 inches: very gravelly loam

Properties and qualities

Slope: 20 to 60 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.20 to 1.98 in/hr)

Depth to water table: About 36 to 48 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B Hydric soil rating: No

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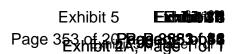
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Cereghino Subdivision – Traffic Impact Study

EXECUTIVE SUMMARY

- 1. Two tax lots located on the east side of Oregon Highway 213 immediately north of S Mitchell Lane in Clackamas County are proposed for a zone change and subsequent residential development. The site will take access via S Mitchell Lane, which intersects Highway 213.
- 2. Upon completion of the proposed development, the subject property is projected to generate 36 site trips during the morning peak hour, 49 trips during the evening peak hour, and 462 daily trips.
- 3. Based on the zone change analysis, the proposed change to RA-2 zoning could result in a net increase of up to 33 trips during the morning peak hour, 43 trips during the evening peak hour, and 416 additional daily trips as compared to the existing FF-10 zoning.
- 4. The study intersections are projected to operate acceptably per ODOT and Clackamas County standards through 2023 either with or without the addition of site trips from the proposed development. No operational mitigations are necessary or recommended in conjunction with the proposed development.
- 5. The intersection of Highway 213 at S Mitchell Lane is not projected to meet ODOT's performance target under year 2036 traffic conditions either with or without the addition of site trips from the proposed zone change. If a southbound left-turn lane is provided on the Highway 213 approach to Mitchell Lane in conjunction with the proposed zone change, intersection operation is projected to improve as compared to background conditions. Based on the queueing analysis, it is recommended that a storage length of 100 feet be provided for the future southbound left-turn lane on Highway 213 at Mitchell Lane.
- 6. An examination of crash data for the most recent five years shows no significant crash trends that may be indicative of design deficiencies. The intersection crash rates were determined to be well below the 90th percentile crash rate for similar intersections in Oregon. No specific crash mitigations are recommended.
- 7. A left-turn lane is projected to be warranted and is recommended for installation on the southbound Highway 213 approach to Mitchell Lane in conjunction with the proposed development. A right-turn lane is currently warranted on the northbound Highway 213 approach to Mitchell Lane; however, the proposed development is not projected to impact the need for this right-turn lane.
- 8. Clackamas County should require approval of a modification to the county sight distance standards or physical improvement of sight lines looking north on S Beavercreek Road from S Lammer Road prior to approval of additional homes which will take access to S Beavercreek Road via S Lammer Road.
- 9. The proposed development will meet the requirements of Oregon's Transportation Planning Rule provided that a southbound left-turn lane is required as a condition of the proposed zone change. The turn lane should be installed prior to occupancy of the proposed residential subdivision.

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PROJECT DESCRIPTION & LOCATION

INTRODUCTION

A residential development and associated zone change are proposed for two tax lots in Clackamas County. The subject properties have a total area of approximately 110 acres and are currently zoned FF-10. Under the proposed plan, the properties would be rezoned to RA-2, and the site would be developed with 49 lots for residential homes. It should be noted that a creek divides the site, and since the creek will not have any form of roadway crossing the proposed development plan, future site trips will be divided between those on the west side and those on the east side of the creek. The westerly portion of the property will take access exclusively via S Mitchell Lane, which intersects Oregon Highway 213 approximately one quarter mile north of S Leland Road. The easterly portion of the property will take access via S Lammer Road, which intersects S Beavercreek Road approximately three quarters of a mile south of S Henrici Road.

The subject property is proposed for residential development. This report addresses the potential transportation impacts of the proposed development at the anticipated time of project completion as well as the impacts of the proposed zone change at the long-range planning horizon. Based on discussions with Clackamas County and ODOT staff, the study consists of an operational and safety analysis conducted for the intersections of Oregon Highway 213 at S Mitchell Lane and Beavercreek Road at Lammer Road under existing and future development scenarios.

The purpose of this analysis is to determine whether the surrounding transportation system is capable of safely and efficiently supporting the proposed use and to identify any necessary improvements and mitigations.

SITE LOCATION AND STUDY AREA DESCRIPTION

The project site comprises two parcels, tax lots 32E2100200 and 32E2200200. They have a combined area of 110.3 acres and are currently zoned FF10. The properties are located on the east side of Oregon Highway 213 north of S Mitchell Lane in Clackamas County. The site is surrounded by the existing Stone Creek Golf Club immediately to the east, the Grand View Baptist Church and small commercial uses along the highway to the south, and a mixture of low-density residential and undeveloped properties.

The subject property will take primary access via S Mitchell Lane, which intersects Oregon Highway 213. A secondary access will be utilized for the smaller-scale development on the east side of the creek that runs through the property, with these easterly homes taking access via S Lammer Road, which intersects S Beavercreek Road.

Oregon Highway 213 (Cascade Highway South) is classified by the Oregon Department of Transportation as a District Highway. At the Mitchell Lane intersection, it has one through lane in each direction. It has a posted speed limit of 55 mph in the site vicinity.

- S Mitchell Lane is classified by Clackamas County as a Local street. It has a two-lane cross-section along the site frontage, with one through lane in each direction and no centerline striping.
- S Beavercreek Road is classified by Clackamas County as a Major Arterial. It has one through lane in each direction and is striped to prohibit passing in the vicinity of S Lammer Road. It has a posted speed limit of 45 mph.
- S Lammer Road is classified by Clackamas County as a local street. It has a two-lane cross-section with one through lane in each direction and no centerline striping.

EXISTING CONDITIONS

The intersection of Oregon Highway 213 at S Mitchell Lane is a T-intersection operating under stop control. Through traffic traveling along Highway 213 is free flowing, while vehicles approaching via S Mitchell Lane are required to stop and yield to through traffic prior to entering Highway 213. Each approach has a single, shared lane for all turning movements.

The intersection of S Beavercreek Road at S Lammer Road forms a four-way intersection with S Camelia Court forming the east leg of the intersection. The eastbound and westbound approaches each have a single, shared lane for all turning movements and operate under stop control. The northbound and southbound Beavercreek Road approaches also have a single shared lane for all turning movements but are free flowing.

A vicinity map displaying the project site, vicinity streets, and study intersection including lane configurations is provided in Figure 1 on page 7.

TRAFFIC COUNT DATA

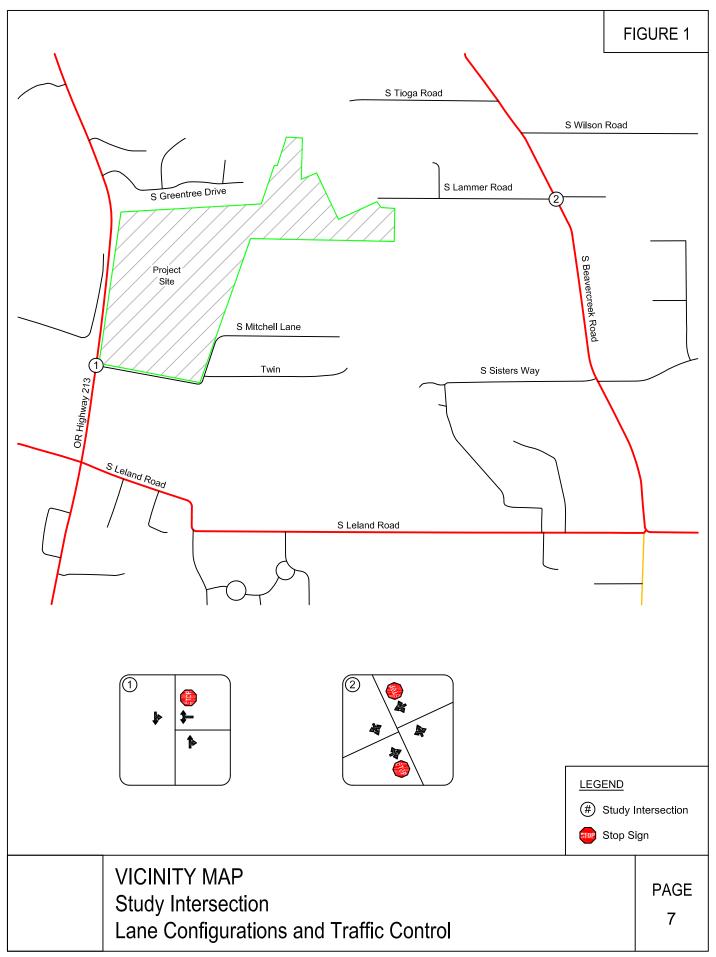
Traffic counts were conducted at the intersection of Oregon Highway 213 and S Mitchell Lane on Thursday, April 8, 2021 from 7:00 to 9:00 AM and from 4:00 to 6:00 PM. Subsequent traffic counts were conducted at the intersection of S Beavercreek Road and S Lammer Road on Wednesday, September 29, 2021 from 7:00 to 9:00 AM and from 4:00 to 6:00 PM. Data was used from the highest-volume hour during each analysis period.

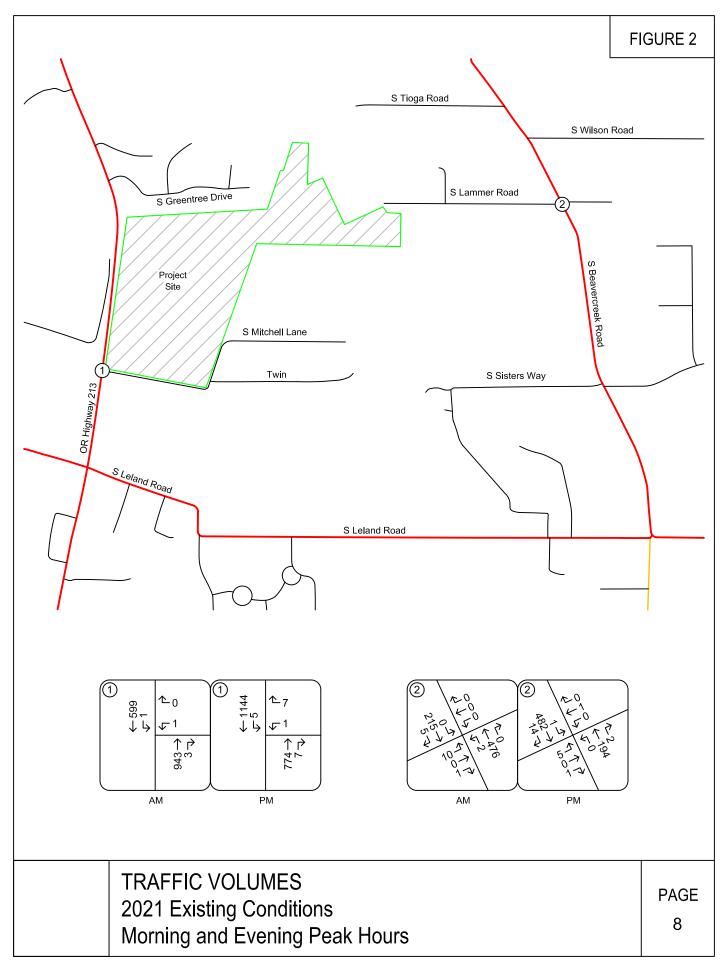
The Oregon Department of Transportation (ODOT) requires that analysis be conducted for peak-season conditions, with the analyzed traffic volumes based on 30th-highest hour conditions. The analysis therefore requires adjustment of the measured traffic volumes to represent peak season conditions. ODOT maintains a permanent Automatic Traffic Recorder station on Oregon Highway 213 approximately 3.4 miles south of S Mitchell Lane (ATR 03-020, Mulino). This station tracks monthly variations in traffic volumes along the highway corridor. Based on the data, the weekday peak traffic volumes occur in August. Accordingly, the April count volumes were increased by 5.7 percent to represent peak season conditions.

In addition to this seasonal adjustment, the measured traffic volumes at both intersections were adjusted to account for the impact of the COVID-19 pandemic. Using data from ODOT's Observed Statewide Traffic Volume Patterns report for April 2021, a COVID adjustment of 8.57 percent was calculated and applied to the measured highway volumes.

Figure 2 on page 8 shows the existing 2021 traffic volumes for the peak season morning and evening peak hours at the study intersections.

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OPERATIONAL ANALYSIS

An operational analysis was conducted for the study intersection using Synchro software. The analysis was conducted for the existing weekday morning and evening peak hours.

The purpose of the existing conditions analysis is to establish how the study area intersections operate currently and allow for calibration of the operational analysis if required.

The results of the operational analysis are reported based on delay, Level of Service (LOS), and volume-to-capacity ratio (v/c). Delays are reported in seconds. Level of service is reported as a letter grade and can range from A to F, with level of service A representing nearly free-flow conditions and level of service F representing high delays and severe congestion. A report of level of service D generally indicates moderately high but tolerable delays, and typically occurs prior to reaching intersection capacity. For the unsignalized study intersection, the v/c represents the portion of the available intersection capacity that is being utilized on the worst intersection approach. A v/c ratio of 1.0 would indicate that the approach is operating at capacity.

The Oregon Department of Transportation's Oregon Highway Plan establishes mobility targets for intersections on state highways. For the intersection of Oregon Highway 213 at S Mitchell Lane, the mobility target is operation with a v/c ratio of 0.75 or less on all intersection approaches. This mobility target applies to 30th-highest hour volumes, which reflect conditions during seasonal peak traffic conditions.

Clackamas County requires that intersections operate at level of service "E" or better during the peak hours.

A summary of the existing conditions operational analysis is provided in Table 1 below.

Based on the analysis, the study intersections are currently operating acceptably during the morning and evening peak hours. Detailed capacity analysis worksheets are provided in the technical appendix.

Table 1 - Operational Analysis Summary: 2021 Existing Conditions

Intersection	А	M Peak H	our	PM Peak Hour					
intersection	Delay	LOS	v/c	Delay	LOS	v/c			
Highway 213 at S Mitchell Lane	42.9	E	0.61/0.01*	21.6	С	0.70/0.04*			
Beavercreek Rd at Lammer Rd	16.7	С	0.31	15.7	С	0.30			

^{*}Highway 213 intersection v/c ratios are reported as (major street v/c / minor-street v/c).

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SITE TRIPS

The proposed new development accessed via S Mitchell Lane will consist of 49 lots, each of which can support a single-family home. To estimate the number of trips that will be generated by the proposed development, trip rates from the *TRIP GENERATION MANUAL*, 10th EDITION were used. Data from land-use code 210, Single-Family Detached was used. The trip estimates are based on the number of dwelling units. No near-term development is currently proposed which would take access via Lammer Road.

A summary of the trip generation calculations is provided in Table 2 below. Detailed trip generation worksheets are also included in the technical appendix.

Table 2 - Proposed Development Trip Generation Summary

	A۱	Л Peak Ho	our	PΝ	Л Peak Ho	our	Daily
	In	Out	Total	In	Out	Total	Total
49 Single-Family Homes	9	27	36	31	18	49	462

ZONE CHANGE TRIPS

In addition to examination of the actual proposed site plan, a trip generation analysis is required for the proposed zone change. The trip analysis for the zone change considers the "reasonable worst case development scenario" for the existing and proposed zoning to determine the maximum development that could occur both with and without the proposed zone change. The comparison between the existing and proposed zoning scenarios reveals the maximum increase in traffic that could result from the proposed zone change under any potential site development plan.

Under existing conditions, the Clackamas County "Farm Forest 10-Acre" (FF-10) zoning allows for residential development of the site with a minimum lot size of ten acres. Since the property has a total area of approximately 110 acres, this means that up to 11 single-family homes could be constructed within the property. The property is divided by a creek, and no connection is anticipated to cross the creek. Accordingly, the western 100 acres will take access via Mitchell Lane while the eastern 10 acres will take future access via S Lammer Road to S Beavercreek Road.

Based on the results of the Cereghino Subdivision Zone Change Analysis Memorandum included in the attached technical appendix, it is recommended that the subject properties be rezoned to "Rural Area Residential 2-Acre" (RA-2) zoning due to anticipated safety improvement requirements specified by the Oregon Department of Transportation in conjunction with federal requirements of rough proportionality between required improvements and the actual impacts of a proposed development. This recommended zoning allows for residential development of the site with a minimum lot size of two acres. Since the property has a total area of approximately 110 acres, this means that up to 55 single-family homes could be constructed within the property, with up to 50 taking access via Mitchell Lane and 5 taking access via S Lammer Road.

The trip generation estimates for the existing and proposed zoning were prepared using data from the Trip Generation Manual, 10th Edition, published by the Institute of Transportation Engineers. Trip generation was calculated using the published trip rates for ITE land use code 210, Single-Family Detached Housing. The calculations are again based on the number of dwelling units.

Based on the analysis, the proposed zone change could result in a net increase of up to 33 trips during the morning peak hour, 43 trips during the evening peak hour, and 416 daily trips as compared to the development potential under the existing zoning. A summary of the trip generation calculations is provided in the table below. Detailed trip generation calculation worksheets are also included in the attached technical appendix.

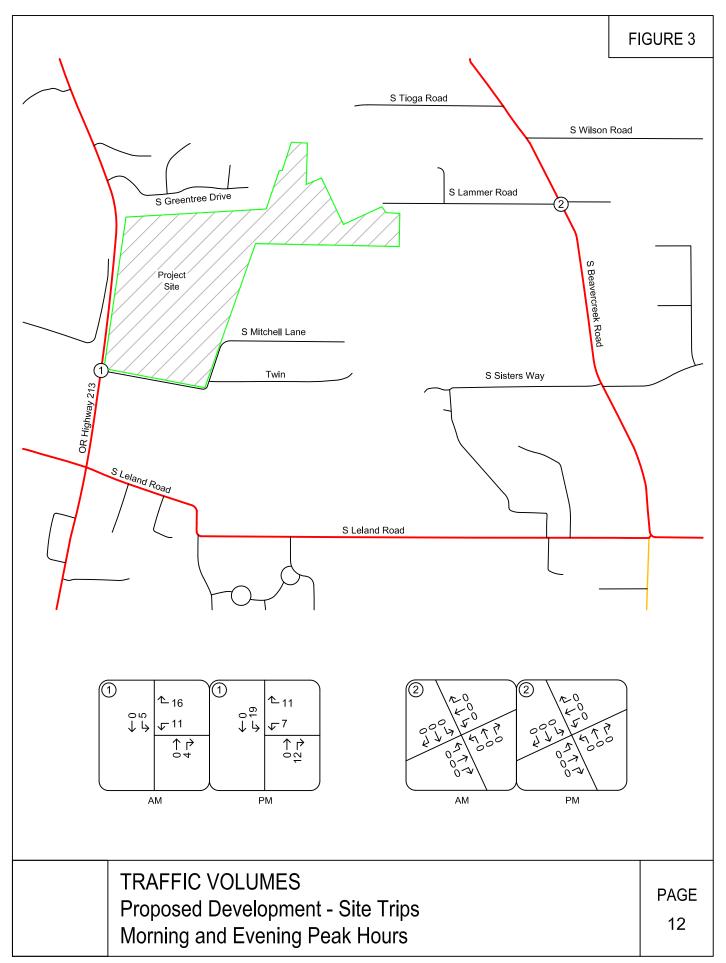
	Morn	ing Peal	k Hour	Eve	ning Peal	k Hour	Daily
	In	Out	Total	In	Out	Total	Total
Proposed RA-2 Zoning (55 homes)	10	31	41	34	20	54	520
-Existing FF-10 Zoning (11 homes)	-2	-6	-8	-7	-4	-11	-104
Net Increase in Site Trips	8	25	33	27	16	43	416

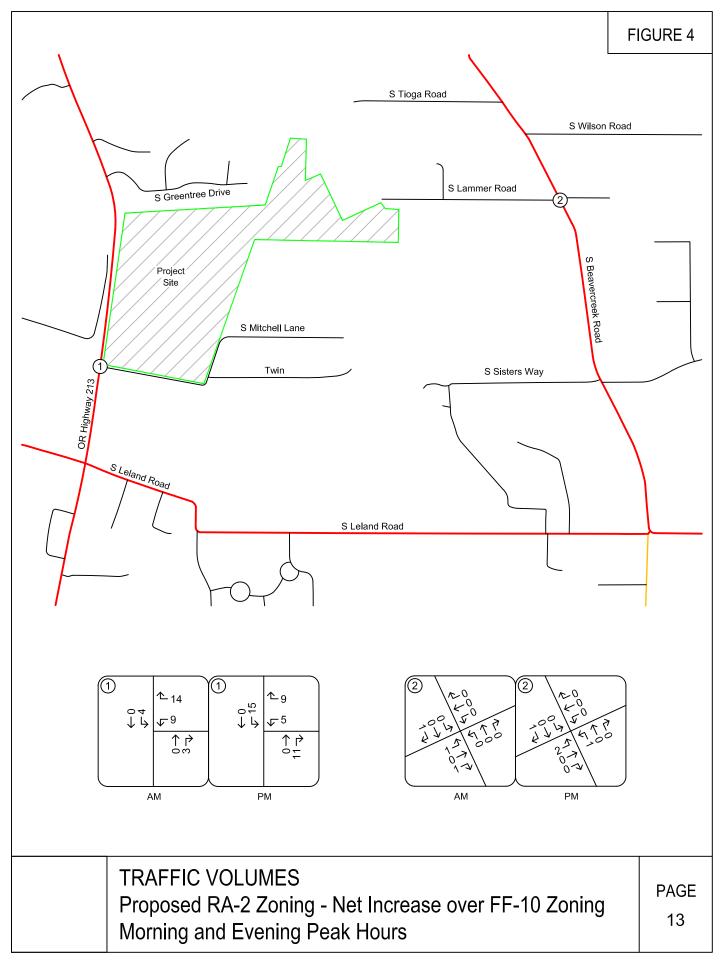
TRIP DISTRIBUTION

The directional distribution of site trips to and from the subject property was estimated based the existing travel patterns in the site vicinity. Overall 60 percent of site trips are projected to travel to and from the north on Highway 213 and 40 percent of site trips are projected to travel to and from the south on Highway 213 for the portion of the potential development taking access via S Mitchell Lane. For the portion taking access via S Lammer Road, 85 percent of site trips are projected to travel to and from the north on S Beavercreek Road, and the remaining 15 percent of site trips will travel to and from the south on S Beavercreek Road.

The trip distribution percentages and trip assignment for the proposed development trips during the morning and evening peak hours are shown in Figure 3 on page 12.

The trip assignment for the potential increase in site trips associated with the proposed RA-2 zone change is shown in Figure 4 on page 13. A map showing the trip assignment for future trips assuming development under the existing FF-10 zoning is provided in Figure 9 in the attached technical appendix.





FUTURE CONDITIONS ANALYSIS

BACKGROUND VOLUMES

In order to determine the expected impact of site trips on the study area intersections, it is necessary to compare traffic conditions both with and without the addition of the projected traffic from the proposed development. Since the proposed buildings cannot be constructed and occupied immediately, the comparison is made for future traffic conditions at the time of project completion. It is anticipated that the proposed use will be completed and fully occupied within two years. Accordingly, the analysis was conducted for year 2023 traffic conditions.

Prior to adding the projected site trips to the study intersections, the existing traffic volumes were adjusted to account for background traffic growth over time. Background growth is expected to occur regardless of whether or not the proposed residential development is constructed, and accounts for other developments outside the immediate project area.

Based on data from ODOT's Future Volume Tables, a growth rate of 0.92 percent per year (linear) was calculated for Oregon Highway 213 at S Mitchell Lane. This growth rate was applied over a period of two years to generate the projected year 2023 traffic volumes, and over 15 years to generate the year 2-36 projected traffic volumes.

For S Beavercreek Road, a growth rate of 2 percent per year (exponential) was applied to the existing traffic volumes to generate the projected year 2023 and year 2036 traffic volumes.

Figure 5 on page 15 shows the projected year 2023 background traffic volumes at the study intersections during the morning and evening peak hours.

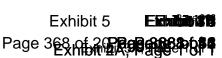
Background traffic volumes for year 2036 assuming development occurs under the existing FF-10 zoning are shown in Figure 7 one page 17.

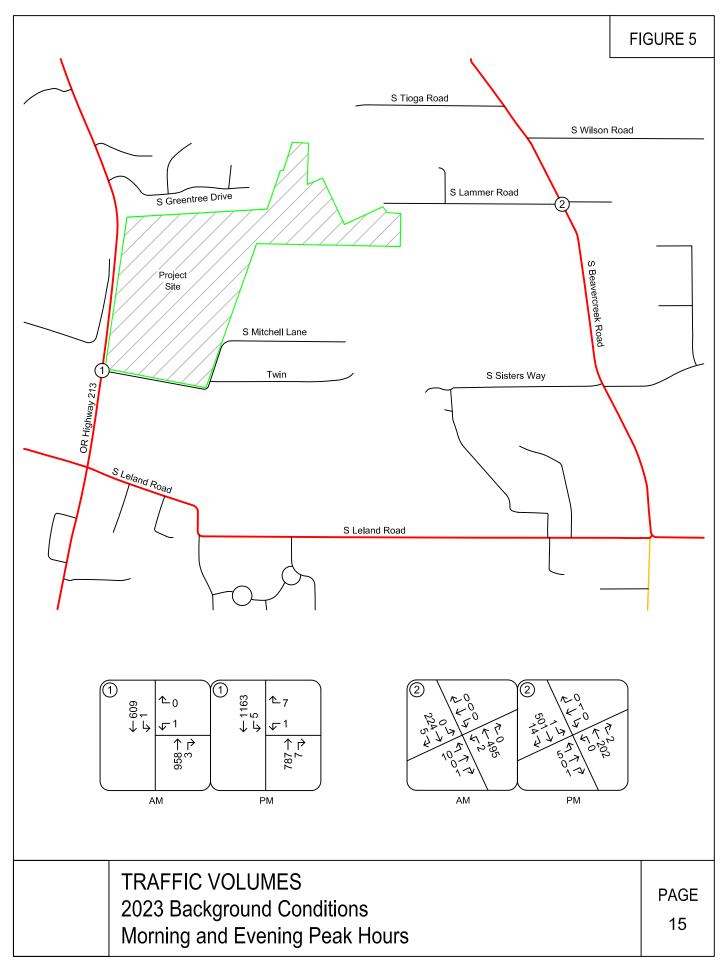
BACKGROUND VOLUMES PLUS SITE TRIPS

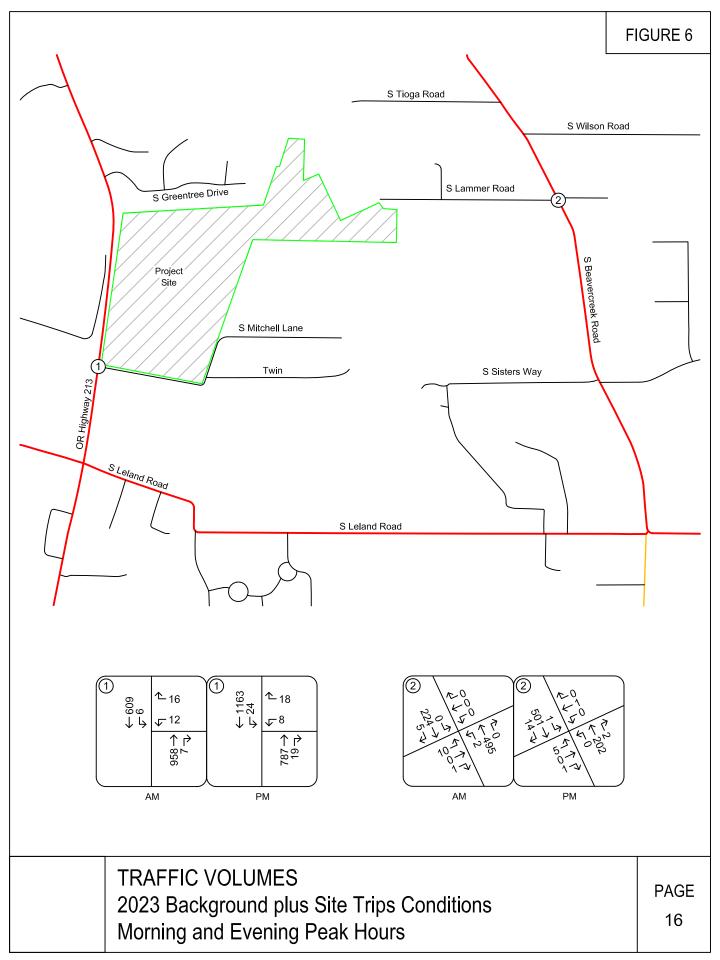
Peak hour trips calculated to be generated by the proposed development were added to the projected year 2023 background traffic volumes to obtain the year 2023 total traffic volumes following completion of the proposed development.

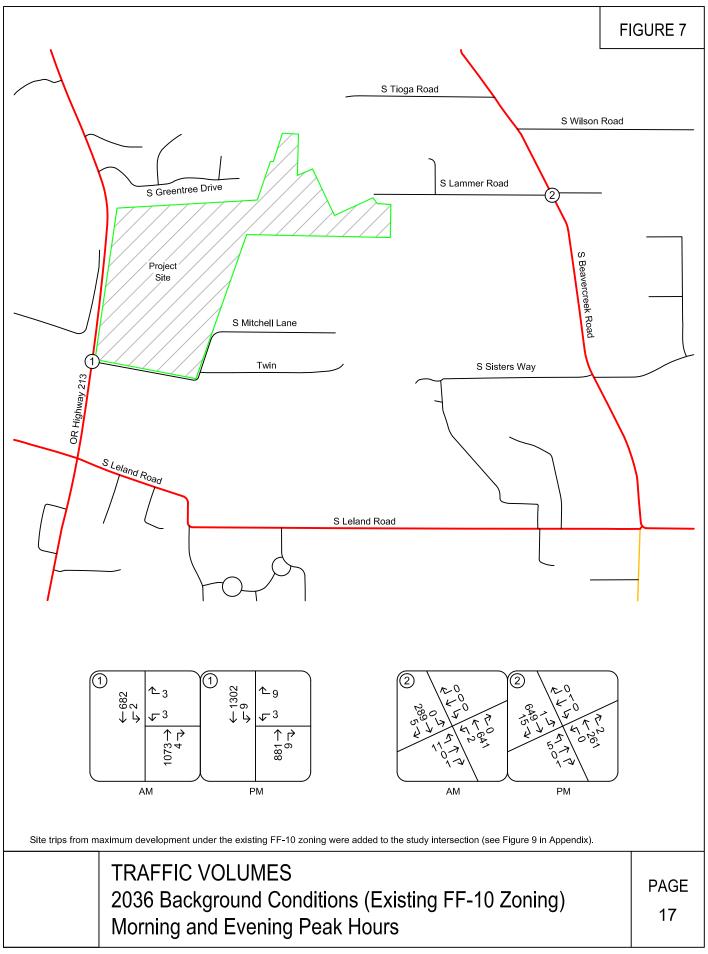
Figure 6 on page 16 shows the projected year 2023 peak hour volumes including both background growth and site trips from the proposed development during the morning and evening peak hours.

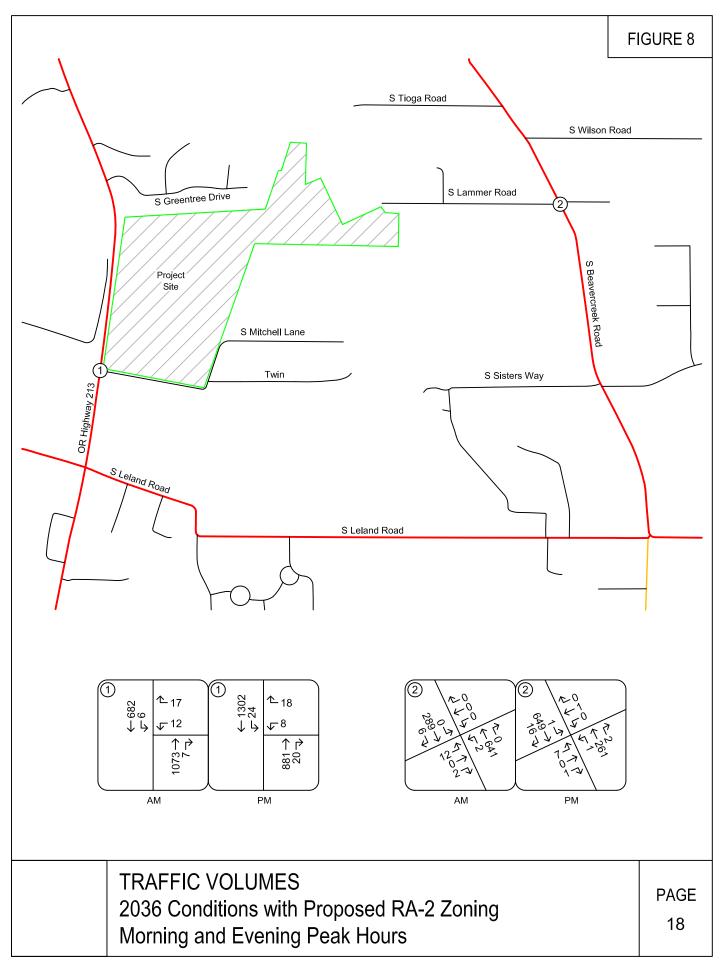
Figure 8 on page 18 shows the projected year 2036 peak hour volumes assuming maximum development occurs under the proposed RA-2 zoning.











OPERATIONAL ANALYSIS

The future conditions operational analysis was again conducted using Synchro software, with outputs based on the analysis methodologies contained in the *HIGHWAY CAPACITY MANUAL*. The analysis was prepared for the intersection's morning and evening peak hours.

The results of the future conditions operational analysis are summarized in Table 3 below. Detailed analysis worksheets are included in the technical appendix.

Table 3 - Future Operations Analysis Summary

Analysis Scanario	Α	M Peak Ho	our	PM Peak Hour				
Analysis Scenario	Delay	LOS	v/c*	Delay	LOS	v/c*		
Highway 213 at S Mitchell Lane								
2023 Background Conditions	44.6	E	0.62/0.01	22.2	С	0.71/0.04		
2023 Background plus Site Trips	37.1	E	0.62/0.22	43.8	E	0.74/0.23		
2023 Bkgd plus Site w/ SBLT Lane	22.0	С	0.62/0.13	20.2	С	0.71/0.10		
2036 Background Conditions	38.5	Е	0.67/0.06	40.1	Е	0.80/0.11		
2036 Background plus Zone Change	44.9	Е	0.67/0.26	64.3	F	0.82/0.32		
2036 Bkgd plus ZC w/ SBLT Lane	24.4	С	0.67/0.15	22.8	С	0.78/0.12		
S Beavercreek Road at S Lammer Road	l							
2023 Background Conditions	17.4	С	0.33	16.1	С	0.32		
2023 Background plus Site Trips	17.4	С	0.33	16.1	С	0.32		
2036 Backgroun@bnditions	23.3	С	0.42	20.4	С	0.41		
2036 Background plus zone Change	22.7	С	0.42	20.1	С	0.41		

^{*}Highway 213 intersection v/c ratios are reported as (major street v/c / minor-street v/c).

Based on the results of the operational analysis, the study intersections are projected to operate acceptably through year 2023 either with or without the addition of site trips from the proposed development.

Under year 2036 planning horizon conditions, the intersection of Highway 213 at S Mitchell Lane is projected to operate with a v/c ratio above 0.75 during the evening peak hour either with or without the addition of site trips from future development within the proposed zoning. However, if a southbound left-turn lane is provided, intersection operation is projected to improve as compared to background conditions.

QUEUING ANALYSIS

A queuing analysis was conducted for year 2036 background plus site trips conditions for the morning and evening peak hours using SimTraffic software. The analysis was conducted to determine an appropriate storage length for a southbound left-turn lane at the study intersection. The reported results indicate the 95th percentile queue lengths for each turning movement at each intersection. The 95th percentile queue is a queue length that is exceeded during 5% or less of the peak hour. Queue lengths in excess of the 95th percentile do not occur with sufficient regularity to be utilized in efficient design.

Based on the queueing analysis, the longest 95th percentile queue is projected to occur during the year 2036 PM peak hour, with a projected length of 44 feet. Per ODOT's Highway Design Manual, the minimum storage length for a left-turn lane is 100 feet. Accordingly, 100 feet of left-turn storage should be provided for the southbound left-turn lane on Highway 213 approaching Mitchell Lane.

SAFETY ANALYSIS

CRASH DATA ANALYSIS

Using data obtained from the Oregon Department of Transportation, a review of the five most recent years of available crash history (from January 2015 to December 2019) was performed for the study intersections. The crash data was evaluated based on the number, type, and severity of collisions, as well as the intersection crash rate. Crash rates allow comparison of relative safety risks at intersections with different lane configurations, volumes, and traffic control devices by accounting for both the number of crashes that occur during the study period and the number of vehicles that traveled through the intersection during that period. Crash rates are calculated using the standard assumption that evening peak hour volumes are approximately 10 percent of the average daily traffic volume at an intersection. The crash rates were compared to statewide crash rates in order to determine whether crash rates in excess of the 90th percentile are evident.

The intersection of Oregon Highway 213 at S Mitchell Lane had eight reported crashes during the five-year analysis period. These included six rear-end collisions and two turning-movement collisions. The crashes resulted in four non-incapacitating injuries and five reports of a "possible injury/complaint of pain." The crash rate for the intersection was calculated to be 0.259 crashes per million entering vehicles. This is well below the 90th percentile crash rate of 0.475 crashes per million entering vehicles for rural unsignalized three-way intersections in the state of Oregon.

The intersection of Beavercreek Road at SW Lammer Road had two reported crashes during the five-year analysis period. One was a fixed-object collision that resulted in property damage only. The other was an angle collision that occurred when an eastbound driver turning left from Lammer Road onto Beavercreek Road failed to yield and turned in front of an oncoming motorcycle, resulting in incapacitating injuries to the motorcyclist. The crash rate for the intersection was calculated to be 0.157 crashes per million entering vehicles. This is well below the 90th percentile crash rate of 1.080 crashes per million entering vehicles for rural unsignalized four-way intersections in the state of Oregon.

Based on the crash data, no significant safety hazards were identified, and no specific safety mitigations are recommended.

TRAFFIC SIGNAL AND TURN LANE WARRANT ANALYSIS

Based on examination of the projected turning movement volumes at the site access intersections, traffic signal warrants will not be satisfied at the site access under any of the analysis scenarios. Accordingly, no new traffic signals are recommended in conjunction with the proposed development.

Major-street turn lane warrants are primarily based on safety considerations. A major-street left-turn lane provides a refuge for drivers to move out of the through travel lane while waiting for a gap in the opposing through traffic stream prior to turning left. A major-street right-turn lane allows right-turning drivers to decelerate outside the through travel lane prior to turning.

Exhibit 5 Exhibit 5 Page 375 Photographs 1998

Left-turn lane warrants are based on volume of advancing and opposing traffic, the number of through travel lanes, and the number of vehicles turning left. Based on the analysis, a southbound left-turn lane is projected to be warranted on Highway 213 approaching S Mitchell Lane under year 2023 background plus site trips conditions. Accordingly, it is recommended that a southbound left-turn lane be constructed as part of the proposed development.

Right-turn lane warrants are based on the number of vehicles making right turns, the speed of through traffic, and the volume of traffic in the outside travel lane. Typically, right-turn volumes of 20 or fewer vehicles during the peak hour do not meet right-turn lane warrants; however, where the traffic volumes in the outside lane are in excess of 700 vehicles per hour and the intersection is in a rural area and provides a connection to a public street, ODOT policy dictates that a right turn lane should be provided.

It should be noted that upon completion of the proposed development fewer than 20 northbound right-turns are projected for the intersection of Oregon Highway 213 at S Mitchell Lane. The volume-based warrant for installation of a right-turn lane will therefore not be triggered by the proposed development. Accordingly, the proposed development does not cross a threshold that would trigger then need for a right turn lane. Since right-turn lanes are essentially recommended as standard for rural public street connections regardless of the volume of turning traffic, this ODOT policy would apply to the current configuration equally, regardless of whether any additional trips are added to S Mitchell Lane. Based on the crash data only one crash during the five-year analysis period may have been associated with a northbound right-turn movement onto S Mitchell Lane. It was a northbound rear-end collision that occurred in 2015 when a northbound driver failed to avoid a stopped northbound vehicle within the roadway ahead. The crash resulted in property damage only.

Right-turn lanes are recommended to address safety concerns when there is a history of crashes susceptible to correction by a right-turn lane and the safety benefits outweigh the associated improvement costs. In this case, even considering the projected increase in right turns, the frequency and severity of crashes appears to be too low for the benefits of a right-turn lane to outweigh the improvement costs. Additionally, it is unclear whether there is sufficient right-of-way to accommodate both the necessary southbound left-turn lane and a desired right-turn lane, and unclear that a requirement for both lanes would remain proportionate to the actual impact of the proposed development. Based on the analysis a right-turn lane can be considered for installation; however, the addition of a right-turn lane is not recommended as a condition of the proposed development and associated zone change.

For the intersection of S Beavercreek Road at S Lammer Road, no development is currently proposed. Examination of the potential future turning movement volumes at the long-range planning horizon shows that the left- and right-turn volumes are too low to warrant installation of turn lanes. Accordingly, no new turn lanes are recommended in conjunction with the proposed development or the proposed zone change.

INTERSECTION SIGHT DISTANCE ANALYSIS

Intersection sight distance was measured for the existing intersection of Highway 213 at S Mitchell Road. The posted speed limit along Highway 213 is 55 mph, requiring a minimum of 610 feet of intersection sight distance.

The available intersection sight distances were measured from a position 14.5 feet behind the edge of the traveled way with a driver's eye height 3.5 feet above the driveway surface to an oncoming driver's eye height of 3.5 feet above the surface of the oncoming travel lane. Intersection sight distance was measured to be greater than 700 feet in each direction.

Intersection sight distance was also measured for the existing intersection of S Beavercreek Road at S Lammer Road. The posted speed limit along S Beavercreek Road is 45 mph, requiring a minimum of 500 feet of intersection sight distance.

Again, the available intersection sight distances were measured from a position 14.5 feet behind the edge of the traveled way with a driver's eye height 3.5 feet above the driveway surface to an oncoming driver's eye height of 3.5 feet above the surface of the oncoming travel lane. Intersection sight distance was measured to be 551 feet to the south and 480 feet to the north. Intersection sight distance to the north is restricted by a crest vertical curve on S Beavercreek Road.

The available intersection sight distance to the north of S Lammer Road along S Beavercreek Road is 15 feet short of the desired minimum intersection sight distance. Accordingly, the addition of site trips to S Lammer Road will require either mitigation measures to improve sight distance or a modification to the Clackamas County sight distance requirements.

Based on the sight distance analysis, adequate sight distance is available in each direction for safe and efficient operation of the intersection of Highway 213 at S Mitchell Road. No sight distance mitigations are necessary or recommended in conjunction with the proposed development.

For the intersection of S Beavercreek Road at S Lammer Road the available sight distance to the north is restricted by a crest vertical curve on S Beavercreek Road. Accordingly, it is recommended that the applicant either provide physical improvements sufficient to provide 500 feet of intersection sight distance to the north or provide an explanation of why the full intersection sight distance standard cannot be practically achieved and obtain approval for a modification to the Clackamas County intersection sight distance standards for this intersection.

TRANSPORTATION PLANNING RULE ANALYSIS

In order to allow the proposed annexation and zone change, Clackamas County must find that the requirements of Oregon's Transportation Planning Rule (OAR 660-012-0060) are met. This rule provides guidance regarding whether and how the potential transportation impacts of a plan amendment must be mitigated. The relevant portions of the Transportation Planning Rule are quoted below, along with responses specific to the proposed annexation and zone change.

660-012-0060 Plan and Land Use Regulation Amendments

- (1) If an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, then the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule. A plan or land use regulation amendment significantly affects a transportation facility if it would:
- (a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

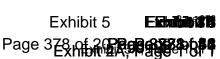
No changes are proposed to the functional classification of existing or planned transportation facilities.

(b) Change standards implementing a functional classification system; or

No changes are proposed to the standards implementing the functional classification system.

- (c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be generated within the area of the amendment may be reduced if the amendment includes an enforceable, ongoing requirement that would demonstrably limit traffic generation, including, but not limited to, transportation demand management. This reduction may diminish or completely eliminate the significant effect of the amendment.
- (A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

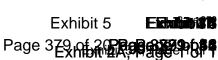
Nearly all trips added to the surrounding street network will be passenger vehicle trips since the proposed zoning accommodates residential development. The volume of traffic generated as described in the Trip Generation section of this report is well within the level that can be safely supported on local streets, and the higher-classification streets outside the immediate impact area are intended to carry high volumes of traffic including passenger vehicles.



- (B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or
- (C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan.

In this instance, the southbound approach on Highway 213 at S Mitchell Lane is projected to operate with a v/c ratio of 0.82 during the evening peak hour at the 2036 planning horizon. This is above the v/c ratio target of 0.75 established in the Oregon Highway Plan. Accordingly, the intersection is projected not to meet the performance standard identified in the state's Transportation System Plan. Absent appropriate mitigation, the proposed zone change would result in further degradation of performance of this approach. Accordingly, the proposed zone change is projected to significantly affect an existing transportation facility. As such, some form of mitigation is required to approve the requested zone change. The mitigation requirements are also detailed in the Transportation Planning Rule as follows:

- (2) If a local government determines that there would be a significant effect, then the local government must ensure that allowed land uses are consistent with the identified function, capacity, and performance standards of the facility measured at the end of the planning period identified in the adopted TSP through one or a combination of the remedies listed in (a) through (e) below, unless the amendment meets the balancing test in subsection (2)(e) of this section or qualifies for partial mitigation in section (11) of this rule. A local government using subsection (2)(e), section (3), section (10) or section (11) to approve an amendment recognizes that additional motor vehicle traffic congestion may result and that other facility providers would not be expected to provide additional capacity for motor vehicles in response to this congestion.
- (a) Adopting measures that demonstrate allowed land uses are consistent with the planned function, capacity, and performance standards of the transportation facility.
- (b) Amending the TSP or comprehensive plan to provide transportation facilities, improvements or services adequate to support the proposed land uses consistent with the requirements of this division; such amendments shall include a funding plan or mechanism consistent with section (4) or include an amendment to the transportation finance plan so that the facility, improvement, or service will be provided by the end of the planning period.
- (c) Amending the TSP to modify the planned function, capacity or performance standards of the transportation facility.
- (d) Providing other measures as a condition of development or through a development agreement or similar funding method, including, but not limited to, transportation system management measures or minor transportation improvements. Local governments shall, as part of the amendment, specify when measures or improvements provided pursuant to this subsection will be provided.



As demonstrated in the operational analysis, installation of a southbound left-turn lane on Highway 213 at Mitchell Lane is more than sufficient to offset the impacts of the proposed zone change. This improvement is projected to result in improved operation of the intersection as compared to background traffic conditions at the planning horizon. Accordingly, if this improvement is required as a condition of development the significant affect of the proposed zone change will be fully addressed, and the Transportation Planning Rule will be satisfied. Since the southbound left-turn lane will be warranted under year 2023 traffic conditions, it is recommended that the turn lane be installed prior to occupancy of the proposed residential development. No other mitigation is recommended in conjunction with the proposed zone change.

CONCLUSIONS

The study intersections are projected to operate acceptably per ODOT and Clackamas County standards through 2023 either with or without the addition of site trips from the proposed development. No operational mitigations are necessary or recommended in conjunction with the proposed development.

The intersection of Highway 213 at S Mitchell Lane is not projected to meet ODOT's performance target under year 2036 traffic conditions either with or without the addition of site trips from the proposed zone change. If a southbound left-turn lane is provided on the Highway 213 approach to Mitchell Lane in conjunction with the proposed zone change, intersection operation is projected to improve as compared to background conditions. Based on the queueing analysis, it is recommended that a storage length of 100 feet be provided for the future southbound left-turn lane on Highway 213 at Mitchell Lane.

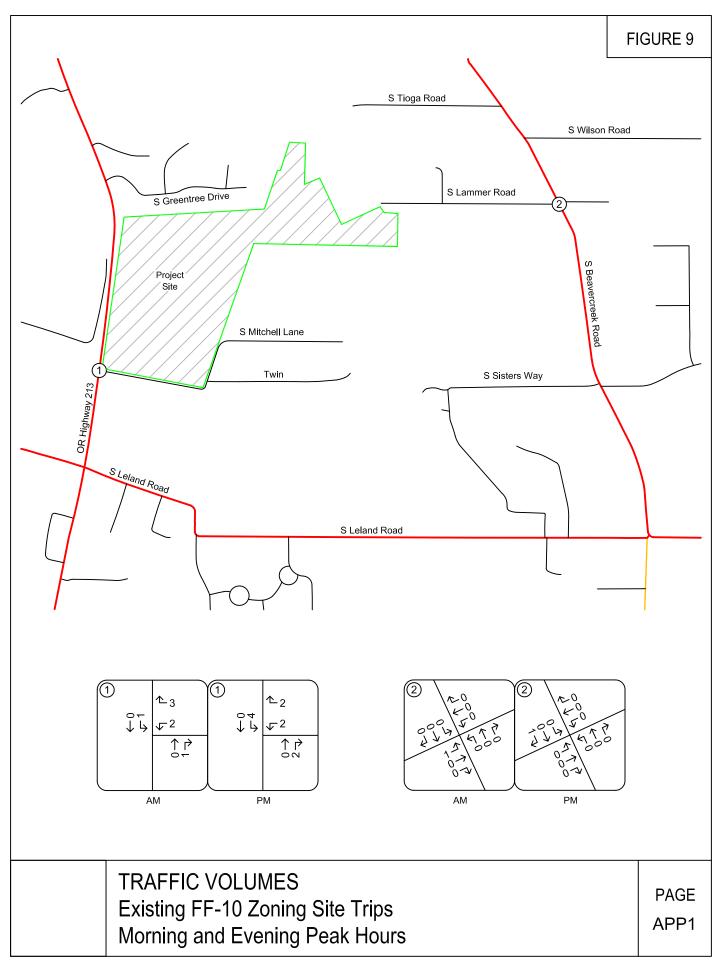
An examination of crash data for the most recent five years shows no significant crash trends that may be indicative of design deficiencies. The intersection crash rates were determined to be well below the 90th percentile crash rate for similar intersections in Oregon. No specific crash mitigations are recommended.

A left-turn lane is projected to be warranted and is recommended for installation on the southbound Highway 213 approach to Mitchell Lane in conjunction with the proposed development. A right-turn lane is currently warranted on the northbound Highway 213 approach to Mitchell Lane; however, the proposed development is not projected to impact the need for this right-turn lane.

Clackamas County should require approval of a modification to the county sight distance standards or physical improvement of sight lines looking north on S Beavercreek Road from S Lammer Road prior to approval of additional homes which will take access to S Beavercreek Road via S Lammer Road.

The proposed development will meet the requirements of Oregon's Transportation Planning Rule provided that a southbound left-turn lane is required as a condition of the proposed zone change. The turn lane should be installed prior to occupancy of the proposed residential subdivision.

APPENDIX



Location: 1 OR 213 & S Mitchell Ln AM

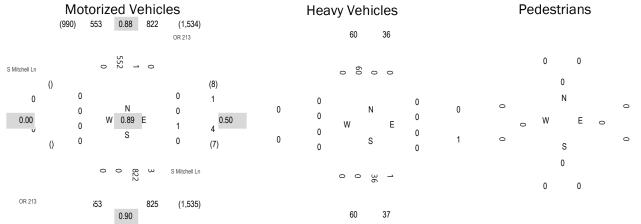
Date: Thursday, April 8, 2021

Peak Hour: 07:20 AM - 08:20 AM

(303) 216-2439 www.alltrafficdata.net

Peak 15-Minutes: 08:05 AM - 08:20 AM

Peak Hour



Note: Total study counts contained in parentheses.

	1.17.707	DLIE
EB	0.0%	0.00
WB	0.0%	0.50
NB	4.5%	0.90
SB	10.8%	0.88
All	7.0%	0.89

Traffic Counts - Motorized Vehicles

	Interval Start Time	U-Turn		litchell Ln bound Thru	Right	S Mitchell Ln Westbound U-Turn Left Thru Right U			U-Turn	OR Northb	213 bound Thru	Right	U-Turn	OR Southb		Pigh	t Total	Rolling Hour	
_	7:00 AM	0-14111	0	0	Nigiti 0	0-14111	0	0	0	0-14111	0	67	0	0-14111	0	24	0	91	1,298
	7:05 AM	0	0	0	0	0	0	0	0	0	0	67	0	0	0	45	0	112	1,305
	7:10 AM	0	0	0	0	0	0	0	0	0	0	68	0	0	0	25	0	93	1,331
	7:15 AM	0	0	0	0	0	0	0	1	0	0	71	0	0	1	35	0	108	1,371
	7:20 AM	0	0	0	0	0	1	0	0	0	0	82	0	0	0	33	0	116	1,379
	7:25 AM	0	0	0	0	0	0	0	0	0	0	69	0	0	0	47	0	116	1,355
	7:30 AM	0	0	0	0	0	0	0	0	0	0	57	0	0	0	41	0	98	1,326
	7:35 AM	0	0	0	0	0	0	0	0	0	0	68	0	0	0	63	0	131	1,316
	7:40 AM	0	0	0	0	0	0	0	0	0	0	54	1	0	0	36	0	91	1,299
	7:45 AM	0	0	0	0	0	0	0	0	0	0	59	0	0	0	52	0	111	1,296
	7:50 AM	0	0	0	0	0	0	0	0	0	0	73	0	0	0	40	0	113	1,277
	7:55 AM	0	0	0	0	0	0	0	0	0	0	73	0	0	0	45	0	118	1,272
	8:00 AM	0	0	0	0	0	0	0	0	0	0	59	0	0	0	39	0	98	1,235
	8:05 AM	0	0	0	0	0	0	0	0	0	0	74	2	0	1	61	0	138	1,200
	8:10 AM	0	0	0	0	0	0	0	0	0	0	80	0	0	0	53	0	133	
	8:15 AM	0	0	0	0	0	0	0	0	0	0	74	0	0	0	42	0	116	
	8:20 AM	0	0	0	0	0	1	0	0	0	0	56	0	0	0	35	0	92	
	8:25 AM	0	0	0	0	0	2	0	0	0	0	47	0	0	0	38	0	87	
	8:30 AM	0	0	0	0	0	0	0	0	0	0	55	0	0	0	33	0	88	
	8:35 AM	0	0	0	0	0	0	0	1	0	0	71	0	0	1	41	0	114	
	8:40 AM	0	0	0	0	0	1	0	1	0	0	57	0	0	0	29	0	88	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	44	1	0	0	47	0	92	
	8:50 AM	0	0	0	0	0	0	0	0	0	0	69	0	0	0	39	0	108	
	8:55 AM	0	0	0	0	0	0	0	0	0	0	37	0	0	0	44	0	81	
	Count Total	0	0	0	0	0	5	0	3	0	0	1,531	4	0	3	987	0	2,533	
	Peak Hour	0	0	0	0	0	1	0	0	0	0	822	3	0	1	552	0	1,379	

Location: 1 OR 213 & S Mitchell Ln AM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval		He	avy Vehicle	es		Interval		Dievelee	on Doody			– Interval –	Dode	antriana/Di		المسادة مساد	
Start Time	EB	NB	WB	SB	Total	 Interval Start Time 	EB	NB	s on Roadv WB	SB	Total	Start Time	EB	NB	cycles on (WB	SB	Total
7:00 AM	0	4	0	2	6	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	5	0	6	11	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	5	0	3	8	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	3	0	4	7	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	3	0	5	8	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	2	0	2	4	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	3	0	1	4	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	1	0	6	7	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	6	0	5	11	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	5	0	7	12	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	5	0	4	9	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	2	0	8	10	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	2	0	1	3	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	4	0	6	10	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	3	0	5	8	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	1	0	10	11	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	5	1	3	9	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	3	0	4	7	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	8	0	5	13	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	4	0	3	7	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	2	0	4	6	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	2	0	6	8	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	5	0	10	15	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	2	0	5	7	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	85	1	115	201	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	37	0	60	97	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Location: 1 OR 213 & S Mitchell Ln PM

Date: Thursday, April 8, 2021

Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

(303) 216-2439 www.alltrafficdata.net

Peak Hour

	Motorized Vehicles	5	Heavy Vehicles	Pedestrians
		(1,341) DR 213	19 24	
S Mitchell Ln	997	449	0 0 0	0 0
0		(10) 7 8 0 0	0 0 N	N 0
0.00	0 W 0.94 E	0.38	0 W E 0	0 0 0 0
	U ·	0 (19)	0 0	S 0
OR 213	75		0 0	0 0
OR 213	198 682 0.83	(1,341)	19 24	

Note: Total study counts contained in parentheses.

	1 1\ /0/	חוור
EB	0.0%	0.00
WB	0.0%	0.38
NB	3.5%	0.83
SB	1.9%	0.95
All	2.5%	0.94

Traffic Counts - Motorized Vehicles

Interval		S M Eastb	itchell Ln ound		S Mitchell Ln Westbound					OR Northb	R 213 bound			R 213 bound		Rolling		
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Righ	t Total	Hour
4:00 PM	0	0	0	0	0	0	0	0	0	0	69	0	0	1	81	0	151	1,679
4:05 PM	0	0	0	0	0	0	0	0	0	0	52	1	0	2	70	0	125	1,666
4:10 PM	0	0	0	0	0	0	0	0	0	0	79	0	0	0	81	0	160	1,687
4:15 PM	0	0	0	0	0	0	0	0	0	0	70	1	0	0	90	0	161	1,692
4:20 PM	0	0	0	0	0	0	0	0	0	0	60	0	0	0	82	0	142	1,667
4:25 PM	0	0	0	0	0	0	0	0	0	0	63	0	0	1	83	0	147	1,660
4:30 PM	0	0	0	0	0	0	0	1	0	0	45	1	0	0	83	0	130	1,652
4:35 PM	0	0	0	0	0	0	0	0	0	0	63	0	0	1	80	0	144	1,666
4:40 PM	0	0	0	0	0	0	0	0	0	0	41	1	0	0	80	0	122	1,657
4:45 PM	0	0	0	0	0	0	0	1	0	0	61	1	0	0	78	0	141	1,683
4:50 PM	0	0	0	0	0	1	0	2	0	0	47	0	0	1	89	0	140	1,689
4:55 PM	0	0	0	0	0	0	0	1	0	0	41	0	0	0	74	0	116	1,673
5:00 PM	0	0	0	0	0	0	0	2	0	0	55	1	0	0	80	0	138	1,675
5:05 PM	0	0	0	0	0	0	0	0	0	0	50	1	0	1	94	0	146	
5:10 PM	0	0	0	0	0	0	0	0	0	0	79	1	0	1	84	0	165	
5:15 PM	0	0	0	0	0	0	0	0	0	0	50	0	0	1	85	0	136	
5:20 PM	0	0	0	0	0	0	0	0	0	0	56	0	0	0	79	0	135	
5:25 PM	0	0	0	0	0	0	0	0	0	0	49	0	0	0	90	0	139	
5:30 PM	0	0	0	0	0	0	0	0	0	0	54	0	0	0	90	0	144	
5:35 PM	0	0	0	0	0	0	0	1	0	0	54	1	0	0	79	0	135	
5:40 PM	0	0	0	0	0	0	0	1	0	0	49	0	0	0	98	0	148	
5:45 PM	0	0	0	0	0	0	0	0	0	0	55	0	0	1	91	0	147	
5:50 PM	0	0	0	0	0	0	0	0	0	0	40	0	0	0	84	0	124	
5:55 PM	0	0	0	0	0	0	0	0	0	0	50	0	0	0	68	0	118	
Count Total	0	0	0	0	0	1	0	9	0	0	1,332	9	0	10	1,993	0	3,354	
Peak Hour	0	0	0	0	0	1	0	7	0	0	675	7	0	5	997	0	1,692	

Location: 1 OR 213 & S Mitchell Ln PM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval			avy Vehicl			– Interval –		- Ricycles	on Roadw	/a∨		– Interval –	Pedes	strians/Bio	eveles on (Crosswalk	
Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB'	on Roadw WB	SB	Total	Start Time	EB	NB	cycles on (WB	SB	Total
4:00 PM	0	2	0	1	3	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	6	0	5	11	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	2	0	2	4	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	4	0	1	5	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	2	0	2	4	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	3	0	1	4	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	1	0	1	2	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	2	0	1	3	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	1	0	4	5	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	3	0	2	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	2	0	1	3	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	2	0	0	2	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	1	0	2	3	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	1	1	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	3	0	3	6	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	3	0	1	4	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	2	0	1	3	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	2	0	0	2	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	3	3	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	6	6	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	1	1	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	3	0	0	3	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	1	0	2	3	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	2	2	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	45	0	43	88	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	24	0	19	43	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Location: 1 S Beavercreek Rd & S Lammer Rd AM

Date: Wednesday, September 29, 2021

Peak Hour: 07:30 AM - 08:30 AM

(303) 216-2439 www.alltrafficdata.net

Peak 15-Minutes: 07:35 AM - 07:50 AM

Peak Hour

Motorized Vehicles	Heavy Vehicles	Pedestrians
(381) 220 0.71 485 (793) S Beavercreek F	40 40	
S Lammer Rd 5 5 0 0	0 8 0 0	0 0
	0 0	0 N
0.54 9 N 0 0 W 0.87 E 0	0 0 N E	0 0 W E 0
, S	$0 \qquad 0 \qquad 0 \qquad s$	0 0 S
0 2 47 0 SLammer Rd	0 0 1	0
	0 16	0 0
S Beavercreek Rd !16 478 (779) 0.82	18 16	

Note: Total study counts contained in parentheses.

	1 1\ /0/	DITE
EB	0.0%	0.54
WB	0.0%	0.00
NB	3.3%	0.82
SB	8.2%	0.71
All	4.8%	0.87

Traffic Counts - Motorized Vehicles

Interval Start Time		Easth	mmer Ro			Westbo				Northbo				Southb			_	Rolling
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	t Total	Hour
7:00 AM	0	0	0	0	0	0	0	0	0	1	25	0	0	0	13	0	39	629
7:05 AM	0	3	0	0	0	0	0	0	0	0	19	0	0	0	15	0	37	637
7:10 AM	0	1	0	0	0	0	0	0	0	0	33	0	0	0	16	0	50	658
7:15 AM	0	2	0	0	0	0	0	0	0	0	28	0	0	0	9	0	39	663
7:20 AM	0	1	0	0	0	0	0	0	0	0	26	0	0	0	13	0	40	679
7:25 AM	0	0	0	0	0	0	0	0	0	0	20	0	0	0	17	0	37	690
7:30 AM	0	0	0	0	0	0	0	0	0	0	41	0	0	0	23	0	64	709
7:35 AM	0	0	0	0	0	0	0	0	0	1	33	0	0	0	33	0	67	701
7:40 AM	0	2	0	1	0	0	0	0	0	0	41	0	0	0	21	1	66	674
7:45 AM	0	1	0	0	0	0	0	0	0	0	51	0	0	0	18	0	70	637
7:50 AM	0	1	0	0	0	0	0	0	0	1	53	0	0	0	10	1	66	604
7:55 AM	0	0	0	0	0	0	0	0	0	0	37	0	0	0	17	0	54	576
8:00 AM	0	1	0	0	0	0	0	0	0	0	33	0	0	0	13	0	47	552
8:05 AM	1	0	0	0	0	0	0	0	0	0	38	0	0	0	19	0	58	
8:10 AM	0	1	0	0	0	0	0	0	0	0	33	0	0	0	21	0	55	
8:15 AM	0	1	0	0	0	0	0	0	0	0	45	0	0	0	7	2	55	
8:20 AM	0	1	0	0	0	0	0	0	0	0	34	0	0	0	16	0	51	
8:25 AM	0	1	0	0	0	0	0	0	0	0	37	0	0	0	17	1	56	
8:30 AM	0	1	0	0	0	0	0	0	0	0	39	0	0	0	16	0	56	
8:35 AM	0	0	0	0	0	0	0	0	0	0	26	0	0	0	13	1	40	
8:40 AM	1	0	0	0	0	0	0	0	0	0	20	0	0	0	8	0	29	
8:45 AM	0	1	0	0	0	0	0	0	0	0	22	0	0	0	14	0	37	
8:50 AM	0	0	0	0	0	0	0	0	0	1	23	0	0	0	14	0	38	
8:55 AM	0	0	0	0	0	0	0	0	0	0	18	0	0	0	10	2	30	
Count Total	2	18	0	1	0	0	0	0	0	4	775	0	0	0	373	8	1,181	
Peak Hour	1	9	0	1	0	0	0	0	0	2	476	0	0	0	215	5	709	_

Location: 1 S Beavercreek Rd & S Lammer Rd AM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval		Hea	avy Vehicle	es		– Interval –		Diovolos	on Boody	(0)/		– Interval –	Doda	otriana/Di	avalon on	Crosswalk	
Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	on Roadw WB	SB	Total	Start Time	EB	NB	WB WB	Crosswalk SB	Total
7:00 AM	0	0	0	2	2	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	2	2	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	1	0	2	3	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	1	1	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	1	0	0	1	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	1	0	1	2	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	0	0	2	2	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	2	0	2	4	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	1	1	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	5	0	0	5	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	1	0	0	1	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	4	4	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	2	0	1	3	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	2	0	0	2	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	2	2	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	2	0	1	3	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	1	0	2	3	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	1	0	3	4	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	1	1	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	4	0	0	4	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	2	0	2	4	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	1	0	0	1	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	1	0	1	2	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	27	0	30	57	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	16	0	18	34	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Location: 1 S Beavercreek Rd & S Lammer Rd PM

Date: Wednesday, September 29, 2021 **Peak Hour:** 04:55 PM - 05:55 PM

(303) 216-2439

www.alltrafficdata.net

Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour

	Mo	toriz	ed Ve	ehicl	es			Hea	vy Veh	icles				Ped	destri	ians	,	
	(932)	497	0.94	199	(444) S Beavercre	ek Rd			3	5								
S Lammer Rd		14	1 482	0		(1)			ο ω	0 0					0 0	0		
0.67	0 5 0	V	N V 0.92	E	0 1 0	0.25	0	0	W	N E	0	0	0	0	N W	E	0	0
(14)	1		S		0	(4)	0	0		S	0	0	0		S			0
		0	194 0	2	S Lammer Ro	Ė			0 0	5 0					0	0		
S Beavercreek R	i	83	0.85	196	(433)				3	5					v	J		

Note: Total study counts contained in parentheses.

	1.11/0/	DLIE
EB	0.0%	0.67
WB	0.0%	0.25
NB	2.6%	0.85
SB	0.6%	0.94
All	1 1%	0.92

Traffic Counts - Motorized Vehicles

Interval		S La Eastb	mmer Ro	I		S Lam Westbo	mer Rd und		S	Beaver	creek Rd ound			Beaver Southb	creek Rd ound			Rolling
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Righ	t Total	Hour
4:00 PM	0	0	0	0	0	0	0	0	0	0	27	0	0	0	50	4	81	697
4:05 PM	0	2	0	0	0	0	0	0	0	0	18	0	0	0	45	2	67	676
4:10 PM	0	1	0	0	0	0	0	0	0	0	17	0	0	0	34	2	54	670
4:15 PM	0	0	0	0	0	0	0	0	0	0	18	0	0	1	30	1	50	685
4:20 PM	0	2	0	0	0	0	0	0	0	0	20	0	0	0	45	2	69	686
4:25 PM	0	0	0	0	0	0	0	0	0	0	18	0	0	0	33	0	51	670
4:30 PM	0	0	0	0	0	0	0	0	0	0	21	0	0	0	25	0	46	679
4:35 PM	0	0	0	0	0	0	0	0	0	0	26	0	0	0	37	0	63	694
4:40 PM	0	0	0	0	0	0	0	0	0	0	24	0	0	0	39	2	65	692
4:45 PM	0	1	0	0	0	0	0	0	0	0	17	0	0	0	23	2	43	691
4:50 PM	0	2	0	0	0	0	0	0	0	0	24	0	0	0	29	0	55	695
4:55 PM	0	0	0	0	0	0	0	0	0	0	12	0	0	0	41	0	53	700
5:00 PM	0	0	0	0	0	0	0	0	0	0	17	0	0	0	41	2	60	683
5:05 PM	0	0	0	0	0	0	0	0	0	0	22	0	0	0	37	2	61	
5:10 PM	0	1	0	0	0	0	0	0	0	0	22	0	0	0	45	1	69	
5:15 PM	0	0	0	0	0	0	0	0	0	0	18	0	0	1	29	3	51	
5:20 PM	0	0	0	1	0	0	0	0	0	0	15	0	0	0	37	0	53	
5:25 PM	0	1	0	0	0	0	0	0	0	0	14	0	0	0	44	1	60	
5:30 PM	0	1	0	0	0	0	0	0	0	0	17	1	0	0	41	1	61	
5:35 PM	0	0	0	0	0	0	1	0	0	0	15	0	0	0	44	1	61	
5:40 PM	0	0	0	0	0	0	0	0	0	0	24	0	0	0	38	2	64	
5:45 PM	0	1	0	0	0	0	0	0	0	0	9	0	0	0	37	0	47	
5:50 PM	0	1	0	0	0	0	0	0	0	0	9	1	0	0	48	1	60	
5:55 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	28	1	36	
Count Total	0	13	0	1	0	0	1	0	0	0	431	2	0	2	900	30	1,380	
Peak Hour	0	5	0	1	0	0	1	0	0	0	194	2	0	1	482	14	700	

Location: 1 S Beavercreek Rd & S Lammer Rd PM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval		He	avy Vehicl	es			•	-									
Start Time	EB	NB	WB	SB	Total	 Interval - Start Time 	EB	Bicycles NB	on Roadv WB	vay SB	Total	IntervalStart Time	EB Pede	strians/Bio NB	cycles on (WB	Crosswalk SB	Total
4:00 PM	0	1	0	1	2	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	1	0	0	1	2	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	1	0	2	3	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	1	0	0	1	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	2	0	0	2	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	1	0	1	2	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	2	2	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	2	0	0	2	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	1	0	0	1	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	2	0	0	2	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	1	1	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	1	1	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	1	1	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	1	1	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	1	11	0	11	23	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	5	0	3	8	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

OR	OR213; MP 8.90; CASCADE HIGHWAY SOUTH NO. 160;	Site Name	Mulino (03-020)
4	0.94 mile south of S Spangler Rd	Installed	4pril, 2009

I	HISTORICAL ANNUAL TRAFFIC DATA	CAL AN	NUAL	TRAFFI	C DAT	1
	Annual		Critical \	Critical Values as percent of	rcent of	
700	Average	A	nnual Aver	Annual Average Daily Traffic (AADT)	raffic (AAD)	٦)
ב	Daily Traffic	Max	Max	10th	20th	30th
	(AADT)	Day	Hour	Hour	Hour	Hour
2010	13007	119	10.1	9.6	9.6	9.5
2011	12962	124	10.2	9.7	9.6	9.5
2012	12721	122	10.1	9.8	9.6	9.5
2013	13132	122	6.6	9.6	9.5	9.5
2014	13552	126	10.0	9.7	9.5	9.4
2015	14402	122	6.6	9.4	9.2	9.2
2016	15132	125	6.6	9.4	9.3	9.2
2017	15430	137	9.8	9.5	9.3	9.2
2018	15249	129	9.7	9.5	9.4	9.3
2019	15821	125	9.6	9.5	9.3	9.2

Month January Average AADT January 15253 96 February 14909 94 March 16212 102 April 16690 105 May 16599 105 June 17376 110 July 17601 111	AADT Average State of the part of	## AADT %
Average 15253 14909 16212 16690 16599 17376 17601		% AADT 91 88 98 101
15253 14909 16212 16690 16599 17376		91 88 98 101
14909 16212 16690 16599 17376		88 98 101
16212 16690 16599 17376 17601		98 101 102
16690 16599 17376 17601		101
16599 17376 17601		102
17376		
17601	110 16872	107
	111 16997	107
August 17620 111	111 16831	106
September 17047 108	108 16396	104
October 17238 109	109 16352	103
November 16539 105	105 15542	86
December 15906 101	101 15093	95

Table 1. Continued

Intersection						
Int Delay, s/veh	0					
		WEE	NDT	NDD	CDI	CDT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			0			F
Traffic Vol, veh/h	1	0	943	3	1	599
Future Vol, veh/h	1	0	943	3	1	599
Conflicting Peds, #/hr		0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storag	e, # 0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	5	2	2	11
Mvmt Flow	1	0	1060	3	1	673
Major/Mina-	Minari		Apic=1		Malara	
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1737	1062	0	0	1063	0
Stage 1	1062	-	-	-	-	-
Stage 2	675	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518		-	-	2.218	-
Pot Cap-1 Maneuver	96	272	-	-	655	-
Stage 1	332	-	-	-	-	-
Stage 2	506	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	96	272	-	-	655	-
Mov Cap-2 Maneuver		-	-	-	-	-
Stage 1	332	-	-	-	-	-
Stage 2	505	-	_	_	-	
2.230 L	300					
	14/5		ND		0.5	
Approach	WB		NB		SB	
HCM Control Delay, s			0		0	
HCM LOS	Е					
Minor Lane/Major Mvr	nt	NBT	NRRV	VBLn1	SBL	SBT
Capacity (veh/h)		IVDI	TVDICV	96	655	001
HCM Lane V/C Ratio		-		0.012		-
	1	-		42.9	10.5	0
HCM Lang LOS	7	-	-			A
HCM Lane LOS	2)	-	-	E	В	
HCM 95th %tile Q(veh	1)	-	-	0	0	-

Scenario 1 Cereghino Subdivision 7:20 am 04/08/2020 2021 Existing AM Peak Hour MTA

Synchro 11 Light Report Page 1

Intersection												
Int Delay, s/veh	0.3											
		EDT	EDD	WDI	WDT	MDD	NDI	NDT	NDD	CDI	CDT	CDD
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	10	•		•		•	•	477	•	•	045	_
Traffic Vol, veh/h	10	0	1	0	0	0	2	476	0	0	215	5
Future Vol, veh/h	10	0	1	0	0	0	2	476	0	0	215	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage	2,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	3	2	2	8	2
Mvmt Flow	11	0	1	0	0	0	2	547	0	0	247	6
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	801	801	250	802	804	547	253	0	0	547	0	0
Stage 1	250	250	-	551	551	_	-	-	-		-	-
Stage 2	551	551	_	251	253	_	_	-	-	_	_	_
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52		6.12	5.52			-	-		_	_
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	_	2.218	_	_
Pot Cap-1 Maneuver	303	318	789	302	316	537	1312	-	-	1022	-	-
Stage 1	754	700	-	519	515			_	_		_	_
Stage 2	519	515	-	753	698	_	_	-	-	-	-	-
Platoon blocked, %		3.3		.00	3,3			_	-		_	-
Mov Cap-1 Maneuver	302	317	789	301	315	537	1312	-	-	1022	-	-
Mov Cap-2 Maneuver	302	317	-	301	315	- 30,	.012	_	_		_	_
Stage 1	752	700	-	518	514	_	_	_	_	_	_	_
Stage 2	518	514	_	752	698	_	_	_	_	_	_	_
Clayo Z	310	317		, 02	370							
Approach	EB			WB			NB			SB		
HCM Control Delay, s	16.7			0			0			0		
HCM LOS	C			A			- 0			U		
TOW LOS	C			Λ								
Minor Lane/Major Mvm	nt	NBL	NBT	NBR I	EBLn1V	VBI n1	SBL	SBT	SBR			
Capacity (veh/h)		1312		-	320	-	1022					
HCM Lane V/C Ratio		0.002	-	-	0.04		1022	_	_			
HCM Control Delay (s)		7.7	0		16.7	0	0	-	-			
HCM Lane LOS				-				-	-			
	١	A	А	-	C	А	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-			

Scenario 1 Cereghino Subdivision 7:20 am 04/08/2020 2021 Existing AM Peak Hour MTA

Synchro 11 Light Report Page 2

Exhibit 5 Exhibits

Page 325 A Repair 1984

Intersection						
Int Delay, s/veh	0.1					
		14/55		NES	051	05=
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	7	774	7	5	1144
Future Vol, veh/h	1	7	774	7	5	1144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	e, # 0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	4	2	2	2
Mvmt Flow	1	7	823	7	5	1217
		_		_		
	Minor1		/lajor1		Major2	
Conflicting Flow All	2054	827	0	0	830	0
Stage 1	827	-	-	-	-	-
Stage 2	1227	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	61	371	-	-	802	-
Stage 1	430	-	-	-	-	-
Stage 2	277	_	-	-	-	_
Platoon blocked, %	,		_	_		_
Mov Cap-1 Maneuver	60	371		_	802	_
Mov Cap-1 Maneuver	60	-	_	_	- 002	_
Stage 1	430					
Stage 2	272	_		_		_
Slaye 2	212	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	21.6		0		0	
HCM LOS	С					
		NOT	NES	NDL 4	051	OPT
Minor Lane/Major Mvm	I	NBT	NRK/	VBLn1	SBL	SBT
Capacity (veh/h)			-	225	802	-
HCM Lane V/C Ratio		-	-	0.038		-
HCM Lane V/C Ratio HCM Control Delay (s)		-	-	0.038 21.6	0.007 9.5	0
HCM Lane V/C Ratio				0.038		

Scenario 2 Cereghino Subdivision 4:15 pm 04/08/2021 2021 Existing PM Peak Hour MTA

Synchro 11 Light Report Page 1

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	1	0	1	0	0	194	2	1	482	14
Future Vol, veh/h	5	0	1	0	1	0	0	194	2	1	482	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage	e,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	3	2	2	2	2
Mvmt Flow	5	0	1	0	1	0	0	211	2	1	524	15
Major/Minor	Minor			Minor1			Major1			Majora		
	Minor2	7.17		Minor1	750		Major1			Major2		
Conflicting Flow All	747	747	532	746	753	212	539	0	0	213	0	0
Stage 1	534	534	-	212	212	-	-	-	-	-	-	-
Stage 2	213	213	-	534	541	- / 00	-	-	-	4.40	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	329	341	547	330	339	828	1029	-	-	1357	-	-
Stage 1	530	524	-	790	727	-	-	-	-	-	-	-
Stage 2	789	726	-	530	521	-	-	-	-	-	-	-
Platoon blocked, %						_		-	-		-	-
Mov Cap-1 Maneuver	328	341	547	329	339	828	1029	-	-	1357	-	-
Mov Cap-2 Maneuver	328	341	-	329	339	-	-	-	-	-	-	-
Stage 1	530	523	-	790	727	-	-	-	-	-	-	-
Stage 2	788	726	-	528	520	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	15.5			15.7			0			0		
HCM LOS	13.5 C			C			U			U		
TIOWI LOS	C			C								
Minor Lane/Major Mvn	nt	NBL	NBT	NRR I	EBLn1V	VBI n1	SBL	SBT	SBR			
Capacity (veh/h)		1029	1,01	-	054	339	1357	OD!	ODIT			
HCM Lane V/C Ratio		1029	-		0.019	0.003	0.001	-	-			
HCM Control Delay (s	١	0	-	-	15.5	15.7	7.7	0				
HCM Lane LOS)		-		15.5 C	15.7 C			-			
HCM 95th %tile Q(veh	,)	A	-	-			A	Α	-			
ucivi Apili Wille Mikel	IJ	0	-	-	0.1	0	0	-	-			

Scenario 2 Cereghino Subdivision 4:15 pm 04/08/2021 2021 Existing PM Peak Hour MTA

Synchro 11 Light Report Page 2

Exhibit 5 Exhibits Page 327 A R Page 327 A R

Land Use Description: Single-Family Detached Housing

ITE Land Use Code: 210

Independent Variable: Dwelling Units

Quantity: 49 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic

Trip Rate: 0.74 trips per dwelling unit

Directional Distribution: 25% Entering 75% Exiting

PM Peak Hour of Adjacent Street Traffic

Trip Rate: 0.99 trips per dwelling unit

Directional Distribution: 63% Entering 37% Exiting

Total Weekday Traffic

Trip Rate: 9.44 trips per dwelling unit

Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

49 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	9	27	36
PM Peak Hour	31	18	49
Weekday	231	231	462

RRFF-5 Zoning

"Rural Residential Farm and Forest 5-Acre" (RRFF-5) zoning allows for residential development of the site with a minimum lot size of five acres. At this maximum density, the 110 acres could be developed with up to 22 single-family homes, a net increase of 11 dwelling units as compared to the existing FF-10 zoning.

The trip generation estimate for this zoning scenario was also prepared using data for ITE land use code 210, *Single-Family Detached Housing* based on the number of dwelling units.

Based on the analysis, this potential zone change would result in a net increase of up to 8 trips during the morning peak hour, 11 trips during the evening peak hour, and 104 additional daily trips as compared to the maximum development potential under the existing zoning. A summary of the trip generation calculations is provided in Table 1 below.

Table 1 - RRFF-5 Zone Change Trip Generation Summary

	Morn	ing Peal	k Hour	Eve	ning Peal	k Hour	Daily
	In	Out	Total	In	Out	Total	Total
Proposed RRFF-5 Zoning (22 homes)	4	12	16	14	8	22	208
-Existing FF-10 Zoning (11 homes)	-2	-6	-8	-7	-4	-11	-104
Net Increase in Site Trips	2	6	8	7	4	11	104

RA-2 Zoning

"Rural Area Residential 2-Acre" (RA-2) zoning allows for residential development of the site with a minimum lot size of two acres. At this maximum density, the 110 acres could be developed with up to 55 single-family homes, a net increase of 44 dwelling units as compared to the existing FF-10 zoning.

The trip generation estimate for this zoning scenario was again prepared using data for ITE land use code 210, *Single-Family Detached Housing* based on the number of dwelling units.

Based on the analysis, the proposed zone change could result in a net increase of up to 33 trips during the morning peak hour, 43 trips during the evening peak hour, and 416 daily trips as compared to the maximum development potential under the existing zoning. A summary of the trip generation calculations is provided in Table 2 below.

Table 2: RA-2 Zone Change Trip Generation

	Morn	ing Peal	k Hour	Eve	ning Peal	k Hour	Daily
	In	Out	Total	In	Out	Total	Total
Proposed RA-2 Zoning (55 homes)	10	31	41	34	20	54	520
-Existing FF-10 Zoning (11 homes)	-2	-6	-8	-7	-4	-11	-104
Net Increase in Site Trips	8	25	33	27	16	43	416

Appendix N - South System Exhibit 5 Exhibit 5

Transportation Planning Rule Considerations

Oregon's Transportation Planning Rule (OAR 660-012-0060) requires that when a plan amendment (such as a zone change) is proposed for a property, a determination must be made as to whether the amendment would result in a "significant effect" on the transportation system, as measured at the appropriate long-range planning horizon. Clackamas County's current Transportation System Plan contemplates operations and improvement needs through the year 2033; however, a long-range planning analysis must consider conditions at least 15 years into the future. Accordingly, the appropriate long-range planning horizon was determined to be represented by year 2036 conditions.

It is anticipated that either of the proposed zone change options may significantly impact the future operation of the intersection of Oregon Highway 213 at S Mitchell Lane, since additional residential development would result in increased traffic volumes for the southbound left turn from Highway 213 onto S Mitchell Lane. This intersection does not currently have a dedicated left-turn refuge, and since left-turning vehicles must wait for gaps in the relatively high northbound through traffic stream the through capacity of the southbound lane would be materially impacted by vehicles stopping in the lane while waiting to make left turns.

It should be noted that Oregon Highway Plan policy 1F5 provides that:

"If an amendment subject to OAR 660-012-0060 increases the volume to capacity ratio further, or degrades the performance of a facility so that it does not meet an adopted mobility target at the planning horizon, it will significantly affect the facility unless it falls within the thresholds listed below for a small increase in traffic." [emphasis is mine]

It further defines that:

Appendix N - South System

The threshold for a small increase in traffic between the existing plan and the proposed amendment is defined in terms of the increase in total average daily trip volumes as follows:

• Any proposed amendment that does not increase the average daily trips by more than 400.

Based on the trip generation analysis, a zone change to RRFF-5 would result in an increase of 104 average daily trips, which meets the definition of a small increase in traffic and would therefore be allowable without detailed analysis under Oregon's Transportation Planning Rule. Alternatively, a detailed analysis of operation at the long-range planning horizon including identification of appropriate mitigation would be required to support a zone change to RA-2 since this zoning would result in an increase of more than 400 average daily trips.

Exhibit 5 Exhibit 5 Page 401 nf.2 Page 401 nf.2

Near-Term Safety and Operational Needs

Based on count data collected on Thursday April 8, 2021 the intersection of Oregon Highway 213 at S Mitchell Lane currently accommodates 5 southbound left-turns during the evening peak hour. Based on the travel speeds and volumes along the highway, ODOT's warrant threshold for requiring installation of a southbound left-turn lane will be met once traffic volumes reach more than 10 vehicles per hour. Assuming that 60 percent of site trips are to and from the north, this threshold would be met during the evening peak hour with the addition of 15 or more new homes taking access via S Mitchell Lane. This indicates that a new southbound left-turn lane could be needed to support a zone change either to RRFF-5 or RA-2 zoning.

In addition to examination of the volume-based warrant thresholds, the Oregon Department of Transportation may determine that a left-turn lane is needed based on geometric concerns including operating speeds and other related safety concerns. Accordingly, the potential need for a southbound left-turn lane was also discussed with Abraham Tayar, Development Review Engineering Lead for the Oregon Department of Transportation. Mr. Tayar indicated that due to the high speeds and high volumes of traffic on Oregon Highway 213 a southbound left-turn lane would be requested in conjunction with any new development taking access via S Mitchell Lane, regardless of whether or not the development would trigger the volume-based warrants.

Based on the analysis and discussion with ODOT, it is anticipated that a southbound left-turn lane will be required in conjunction with development under any of the zoning scenarios, including the existing FF-10 zoning.

Proportionality Considerations

When improvements are required in conjunction with a proposed development, the approving jurisdiction must determine that the requested improvements are "roughly proportional" to the impact of the proposed development. In this instance, the design of a southbound left-turn lane on Oregon Highway 213 serving S Mitchell Lane would need to meet the requirements of ODOT's Highway Design Manual based on a minimum design speed of 55 mph. Standard design parameters would include a minimum storage length of 100 feet, deceleration length of 320 feet, and appropriate tapers at a rate of 55 to 1 between the existing two-lane cross section and a three-lane cross section. Based on these factors, the overall length of the highway improvements required to install the turn lane is substantial (well in excess of 1,000 feet), and even if adequate right-of-way is available the construction costs would be significant.

Since ODOT has indicated that a turn lane will be needed regardless of the level of development proposed within the subject properties, maximizing the level of development will allow the required improvements to be constructed in a manner that is proportionate to the actual impacts of the development and therefore conforms to the requirements of federal law.

Additionally, it should be noted that the addition of a left-turn lane at the intersection will improve the safety and operation of the intersection as compared to existing conditions, since vehicles turning onto S Mitchell Lane from the highway will be able to wait for gaps in traffic without impeding the flow of through

Exhibit 5 **Exhibit 9**Page 402 of 200 **Exhibit 9**

Cereghino Subdivision – Zone Change Analysis May 20, 2021 Page 5 of 5

traffic southbound on the highway, and since vehicles exiting S Mitchell Lane onto Highway 213 southbound will have a refuge space available to facilitate two-stage left turns. These occur when drivers exiting Mitchell Lane wait for a gap in the northbound traffic stream, then enter the median area, then wait for a gap in the southbound traffic stream to merge into the southbound travel lane. Accommodating this turn type will significantly reduce the average delays experienced by drivers exiting from S Mitchell Lane.

Conclusions

Based on the analysis, it is recommended that RA-2 zoning be proposed for the subject properties. ODOT has indicated that costly improvements will be required at the intersection of Oregon Highway 213 and S Mitchell Lane, and this higher-density zoning will ensure that the required mitigation is proportionate to the actual impacts of future development within the subject properties. A detailed operational and safety analysis for this proposed zoning including an assessment of impacts and mitigation needs to address the requirements of Oregon's Transportation Planning Rule will be provided in the Cereghino Subdivision Traffic Impact Study.

If you have any questions regarding this analysis or the associated recommendations, please feel free to contact me at (503)537-8511 or mike.ard@gmail.com.

Exhibit 5 Exhibit 5 Page 403 nf 2012 Page 403 nf 2012 Page 403 nf 2012 Page 403 nf 401

Appendix

Land Use Description: Single-Family Detached Housing

ITE Land Use Code: 210

Independent Variable: Dwelling Units

Quantity: 11 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic

Trip Rate: 0.74 trips per dwelling unit

Directional Distribution: 25% Entering 75% Exiting

PM Peak Hour of Adjacent Street Traffic

Trip Rate: 0.99 trips per dwelling unit

Directional Distribution: 63% Entering 37% Exiting

Total Weekday Traffic

Trip Rate: 9.44 trips per dwelling unit

Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

11 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	2	6	8
PM Peak Hour	7	4	11
Weekday	52	52	104

Land Use Description: Single-Family Detached Housing

ITE Land Use Code: 210

Independent Variable: Dwelling Units

Quantity: 22 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic

Trip Rate: 0.74 trips per dwelling unit

Directional Distribution: 25% Entering 75% Exiting

PM Peak Hour of Adjacent Street Traffic

Trip Rate: 0.99 trips per dwelling unit

Directional Distribution: 63% Entering 37% Exiting

Total Weekday Traffic

Trip Rate: 9.44 trips per dwelling unit

Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

22 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	4	12	16
PM Peak Hour	14	8	22
Weekday	104	104	208

Land Use Description: Single-Family Detached Housing

ITE Land Use Code: 210

Independent Variable: Dwelling Units

Quantity: 55 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic

Trip Rate: 0.74 trips per dwelling unit

Directional Distribution: 25% Entering 75% Exiting

PM Peak Hour of Adjacent Street Traffic

Trip Rate: 0.99 trips per dwelling unit

Directional Distribution: 63% Entering 37% Exiting

Total Weekday Traffic

Trip Rate: 9.44 trips per dwelling unit

Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

55 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	10	31	41
PM Peak Hour	34	20	54
Weekday	260	260	520

Site id	HWY	MP	DIR	HS	Description	2016	2017	2018	2038	RSQ
3419	160	0.05	1		0.02 mile north of Washington Street	00902			84300	MODEL
3420	160	0.16	1		0.02 mile south of Washington Street	50200			00985	MODEL
3421	160	0.50	1		0.02 mile south of Redland Road	38700			48700	MODEL
3422	160	3.21	1		0.02 mile south of Beavercreek Road	27200			40300	MODEL
					0.10 mile south of Molalla Avenue					
3424	160	3.69	1		(entrance to Crackanias Community College)	19200			28400	MODEL
3425	160	4.38	1		0.02 mile north of S Henrici Road	19200			24200	MODEL
3426	160	5.71	1		0.02 mile north of S Leland Road	15800			19000	MODEL
3427	160	7.14	1		0.02 mile south of S Carus Road	15200			17600	MODEL
					Mulino Automatic Traffic Recorder, Sta.					
0000		0	,		03-020, 0.94 mile south of S Spangler	15100			1000	114071
3020	100	8.90	-		Road O Of mile courth of S Mulius Bond of	00161			1/800	MODEL
3429	160	11.03	1		Wulino	14900			17700	MODEL
3430	160	12.30	1		0.05 mile north of S Union Mills Road	15200			18000	MODEL
3431	160	13.76	1		0.02 mile north of S Molalla Road	12900			16800	MODEL
3432	160	13.80	1		0.02 mile south of S Molalla Road	10300			14700	MODEL
3433	160	15.69	1		0.02 mile north of S Toliver Road	10600			15300	MODEL
					0.02 mile north of Woodburn-Estacada					
3434	160	16.08	1		Highway (OR211)	11000			15900	MODEL
		,			0.02 mile south of Woodburn-Estacada	9				
3435	160	16.12	1		Highway (OR211)	2600			8300	MODEL
3436	160	20.30	1		0.02 mile south of S Monte Cristo Road	4700			6100	MODEL
					Marquam Automatic Traffic Recorder,					
2012	160	21.00	-		Sta. 03-013, 2.05 miles northeast of	7000			0029	MODEL
3438	160	24.20	-		At Clackamas-Marion County Line	4600			5400	0.5635
3439	160	26.45	1		0.02 mile north of Abiqua Road NE	4200			2000	0.6248
3440	160	26.49	1		0.02 mile south of Abiqua Road NE	4900			2700	0.4296
3441	160	27.30	1		0.02 mile south of S Abiqua Road NE	5700			0029	0.4294
					0.05 mile west of Meridian Road NE					
3442	160	28.76	-		(Monitor Road)	5500			0009	0.0003
3443	160	29.57	-		0.02 mile east of N 2nd Street	6700			8300	0.4833
3444	160	29 63	-		0.02 mile east of Hillsboro-Silverton Hiohway (OR214-NR)	7000			8100	0.7015
		0.00	,		0.02 mile east of Hillsboro-Silverton					
3445	160	29.69	1		Highway (OR214-SB)	3300			3700	0.0168

Exhibit 5 **Exhibits**Page 409 162 (**Page 409**) **184**

Intersection						
Int Delay, s/veh	0					
		WED	NDT	NDD	CDI	CDT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	0	958	3	1	609
Future Vol, veh/h	1	0	958	3	1	609
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	e,# 0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	5	2	2	11
Mvmt Flow	1	0	1076	3	1	684
					•	
	Minor1		/lajor1		Major2	
Conflicting Flow All	1764	1078	0	0	1079	0
Stage 1	1078	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy		3.318	-	-	2.218	-
Pot Cap-1 Maneuver	92	266	_	-	646	-
Stage 1	327	-	_	-	-	-
Stage 2	500	-	_	_	-	-
Platoon blocked, %	300		_	_		_
Mov Cap-1 Maneuver	92	266			646	
Mov Cap-1 Maneuver	92	200			040	
	327	-	-	-	-	-
Stage 1		-	-	-	-	-
Stage 2	499	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	44.6		0		0	
HCM LOS	E					
,	_					
Minor Lane/Major Mvn	nt	NBT	NBRV	VBLn1	SBL	SBT
Capacity (veh/h)		-	-	92	646	-
HCM Lane V/C Ratio		-	-	0.012	0.002	-
HCM Control Delay (s))	-	-	44.6	10.6	0
HCM Lane LOS		-	-	Е	В	Α
HCM 95th %tile Q(veh	1)	-	-	0	0	-

Scenario 1 Cereghino Subdivision 7:20 am 04/08/2020 2023 Background AM Peak Hour MTA

Intersection												
Int Delay, s/veh	0.3											
	EBL	EDT	EDD	WDI	WDT	WDD	NDI	NDT	NDD	CDI	CDT	CDD
Movement Lang Configurations	ERL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	10	0	1	^	^	^	2	405	^	0	224	
Traffic Vol, veh/h	10	0	1	0	0	0	2	495	0	0	224	5
Future Vol, veh/h	10	0	1	0	0	0	2	495	0	0	224	5
Conflicting Peds, #/hr	O Cton	0	0	0	0	0	0	0	0	0	0	0
Sign Control RT Channelized	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	- //	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage	e,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	- 07	0	07	07	0	- 07	- 07	0	- 07	- 07	0	- 07
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	3	2	2	8	2
Mvmt Flow	11	0	1	0	0	0	2	569	0	0	257	6
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	833	833	260	834	836	569	263	0	0	569	0	0
Stage 1	260	260	-	573	573	-	-	-	-	-	-	-
Stage 2	573	573	-	261	263	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	288	304	779	288	303	522	1301	-	-	1003	-	-
Stage 1	745	693	-	505	504	-	-	-	-	-	-	-
Stage 2	505	504	-	744	691	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	287	303	779	287	302	522	1301	-	-	1003	-	-
Mov Cap-2 Maneuver	287	303	-	287	302	-	-	-	-	-	-	-
Stage 1	744	693	-	504	503	-	-	-	-	-	-	-
Stage 2	504	503	-	743	691	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s				0			0			0		
HCM LOS	17.4 C			A			U			U		
HOW LUS	C			А								
Minor Lane/Major Mvn	nt	NBL	NBT	NBR	EBLn1V	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)		1301	-	-	304	-	1003	-	-			
HCM Lane V/C Ratio		0.002	-	-	0.042	-	-	-	-			
HCM Control Delay (s)	7.8	0	-	17.4	0	0	-	-			
HCM Lane LOS		Α	Α	-	С	Α	Α	-	-			
HCM 95th %tile Q(veh	1)	0	-	-	0.1	-	0	-	-			

Scenario 1 Cereghino Subdivision 7:20 am 04/08/2020 2023 Background AM Peak Hour MTA

Intersection						
Int Delay, s/veh	0.1					
		MES	NET	NES	051	007
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	7	787	7	5	1163
Future Vol, veh/h	1	7	787	7	5	1163
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage		-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	4	2	2	2
Mvmt Flow	1	7	837	7	5	1237
IVIVIII I IOW		,	037	,	3	1237
Major/Minor	Minor1	N	/lajor1	1	Major2	
Conflicting Flow All	2088	841	0	0	844	0
Stage 1	841	-	-	-	-	-
Stage 2	1247	-	_	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	_
Critical Hdwy Stg 1	5.42	-	_	_	-	_
Critical Hdwy Stg 2	5.42	_	_	_	-	_
Follow-up Hdwy	3.518		_	_	2.218	_
Pot Cap-1 Maneuver	58	365		_	792	_
Stage 1	423	- 303	_	_	172	
	271		-	-	-	-
Stage 2	2/1	-	-	-	-	-
Platoon blocked, %	F-7	0.45	-	-	700	-
Mov Cap-1 Maneuver		365	-	-	792	-
Mov Cap-2 Maneuver	57	-	-	-	-	-
Stage 1	423	-	-	-	-	-
Stage 2	266	-	-	-	-	-
Approach	WB		NB		SB	
	22.2		0		0	
HCM LOS			U		U	
HCM LOS	С					
Minor Lane/Major Mvn	nt	NBT	NBRV	WBLn1	SBL	SBT
Capacity (veh/h)					792	
HCM Lane V/C Ratio		_		0.039		_
HCM Control Delay (s)		-		9.6	0
HCM Lane LOS)		-	22.2 C		
	.)	-			A	Α
HCM 95th %tile Q(veh	1)	-	-	0.1	0	-

Scenario 2 Cereghino Subdivision 4:15 pm 04/08/2021 2023 Background PM Peak Hour MTA

Int Delay, s/veh 0.2 Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR SBR Configurations STraffic Vol, veh/h 5 0 1 0 1 0 0 202 2 1 501 14 STR SIR SIR
Movement EBL EBT EBR WBL WBR NBL NBR SBL SBT SBR Lane Configurations Traffic Vol, veh/h 5 0 1 0 1 0 202 2 1 501 14 Future Vol, veh/h 5 0 1 0 1 0 202 2 1 501 14 Conflicting Peds, #/hr 0
Lane Configurations Traffic Vol, veh/h 5 0 1 0 1 0 202 2 1 501 14 Future Vol, veh/h 5 0 1 0 1 0 0 202 2 1 501 14 Conflicting Peds, #/hr 0
Traffic Vol, veh/h 5 0 1 0 1 0 202 2 1 501 14 Future Vol, veh/h 5 0 1 0 1 0 0 202 2 1 501 14 Conflicting Peds, #/hr 0<
Future Vol, veh/h 5 0 1 0 1 0 0 202 2 1 501 14 Conflicting Peds, #/hr 0
Conflicting Peds, #/hr 0
Sign ControlStopStopStopStopStopFree
RT Channelized - - None - - - - - - - - - - - - - - - - -
Storage Length -
Veh in Median Storage, # - 0 0 0 -
GRADE % - () () () ()
Peak Hour Factor 92 92 92 92 92 92 92 92 92 92 92 92 92
Heavy Vehicles, % 2 2 2 2 2 2 3 2 2 2 2 2 2 2 2 2 2 2 2
Mvmt Flow 5 0 1 0 1 0 0 220 2 1 545 15
Major/Minor Minor2 Minor1 Major1 Major2
Conflicting Flow All 777 777 553 776 783 221 560 0 0 222 0 0
Stage 1 555 555 - 221 221
Stage 2 222 222 - 555 562
Critical Hdwy 7.12 6.52 6.22 7.12 6.52 6.22 4.12 - 4.12 -
Critical Hdwy Stg 1 6.12 5.52 - 6.12 5.52
Critical Hdwy Stg 2 6.12 5.52 - 6.12 5.52
Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218
Pot Cap-1 Maneuver 314 328 533 315 325 819 1011 1347
Stage 1 516 513 - 781 720
Stage 2 780 720 - 516 510
Platoon blocked, %
Mov Cap-1 Maneuver 313 328 533 314 325 819 1011 1347
Mov Cap-2 Maneuver 313 328 - 314 325
Stage 1 516 512 - 781 720
Stage 2 779 720 - 514 509
Approach EB WB NB SB
HCM Control Delay, s 15.9 16.1 0 0
HCM LOS C C
TIOM LOG
Minor Lane/Major Mvmt NBL NBT NBR EBLn1WBLn1 SBL SBT SBR
Capacity (veh/h) 1011 336 325 1347
HCM Lane V/C Ratio 0.019 0.003 0.001
HCM Control Delay (s) 0 15.9 16.1 7.7 0 -
HCM Lane LOS A C C A A -
HCM 95th %tile Q(veh) 0 0.1 0 0

Scenario 2 Cereghino Subdivision 4:15 pm 04/08/2021 2023 Background PM Peak Hour MTA

Intersection						
Int Delay, s/veh	0.7					
		MDD	NDT	NDD	CDI	CDT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	10	4.1	050	-	,	(00
Traffic Vol, veh/h	12	16	958	7	6	609
Future Vol, veh/h	12	16	958	7	6	609
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storag	e, # 0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	5	2	2	11
Mvmt Flow	13	18	1076	8	7	684
Maiay/Minay	N 1!1		1-11		Aning?	
	Minor1		Major1		Major2	
Conflicting Flow All	1778	1080	0	0	1084	0
Stage 1	1080	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	91	265	-	-	643	-
Stage 1	326	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	89	265	-	-	643	-
Mov Cap-2 Maneuver		_	_	-	_	-
Stage 1	326	-	-	-	-	-
Stage 2	485	-	_	_	-	
2.230 L	100					
	\ - · · =					
Approach	WB		NB		SB	
HCM Control Delay, s	37.1		0		0.1	
HCM LOS	Е					
Minor Lane/Major Mvr	nt	NBT	NRDV	VBLn1	SBL	SBT
	III	NDT				301
Capacity (veh/h)		-	-	143	643	-
HCM Cantrol Dalay (`	-	-	0.22	0.01	-
HCM Control Delay (s)	-	-	37.1	10.7	0
HCM Lane LOS	,	-	-	E	В	Α
HCM 95th %tile Q(vel	1)	-	-	8.0	0	-

Scenario 1 Cereghino Subdivision 7:20 am 04/08/2020 2023 Background plus Site AM Peak Hour MTA

Intersection												
Int Delay, s/veh	0.3											
	EBL	EDT	EDD	WDI	WDT	WDD	NDI	NDT	NDD	CDI	CDT	CDD
Movement Lang Configurations	ERL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	10	0	1	^	^	^	2	405	^	0	224	
Traffic Vol, veh/h	10	0	1	0	0	0	2	495	0	0	224	5
Future Vol, veh/h	10	0	1	0	0	0	2	495	0	0	224	5
Conflicting Peds, #/hr	O Cton	0	0	0	0	0	0	0	0	0	0	0
Sign Control RT Channelized	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	- //	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage	e,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	- 07	0	07	07	0	- 07	- 07	0	- 07	- 07	0	- 07
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	3	2	2	8	2
Mvmt Flow	11	0	1	0	0	0	2	569	0	0	257	6
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	833	833	260	834	836	569	263	0	0	569	0	0
Stage 1	260	260	-	573	573	-	-	-	-	-	-	-
Stage 2	573	573	-	261	263	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	288	304	779	288	303	522	1301	-	-	1003	-	-
Stage 1	745	693	-	505	504	-	-	-	-	-	-	-
Stage 2	505	504	-	744	691	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	287	303	779	287	302	522	1301	-	-	1003	-	-
Mov Cap-2 Maneuver	287	303	-	287	302	-	-	-	-	-	-	-
Stage 1	744	693	-	504	503	-	-	-	-	-	-	-
Stage 2	504	503	-	743	691	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s				0			0			0		
HCM LOS	17.4 C			A			U			U		
I IOIVI LUS	C			А								
Minor Lane/Major Mvn	nt	NBL	NBT	NBR	EBLn1V	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)		1301	-	-	304	-	1003	-	-			
HCM Lane V/C Ratio		0.002	-	-	0.042	-	-	-	-			
HCM Control Delay (s)	7.8	0	-	17.4	0	0	-	-			
HCM Lane LOS		Α	Α	-	С	Α	Α	-	-			
HCM 95th %tile Q(veh	1)	0	-	-	0.1	-	0	-	-			

Scenario 1 Cereghino Subdivision 7:20 am 04/08/2020 2023 Background plus Site AM Peak Hour MTA

Intersection						
Int Delay, s/veh	0.7					
		MES	Not	NDD	051	ODT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	18	787	19	24	1163
Future Vol, veh/h	8	18	787	19	24	1163
Conflicting Peds, #/hr		0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storag	e, # 0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	4	2	2	2
Mvmt Flow	9	19	837	20	26	1237
		_		_		
Major/Minor	Minor1		/lajor1	N	Major2	
Conflicting Flow All	2136	847	0	0	857	0
Stage 1	847	-	-	-	-	-
Stage 2	1289	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	54	362	-	-	783	-
Stage 1	420	-	_	-	-	-
Stage 2	258	-	_	-	-	-
Platoon blocked, %			_	_		_
Mov Cap-1 Maneuver	48	362	_	_	783	_
Mov Cap-2 Maneuver		- 302	_	_	703	_
Stage 1	420					
Stage 2	231	-				
Staye 2	231	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	43.8		0		0.2	
HCM LOS	Е					
NA!		NDT	MDD	NDL 4	CDI	CDT
Minor Lane/Major Mvi	nt	NBT	NRKA	VBLn1	SBL	SBT
Capacity (veh/h)		-	-		783	-
HCM Lane V/C Ratio		-	-		0.033	-
HCM Control Delay (s	5)	-	-	.0.0	9.8	0
HCM Lane LOS		-	-	Е	Α	Α
HCM 95th %tile Q(vel	1)	-	-	0.8	0.1	-
•						

Scenario 2 Cereghino Subdivision 4:15 pm 04/08/2021 2023 Background plus Site PM Peak Hour MTA

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol., veh/h	5	0	1	0	1	0	0	202	2	1	501	14
Future Vol, veh/h	5	0	1	0	1	0	0	202	2	1	501	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage	2,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	3	2	2	2	2
Mvmt Flow	5	0	1	0	1	0	0	220	2	1	545	15
Major/Minor I	Minor2			Minor1			Major1		1	Major2		
Conflicting Flow All	777	777	553	776	783	221	560	0	0	222	0	0
Stage 1	555	555	-	221	221	-	-	-	-	-	-	-
Stage 2	222	222	-	555	562	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	314	328	533	315	325	819	1011	-	-	1347	-	-
Stage 1	516	513	-	781	720	-	-	-	-	-	-	-
Stage 2	780	720	-	516	510	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	313	328	533	314	325	819	1011	-	-	1347	-	-
Mov Cap-2 Maneuver	313	328	-	314	325	-	-	-	-	-	-	-
Stage 1	516	512	-	781	720	-	-	-	-	-	-	-
Stage 2	779	720	-	514	509	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	15.9			16.1			0			0		
HCM LOS	С			С								
Minor Lane/Major Mvm	nt	NBL	NBT	NBR	EBLn1V	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)		1011	-	-	336	325	1347	-	-			
HCM Lane V/C Ratio		-	-	-		0.003		-	-			
HCM Control Delay (s)		0	-	_	15.9	16.1	7.7	0	-			
HCM Lane LOS		A	-	-	С	С	Α	A	-			
HCM 95th %tile Q(veh))	0	-	-	0.1	0	0	-	-			
,												

Scenario 2 Cereghino Subdivision 4:15 pm 04/08/2021 2023 Background plus Site PM Peak Hour MTA

Intersection						
Int Delay, s/veh	0.4					
		MED	NET	NDD	051	ODT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	16	958	7	6	609
Future Vol, veh/h	12	16	958	7	6	609
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage	e, # 0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	5	2	2	11
Mvmt Flow	13	18	1076	8	7	684
Major/Minor	Minor1		/lajor1		Majora	
					Major2	
Conflicting Flow All	1778	1080	0	0	1084	0
Stage 1	1080	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy		3.318	-	-	2.218	-
Pot Cap-1 Maneuver	91	265	-	-	643	-
Stage 1	326	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	90	265	-	-	643	-
Mov Cap-2 Maneuver	218	-	-	-	-	-
Stage 1	326	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Ŭ						
Annraach	WD		ND		CD	
Approach	WB		NB		SB	
HCM Control Delay, s	22		0		0.1	
HCM LOS	С					
Minor Lane/Major Mvn	nt	NBT	NBRV	VBLn1	SBL	SBT
Capacity (veh/h)		_		243	643	_
HCM Lane V/C Ratio		_	_	0.129	0.01	-
HCM Control Delay (s)		_	_	22	10.7	_
HCM Lane LOS		_	_	C	В	_
HCM 95th %tile Q(veh)	_		0.4	0	
HOW FOUT FOUT Q (VCH	,			0.7	U	

Scenario 1 Cereghino Subdivision 7:20 am 04/08/2020 2023 Bkgd + Site w SBLT Lane AM Peak Hour MTA

Movement WBL WBR NBT NBR SBL SBT	Intersection						
Movement WBL WBR NBT NBR SBL SBT		0.4					
Lane Configurations							
Traffic Vol, veh/h	Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	Lane Configurations						
Conflicting Peds, #/hr 0 0 0 0 0 0 Sign Control Stop Stop Free 60 2 Color Color Color Color Color Free Free Free Free Free Free	Traffic Vol, veh/h	8	18	787	19	24	1163
Sign Control Stop RT Channelized Stop None Free RT Channelized Free RT Channelized None None <td>Future Vol, veh/h</td> <td>8</td> <td>18</td> <td>787</td> <td>19</td> <td>24</td> <td>1163</td>	Future Vol, veh/h	8	18	787	19	24	1163
Sign Control Stop RT Channelized Stop None Free RT Channelized Free RT Channelized None None <td>·</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td>	·						0
RT Channelized							Free
Storage Length 0 - - 100 - Veh in Median Storage, # 0 - 0 - 0 Grade, % 0 - 0 - 0 Peak Hour Factor 94 94 94 94 94 94 Heavy Vehicles, % 2 2 4 2 2 2 Mvmt Flow 9 19 837 20 26 1237 Major/Minor Minor Minor Major1 Major2 Conflicting Flow All 2136 847 0 0 857 0 Stage 1 847 -		•					
Veh in Median Storage, # 0 - 0 - - 0 Grade, % 0 - 0 - - 0 Peak Hour Factor 94							-
Grade, % 0 - 0 - - 0 Peak Hour Factor 94							0
Peak Hour Factor 94							
Heavy Vehicles, % 2 2 4 2 2 2 2 2 2 2		-					
Mymt Flow 9 19 837 20 26 1237 Major/Minor Minor1 Major1 Major2 Conflicting Flow All 2136 847 0 0 857 0 Stage 1 847 -							
Major/Minor Minor1 Major1 Major2 Conflicting Flow All 2136 847 0 0 857 0 Stage 1 847 -							
Conflicting Flow All 2136 847 0 0 857 0 Stage 1 847 -	IVIVITIL FIOW	9	19	837	20	26	1237
Conflicting Flow All 2136 847 0 0 857 0 Stage 1 847 -							
Conflicting Flow All 2136 847 0 0 857 0 Stage 1 847 -	Major/Minor	Minor1	N	Najor1		Major2	
Stage 1 847 -							0
Stage 2 1289 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -					-		-
Critical Hdwy Stg 1 5.42 4.12 - Critical Hdwy Stg 1 5.42							-
Critical Hdwy Stg 1 5.42							
Critical Hdwy Stg 2 5.42					-		
Follow-up Hdwy 3.518 3.318 - 2.218 - Pot Cap-1 Maneuver 54 362 - 783 - 783 Stage 1 420				-	-		
Pot Cap-1 Maneuver 54 362 - - 783 - Stage 1 420 - - - - - Stage 2 258 - - - - - Platoon blocked, % - - - - - - - Mov Cap-1 Maneuver 52 362 - - 783 - Mov Cap-2 Maneuver 165 - - - - - - Stage 1 420 - - - - - - Stage 2 249 - - - - - - Approach WB NB SB HCM Control Delay, s 20.2 0 0.2 Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT Capacity (veh/h) - - 265 783 - HCM Lane V/C Ratio - - 20.2				-	-		
Stage 1 420 - - - - Stage 2 258 - - - - Platoon blocked, % - - - - - Mov Cap-1 Maneuver 52 362 - - 783 - Mov Cap-2 Maneuver 165 - - - - - - Stage 1 420 - - - - - - - Stage 2 249 - - - - - - - Approach WB NB NB SB HCM Control Delay, s 20.2 0 0.2 0 0.2 Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT Capacity (veh/h) - - 265 783 - HCM Lane V/C Ratio - - 0.104 0.033 - HCM Lane LOS - - 20.2 9.8 -				-	-		-
Stage 2 258 - - - - Platoon blocked, % Mov Cap-1 Maneuver 52 362 - - 783 - Mov Cap-2 Maneuver 165 - <t< td=""><td>•</td><td></td><td>362</td><td>-</td><td>-</td><td>/83</td><td>-</td></t<>	•		362	-	-	/83	-
Platoon blocked, % -			-	-	-	-	-
Mov Cap-1 Maneuver 52 362 - - 783 - Mov Cap-2 Maneuver 165 -		258	-	-	-	-	-
Mov Cap-2 Maneuver 165 -				-	-		-
Mov Cap-2 Maneuver 165 -	Mov Cap-1 Maneuver	52	362	-	-	783	-
Stage 1 420 -				_	_		-
Stage 2 249 -			_	_	_	-	-
Approach WB NB SB HCM Control Delay, s 20.2 0 0.2 HCM LOS C Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT Capacity (veh/h) - - 265 783 - HCM Lane V/C Ratio - - 0.104 0.033 - HCM Control Delay (s) - - 20.2 9.8 - HCM Lane LOS - - C A -	•		_	_	_		_
HCM Control Delay, s 20.2 0 0.2 HCM LOS C Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT Capacity (veh/h) - 265 783 - HCM Lane V/C Ratio - 0.104 0.033 - HCM Control Delay (s) - 20.2 9.8 - HCM Lane LOS - C A -	Jugo Z	217					
HCM Control Delay, s 20.2 0 0.2 HCM LOS C Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT Capacity (veh/h) - 265 783 - HCM Lane V/C Ratio - 0.104 0.033 - HCM Control Delay (s) - 20.2 9.8 - HCM Lane LOS - C A -							
Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT Capacity (veh/h) - - 265 783 - HCM Lane V/C Ratio - - 0.104 0.033 - HCM Control Delay (s) - - 20.2 9.8 - HCM Lane LOS - - C A -							
Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT Capacity (veh/h) - - 265 783 - HCM Lane V/C Ratio - - 0.104 0.033 - HCM Control Delay (s) - - 20.2 9.8 - HCM Lane LOS - - C A -	,			0		0.2	
Capacity (veh/h) - - 265 783 - HCM Lane V/C Ratio - - 0.104 0.033 - HCM Control Delay (s) - - 20.2 9.8 - HCM Lane LOS - C A -	HCM LOS	С					
Capacity (veh/h) - - 265 783 - HCM Lane V/C Ratio - - 0.104 0.033 - HCM Control Delay (s) - - 20.2 9.8 - HCM Lane LOS - C A -							
Capacity (veh/h) - - 265 783 - HCM Lane V/C Ratio - - 0.104 0.033 - HCM Control Delay (s) - - 20.2 9.8 - HCM Lane LOS - C A -	Minor Lanc/Major My	mt	NDT	NDDV	MDI n1	CDI	CDT
HCM Lane V/C Ratio - - 0.104 0.033 HCM Control Delay (s) - - 20.2 9.8 HCM Lane LOS - C A		III	INDI	NRKI			SBI
HCM Control Delay (s) 20.2 9.8 - HCM Lane LOS C A			-	-			-
HCM Lane LOS C A -			-	-			-
		5)	-	-			-
				-			-
HCM 95th %tile Q(veh) 0.3 0.1 -	HCM 95th %tile Q(vel	n)	-	-	0.3	0.1	-

Scenario 2 Cereghino Subdivision 4:15 pm 04/08/2021 2023 Bkgd + Site w SBLT Lane PM Peak Hour MTA

Int Delay, s/veh
Movement
Lane Configurations Traffic Vol, veh/h 3 3 1073 4 2 682 Future Vol, veh/h 3 3 1073 4 2 682 Conflicting Peds, #/hr 0 0 0 0 0 0 0 Sign Control Stop Stop Free
Traffic Vol, veh/h 3 3 1073 4 2 682 Future Vol, veh/h 3 3 1073 4 2 682 Conflicting Peds, #/hr 0 0 0 0 0 0 Sign Control Stop Stop Free Free <td< td=""></td<>
Future Vol, veh/h 3 3 1073 4 2 682 Conflicting Peds, #/hr 0
Conflicting Peds, #/hr 0 0 0 0 0 0 Sign Control Stop Stop Free
Sign Control Stop Stop Free RT Channelized None Non
RT Channelized - None - None - None Storage Length 0 - - - Veh in Median Storage, # 0 - 0 - - Grade, % 0 - 0 - - 0 Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % 2 2 5 2 2 11 Mvmt Flow 3 3 1166 4 2 741 Major/Minor Minor1 Major1 Major2 Conflicting Flow All 1913 1168 0 0 1170 0 Stage 1 1168 - - - - - - Stage 2 745 -
RT Channelized - None - None - None Storage Length 0 - - - Veh in Median Storage, # 0 - 0 - - Grade, % 0 - 0 - - 0 Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % 2 2 5 2 2 11 Mvmt Flow 3 3 1166 4 2 741 Major/Minor Minor1 Major1 Major2 Conflicting Flow All 1913 1168 0 0 1170 0 Stage 1 1168 - - - - - - Stage 2 745 -
Weh in Median Storage, # 0 - 0 - - 0 Grade, % 0 - 0 - - 0 Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % 2 2 5 2 2 11 Mvmt Flow 3 3 1166 4 2 741 Major/Minor Minor1 Major1 Major2 Conflicting Flow All 1913 1168 0 0 1170 0 Stage 1 1168 - <td< td=""></td<>
Veh in Median Storage, # 0 - 0 0 Grade, % 0 - 0 - 0 - 0 Peak Hour Factor 92 92 92 92 92 92 92 92 92 Heavy Vehicles, % 2 2 5 2 2 11 Mvmt Flow 3 3 1166 4 2 741 Major/Minor Minor1 Major1 Conflicting Flow All 1913 1168 0 0 1170 0 Stage 1 1168
Grade, % 0 - 0 - - 0 Peak Hour Factor 92 14 92 741 16 4 2 741 741 741 741 741 741 741 92 92 92 </td
Peak Hour Factor 92 11 Month Flow Minor Minor Major
Major/Minor Minor1 Major1 Major2 Conflicting Flow All 1913 1168 0 0 1170 0 Stage 1 1168 - - - - - - Critical Hdwy 6.42 6.22 - 4.12 - Critical Hdwy Stg 1 5.42 - - - - Critical Hdwy Stg 2 5.42 - - - - - Follow-up Hdwy 3.518 3.318 - - 2.218 - Pot Cap-1 Maneuver 75 235 - - 597 - Stage 1 296 - - - - - - Stage 2 469 - - - - - - -
Mvmt Flow 3 3 1166 4 2 741 Major/Minor Minor1 Major1 Major2 Conflicting Flow All 1913 1168 0 0 1170 0 Stage 1 1168 -
Major/Minor Minor1 Major1 Major2 Conflicting Flow All 1913 1168 0 0 1170 0 Stage 1 1168 - - - - - - Stage 2 745 - - - - - - Critical Hdwy 6.42 6.22 - 4.12 -
Conflicting Flow All 1913 1168 0 0 1170 0 Stage 1 1168 - - - - - Stage 2 745 - - - - - Critical Hdwy 6.42 6.22 - - 4.12 - Critical Hdwy Stg 1 5.42 - - - - - Critical Hdwy Stg 2 5.42 - - - - - Follow-up Hdwy 3.518 3.318 - - 2.218 - Pot Cap-1 Maneuver 75 235 - - 597 - Stage 1 296 - - - - - Stage 2 469 - - - - -
Conflicting Flow All 1913 1168 0 0 1170 0 Stage 1 1168 - - - - - Stage 2 745 - - - - - Critical Hdwy 6.42 6.22 - 4.12 - Critical Hdwy Stg 1 5.42 - - - - Critical Hdwy Stg 2 5.42 - - - - Follow-up Hdwy 3.518 3.318 - - 2.218 - Pot Cap-1 Maneuver 75 235 - - 597 - Stage 1 296 - - - - - Stage 2 469 - - - - -
Stage 1 1168 - - - - Stage 2 745 - - - - - Critical Hdwy 6.42 6.22 - 4.12 - Critical Hdwy Stg 1 5.42 - - - - Critical Hdwy Stg 2 5.42 - - - - Follow-up Hdwy 3.518 3.318 - - 2.218 - Pot Cap-1 Maneuver 75 235 - 597 - Stage 1 296 - - - - Stage 2 469 - - - -
Stage 2 745 - - - - Critical Hdwy 6.42 6.22 - 4.12 - Critical Hdwy Stg 1 5.42 - - - - Critical Hdwy Stg 2 5.42 - - - - Follow-up Hdwy 3.518 3.318 - - 2.218 - Pot Cap-1 Maneuver 75 235 - 597 - Stage 1 296 - - - - Stage 2 469 - - - -
Critical Hdwy 6.42 6.22 - 4.12 - Critical Hdwy Stg 1 5.42 - - - - Critical Hdwy Stg 2 5.42 - - - - Follow-up Hdwy 3.518 3.318 - - 2.218 - Pot Cap-1 Maneuver 75 235 - 597 - Stage 1 296 - - - - Stage 2 469 - - - -
Critical Hdwy 6.42 6.22 - 4.12 - Critical Hdwy Stg 1 5.42 - - - - Critical Hdwy Stg 2 5.42 - - - - Follow-up Hdwy 3.518 3.318 - - 2.218 - Pot Cap-1 Maneuver 75 235 - 597 - Stage 1 296 - - - - Stage 2 469 - - - -
Critical Hdwy Stg 1 5.42 - - - - Critical Hdwy Stg 2 5.42 - - - - Follow-up Hdwy 3.518 3.318 - - 2.218 - Pot Cap-1 Maneuver 75 235 - - 597 - Stage 1 296 - - - - - Stage 2 469 - - - - -
Critical Hdwy Stg 2 5.42 - - - - - Follow-up Hdwy 3.518 3.318 - - 2.218 - Pot Cap-1 Maneuver 75 235 - - 597 - Stage 1 296 - - - - - Stage 2 469 - - - - -
Follow-up Hdwy 3.518 3.318 - 2.218 - Pot Cap-1 Maneuver 75 235 - 597 - Stage 1 296 Stage 2 469
Pot Cap-1 Maneuver 75 235 - - 597 - Stage 1 296 - - - - - Stage 2 469 - - - - -
Stage 1 296 - - - - - Stage 2 469 - - - -
Stage 2 469
רומנטטוו אוטטגעלע, 70
May Can 1 Managuer 75 325 507
Mov Cap-1 Maneuver 75 235 597 -
Mov Cap-2 Maneuver 75
Stage 1 296
Stage 2 466
Approach WB NB SB
HCM Control Delay, s 38.5 0 0
HCM LOS E
Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT
Capacity (veh/h) 114 597 -
Capacity (veh/h) 114 597 - HCM Lane V/C Ratio - 0.057 0.004 -
Capacity (veh/h) 114 597 - HCM Lane V/C Ratio 0.057 0.004 - HCM Control Delay (s) - 38.5 11.1 0
Capacity (veh/h) 114 597 - HCM Lane V/C Ratio - 0.057 0.004 -

Scenario 1 Cereghino Subdivision 7:20 am 04/08/2020 2036 Background AM Peak Hour MTA

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			LDIN	1100	1101	TI DIC	, , DE	1101	HOR			OBR
Traffic Vol, veh/h	11	0	1	0	0	0	2	641	0	0	289	5
Future Vol, veh/h	11	0	1	0	0	0	2	641	0	0	289	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage	e,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	3	2	2	8	2
Mvmt Flow	13	0	1	0	0	0	2	737	0	0	332	6
Major/Minor	Minor2			Minor1			Major1		N	Major2		
Conflicting Flow All	1076	1076	335	1077	1079	737	338	0	0	737	0	0
Stage 1	335	335	-	741	741	-	-	-	-	-	-	-
Stage 2	741	741	-	336	338	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	197	219	707	197	218	418	1221	-	-	869	-	-
Stage 1	679	643	-	408	423	-	-	-	-	-	-	-
Stage 2	408	423	-	678	641	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	197	218	707	196	217	418	1221	-	-	869	-	-
Mov Cap-2 Maneuver	197	218	-	196	217	-	-	-	-	-	-	-
Stage 1	677	643	-	407	422	-	-	-	-	-	-	-
Stage 2	407	422	-	677	641	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	23.3			0			0			0		
HCM LOS	С			А								
Minor Lane/Major Mvm	nt	NBL	NBT	NBR	EBLn1V	VBLn1	SBL	SBT	SBR			
Capacity (veh/h)		1221	-	-	210	-	869	-	-			
HCM Lane V/C Ratio		0.002	-	_	0.066	_	-	-	-			
HCM Control Delay (s)		8	0	-	23.3	0	0	-	-			
HCM Lane LOS		A	A	-	С	A	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.2	-	0	-	-			

Scenario 1 Cereghino Subdivision 7:20 am 04/08/2020 2036 Background AM Peak Hour MTA

Synchro 11 Light Report Page 2

Exhibit 5 Exhibits
Page 421 nt 200 Page 421 nt

Intersection						
Int Delay, s/veh	0.3					
		MED	NET	NES	051	ODT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	9	881	9	9	1302
Future Vol, veh/h	3	9	881	9	9	1302
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage		-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	4	2	2	2
Mvmt Flow	3	9	927	9	9	1371
WWW. LOW	U	,	121	,	,	1071
	Minor1		/lajor1		Major2	
Conflicting Flow All	2321	932	0	0	936	0
Stage 1	932	-	-	-	-	-
Stage 2	1389	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy		3.318	-	_	2.218	-
Pot Cap-1 Maneuver	41	323	-	_	732	-
Stage 1	383	-	_	_	-	_
Stage 2	231	_	_	_	_	_
Platoon blocked, %	201		_	_		_
Mov Cap-1 Maneuver	39	323	-	-	732	-
Mov Cap-1 Maneuver	39	323			732	_
	383	-	-	-	-	-
Stage 1		-	-		-	-
Stage 2	219	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	40.1		0		0.1	
HCM LOS	E					
, = = =	_					
Minor Lane/Major Mvr	nt	NBT	NBRV	VBLn1	SBL	SBT
Capacity (veh/h)		-	-	115	732	-
HCM Lane V/C Ratio		-	-	0.11	0.013	-
HCM Control Delay (s)	-	-	40.1	10	0
HCM Lane LOS		-	-	Ε	Α	Α
HCM 95th %tile Q(veh	1)	-	-	0.4	0	-

Scenario 2 Cereghino Subdivision 4:15 pm 04/08/2021 2036 Background PM Peak Hour MTA

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	1	0	1	0	0	261	2	1	649	15
Future Vol, veh/h	5	0	1	0	1	0	0	261	2	1	649	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage	e,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	3	2	2	2	2
Mvmt Flow	5	0	1	0	1	0	0	284	2	1	705	16
Major/Minor I	Minor2			Minor1			Major1		ľ	Major2		
Conflicting Flow All	1001	1001	713	1001	1008	285	721	0	0	286	0	0
Stage 1	715	715	-	285	285	-	-	-	-	-	-	-
Stage 2	286	286	-	716	723	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	222	243	432	222	240	754	881	-	-	1276	-	-
Stage 1	422	434	-	722	676	-	-	-	-	-	-	-
Stage 2	721	675	-	421	431	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	221	243	432	221	240	754	881	-	-	1276	-	-
Mov Cap-2 Maneuver	221	243	-	221	240	-	-	-	-	-	-	-
Stage 1	422	434	-	722	676	-	-	-	-	-	-	-
Stage 2	720	675	-	420	431	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	20.4			20.1			0			0		
HCM LOS	С			С								
Minor Lane/Major Mvm	nt	NBL	NBT	NBR	EBLn1\	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)		881	-		241	240	1276	-	-			
HCM Lane V/C Ratio		-	-	-		0.005		-	-			
HCM Control Delay (s)		0	-	-	20.4	20.1	7.8	0	-			
HCM Lane LOS		Α	-	-	С	С	Α	Α	-			
HCM 95th %tile Q(veh))	0	-	-	0.1	0	0	-	-			

Scenario 2 Cereghino Subdivision 4:15 pm 04/08/2021 2036 Background PM Peak Hour MTA

Intersection						
Int Delay, s/veh	0.8					
		WED	Not	NES	051	ODT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	17	1073	7	6	682
Future Vol, veh/h	12	17	1073	7	6	682
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storag	e,# 0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	5	2	2	11
Mymt Flow	13	18	1166	8	7	741
IVIVIII I IOVV	13	10	1100	U	,	7 7 1
Major/Minor	Minor1	N	Major1	ا	Major2	
Conflicting Flow All	1925	1170	0	0	1174	0
Stage 1	1170	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	_	4.12	-
Critical Hdwy Stg 1	5.42	-	_	_	-	_
Critical Hdwy Stg 2	5.42	-	_	_	_	_
Follow-up Hdwy		3.318	_	_	2.218	_
Pot Cap-1 Maneuver	73	235		_	595	_
Stage 1	295	- 200		_	3/3	_
	464		-	-	_	-
Stage 2	404	-	-	-	-	
Platoon blocked, %	70	005	-	-	FOF	-
Mov Cap-1 Maneuver		235	-	-	595	-
Mov Cap-2 Maneuver		-	-	-	-	-
Stage 1	295	-	-	-	-	-
Stage 2	455	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s			0		0.1	
HCM LOS	E		U		0.1	
TIGIVI EUS	L					
Minor Lane/Major Mvr	nt	NBT	NBRV	VBLn1	SBL	SBT
Capacity (veh/h)		-	-	121	595	-
HCM Lane V/C Ratio		-	-	0.261		-
HCM Control Delay (s)	-	-	44.9	11.1	0
HCM Lane LOS	,	-	_	E	В	A
HCM 95th %tile Q(veh	1)	-	_	1	0	-
1101VI 73111 701116 Q(VEI	'/				U	_

Scenario 1 Cereghino Subdivision 7:20 am 04/08/2020 2036 Background plus Site AM Peak Hour MTA

Intersection Int Delay, s/veh O.3 Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR
Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR
Lane Configurations
Traffic Vol, veh/h 12 0 2 0 0 0 2 641 0 0 289 6
Future Vol, veh/h 12 0 2 0 0 0 2 641 0 0 289 6
Conflicting Peds, #/hr 0 0 0 0 0 0 0 0 0 0
Sign Control Stop Stop Stop Stop Stop Free Free Free Free Free Free
RT Channelized None None None
Storage Length
Veh in Median Storage, # - 0 0 0 -
Grade, % - 0 0 0 0 -
Peak Hour Factor 87 87 87 87 87 87 87 87 87 87 87
Heavy Vehicles, % 2 2 2 2 2 2 3 2 2 8 2
Mvmt Flow 14 0 2 0 0 0 2 737 0 0 332 7
Major/Minor Minor2 Minor1 Major1 Major2
Conflicting Flow All 1077 1077 336 1078 1080 737 339 0 0 737 0 0
Stage 1 336 336 - 741 741
Stage 2 741 741 - 337 339
Critical Hdwy 7.12 6.52 6.22 7.12 6.52 6.22 4.12 - 4.12 -
Critical Hdwy Stg 1 6.12 5.52 - 6.12 5.52
Critical Hdwy Stg 2 6.12 5.52 - 6.12 5.52
Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 -
Pot Cap-1 Maneuver 197 219 706 196 218 418 1220 869
Stage 1 678 642 - 408 423
Stage 2 408 423 - 677 640
Platoon blocked, %
Mov Cap-1 Maneuver 197 218 706 195 217 418 1220 869
Mov Cap-2 Maneuver 197 218 - 195 217
Stage 1 676 642 - 407 422
Stage 2 407 422 - 675 640
Approach EB WB NB SB
3 .
HCM LOS C A
Minor Lane/Major Mvmt NBL NBT NBR EBLn1WBLn1 SBL SBT SBR
Capacity (veh/h) 1220 - 220 - 869
HCM Lane V/C Ratio 0.002 0.073
HCM Control Delay (s) 8 0 - 22.7 0 0
HCM Lane LOS A A - C A A
HCM 95th %tile Q(veh) 0 0.2 - 0

Scenario 1 Cereghino Subdivision 7:20 am 04/08/2020 2036 Background plus Site AM Peak Hour MTA

Intersection						
Int Delay, s/veh	0.9					
		WED	NET	NDD	051	ODT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	18	881	20	24	1302
Future Vol, veh/h	8	18	881	20	24	1302
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storag	e,# 0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	4	2	2	2
Mvmt Flow	8	19	927	21	25	1371
		. ,	,			
	Minor1		/lajor1	1	Major2	
Conflicting Flow All	2359	938	0	0	948	0
Stage 1	938	-	-	-	-	-
Stage 2	1421	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	_	-	-	-
Follow-up Hdwy		3.318	_	_	2.218	_
Pot Cap-1 Maneuver	39	321	-	-	724	-
Stage 1	381	-	_	_	-	_
Stage 2	223	-		_	_	
Platoon blocked, %	223					
Mov Cap-1 Maneuver	33	321	-	-	724	-
	33			-		-
Mov Cap-2 Maneuver		-	-	-	-	-
Stage 1	381	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s			0		0.2	
HCM LOS	04.5 F		- 0		0.2	
TIGIVI EUS	I.					
Minor Lane/Major Mvr	nt	NBT	NBRV	VBLn1	SBL	SBT
Capacity (veh/h)			-	87	724	
HCM Lane V/C Ratio		-	_	0.315		-
HCM Control Delay (s)	-	-		10.2	0
HCM Lane LOS	,	-	_	F	В	A
HCM 95th %tile Q(veh	1)	-	-	4.0	0.1	-
115W 75W 75W 76W Q(VC)	'/			1.2	0.1	

Scenario 2 Cereghino Subdivision 4:15 pm 04/08/2021 2036 Background plus Site PM Peak Hour MTA

Appendix N - South System

Intersection												
Int Delay, s/veh	0.2											
	EBL	ГПТ	EDD	WDI	WDT	WDD	MDI	NDT	NDD	CDI	CDT	CDD
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	0	1	^	1	0	1	0/1	2	1	/ 10	1/
Traffic Vol, veh/h	7	0	1	0	1	0	1	261	2	1	649	16
Future Vol, veh/h	7	0	1	0	1	0	1	261	2	1	649	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage	e,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, % Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
	2	2	2	2	2	2	2	3	2	2	2	2
Heavy Vehicles, % Mvmt Flow	8	0	1	0	1	0	1	284	2	1	705	17
IVIVIIIL FIUW	ď	U		U		U		Zŏ4	Z		700	17
Major/Minor	Minor2			Minor1			Major1		N	Major2		
Conflicting Flow All	1004	1004	714	1003	1011	285	722	0	0	286	0	0
Stage 1	716	716	-	287	287	-	-	-	-	-	-	-
Stage 2	288	288	-	716	724	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	220	242	431	221	240	754	880	-	-	1276	-	-
Stage 1	421	434	-	720	674	-	-	-	-	-	-	-
Stage 2	720	674	-	421	430	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	219	242	431	220	240	754	880	-	-	1276	-	-
Mov Cap-2 Maneuver	219	242	-	220	240	-	-	-	-	-	-	-
Stage 1	421	434	-	719	673	-	-	-	-	-	-	-
Stage 2	718	673	-	420	430	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	21			20.1			0			0		
HCM LOS	C			C								
A 41 1 /A 1		ND	NDT	NDD		NDL 1	CDI	CDT	CDD			
Minor Lane/Major Mvm	nt	NBL	NBT	NRK	EBLn1V		SBL	SBT	SBR			
Capacity (veh/h)		880	-	-	233	240	1276	-	-			
HCM Lane V/C Ratio		0.001	-	-	0.037	0.005	0.001	-	-			
HCM Control Delay (s)		9.1	0	-	21	20.1	7.8	0	-			
HCM Lane LOS		A	Α	-	С	С	A	Α	-			
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-			

Scenario 2 Cereghino Subdivision 4:15 pm 04/08/2021 2036 Background plus Site PM Peak Hour MTA

Intersection						
Int Delay, s/veh	0.4					
		WIDD	NDT	NDD	CDI	CDT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	10	17	1070	7	,	/00
Traffic Vol, veh/h	12	17	1073	7	6	682
Future Vol, veh/h	12	17	1073	7	6	682
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage		-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	5	2	2	11
Mvmt Flow	13	18	1166	8	7	741
Major/Minor	Minor1	N	/lajor1	_	Major2	
Conflicting Flow All	1925	1170	0 (najor i	0	1174	0
Stage 1	1170	-		U	11/4	
	755	-	-	-	-	-
Stage 2		6.22	-	-		
Critical Hdwy	6.42	0.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42		-	-	-	-
Critical Hdwy Stg 2	5.42	2 210	-	-	2 210	-
Follow-up Hdwy	3.518	3.318	-	-		-
Pot Cap-1 Maneuver	73	235	-	-	595	-
Stage 1	295	-	-	-	-	-
Stage 2	464	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	72	235	-	-	595	-
Mov Cap-2 Maneuver	195	-	-	-	-	-
Stage 1	295	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Annroach	WB		NB		SB	
Approach						
HCM Control Delay, s	24.4		0		0.1	
HCM LOS	С					
Minor Lane/Major Mvn	nt	NBT	NBRV	VBLn1	SBL	SBT
Capacity (veh/h)		-	-		595	-
HCM Lane V/C Ratio		-	_	0.145		-
HCM Control Delay (s)	-	-		11.1	_
HCM Lane LOS		_	_	С	В	_
HCM 95th %tile Q(veh)	-	-	0.5	0	-
1151V1 75111 751110 Q(VCI	7			0.0	U	

Scenario 1 Cereghino Subdivision 7:20 am 04/08/2020 2036 Bkgd + Site w SBLT Lane AM Peak Hour MTA

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	18	881	20	24	1302
Future Vol, veh/h	8	18	881	20	24	1302
Conflicting Peds, #/hr		0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	_	-	100	-
Veh in Median Storag		-	0	_	-	0
Grade, %	0	_	0	_	-	0
Peak Hour Factor	95	95	95	95	95	95
	2	2	4	2	2	2
Heavy Vehicles, %	8	19			25	
Mvmt Flow	8	19	927	21	25	1371
Major/Minor	Minor1	Λ	/lajor1	1	Major2	
Conflicting Flow All	2359	938	0	0	948	0
Stage 1	938	-	-	-	-	-
Stage 2	1421	_	_		_	_
Critical Hdwy	6.42	6.22	-	-	4.12	
Critical Hdwy Stg 1	5.42	0.22	_		4.12	_
	5.42	-	-	-	-	-
Critical Hdwy Stg 2						
Follow-up Hdwy		3.318	-	-	2.218	-
Pot Cap-1 Maneuver	39	321	-	-	724	-
Stage 1	381	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver		321	-	-	724	-
Mov Cap-2 Maneuver		-	-	-	-	-
Stage 1	381	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Annroach	WB		NB		SB	
Approach						
HCM Control Delay, s			0		0.2	
HCM LOS	С					
Minor Lane/Major Mvr	mt	NBT	NBRV	VBLn1	SBL	SBT
Capacity (veh/h)				230	724	
HCM Lane V/C Ratio		-		0.119		-
HCM Control Delay (s	.)	-	-	22.8	10.2	
	9)	-				-
HCM Lane LOS		-	-	C 0.4	0.1	-
HCM 95th %tile Q(veh						-

Scenario 2 Cereghino Subdivision 4:15 pm 04/08/2021 2036 Bkgd + Site w SBLT Lane PM Peak Hour MTA

Intersection: 1: Hwy 213 & Mitchell Lane

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	133	32
Average Queue (ft)	46	4
95th Queue (ft)	109	21
Link Distance (ft)	622	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: S Beavercreek Rd & S Lammer Rd/S Camellia Ct

Movement	EB	NB
Directions Served	LTR	LTR
Maximum Queue (ft)	44	10
Average Queue (ft)	10	0
95th Queue (ft)	35	5
Link Distance (ft)	563	599
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Hwy 213 & Mitchell Lane

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	232	56
Average Queue (ft)	102	16
95th Queue (ft)	266	44
Link Distance (ft)	622	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: S Beavercreek Rd & S Lammer Rd/S Camellia Ct

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	39	24	15
Average Queue (ft)	9	1	1
95th Queue (ft)	32	9	11
Link Distance (ft)	563	485	635
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Scenario 2 Cereghino Subdivision MTA

SimTraffic Report Page 1

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT CONTINUOUS SYSTEM CRASH LISTING

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5.39 to 5.59 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage - 4 of 8 Crash records shown.	VE A S DM PRIC INJ G E LICNS PED PH TYPE SYRPY E X BES 1.07 EPROP ACT EVIENT CARSE	1T 01 DRVR NONE 56 M OR-Y 043,026,052 000 013 01 DRVR NONE 17 M OR-Y 000 000 010 011 013 01 DRVR INJC 32 M OR-Y 000 000 000 000 000 000 000 000 000 0	STRGHT N -S 01 DRVR NONE 00 Unk UNK STOP N -S 01 DRVR NONE 00 Unk UNK N -S 01 DRVR NONE 00 Unk UNK UNK N -S 01 DRVR NONE 00 Unk UNK UNK N -S	N -S N -S O1 DRVR NONE 00 Unk UNK U-TURN N -N O1 DRVR NONE 00 Unk UNK U-TURN N -N UNK U-TURN U-TURN U-TURN UNK UNK UNK UNK UNK UNK UNK UNK UNK UN	STEGHT N -S 01 DRVR NONE 21 M OR-Y STOP N -S S	01 DRVR NONE 18 M OR-Y 026,052 000 000 011 DRVR INJC 42 F OR-Y 000 000 000 000 000 000 000 000 000 0
	USE QTY MOVE R FROM	CAR CAR	R CAR 9	9 S CAR	O O CAR	CAR CAR
·	SPCL USE TRLR QTY OWNER V# TYPE	03 03	DP 01 NONE N/A PSNGR 02 NONE N/A PSNGR	N/A N/A PSNGR 02 NONE N/A PSNGR	PROTE PROTE PROGR 02 NONE PROTE PROTE PROTE PROGR	0 0
Crash records shown.	WTHR CRASH SURF COLL		R S-ISTOP Y REAR Y PDO	D S-ITURN I TURN Y PDO	S-1STOP	
8 Crash re	OFFRD WIHR RNDBI SURF		N CLR N DRY N DAY	N CLD N WET	N CLD N DAY N DAY	N DRY
1 - 4 of	INT-REL TRAF-		N UNKNOMN	N NONE	IN UNKNOWN	UNKNOWN
	INT-TYPE (MEDIAN) LEGS (#LANES)	(NONE)	(NONE)	(NONE)	3-1.EG	
	RD CHAR DIRECT LOCTN	STR GHT UN 03	STRGHT UN 03	STRGHT UN 03	INTER UN 06	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	RD# FC CONN# COMPNT FIRST STREET MLG TYP SECOND STREET MT.EPNT LRS	1 14 MN 0 5.48 016000100500	1 14 MN 0 5.48 016000100800	1 14 MN 0 5.49 01600100800	1 14 MN 0 5.49 016000100S00	MN 0 5.49 016000100500
	COUNTY CITY URBAN AREA	CLACKANAS PORTLAND UA -122 33 48.55	CLACKAMAS PORTLAND UA -122 33 48.55	CLACKAMAS PORTLAND UA -122 33 48.64	CLACKANAS PORTLAND UA -122 33 48.63 CTACKANAS	PORTLAND UA
lix N - Souti	PROSMDATE BROSMDATE BROWN RITIME	Z	N N N N 07/27/2017 TH 3P 3P 45 17 38.97	M N N N N 09/17/2019 TU 11A 45 17 38.47	N N N N N 09/29/2018 SA SP 45 17 38.35 46 17 38.35	; ;
dix N - Sout	h System on a second on a seco		03064 N NONE N	03217 N COUNTY N N	_ '.	nibit 5 Ex

The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting the highest quality crash data to customers. However, because submitted to the Oregon Department of Transportation as supercentations are represented nor can assurances be made that all details pertaining to a single crash and Reporting the Crash Analysis and Reporting the providing differences. However, and reporting the crash and Reporting the Crash Data File.

In crashes being eigible for inclusion in the Statewide Crash Data File.

Page: 3							CAUSE	00	00	Ģ	000	07	0.0		Ç	00		02,08	0		00		00		00	,	00	0	29	0	0.0
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SION		Non-Add			THE ACCUSE	FROM	TOTS		~			STRGE			STOP N -S							ES	N N		CO		Z Z			STOP S -N	
COPMENT DIVIS	PORTING UNIT	5.39 to 5.59 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage			SPCL USE	OWNER	V# TYPE 02 NONE 0		PSNGR CAR	03 NONE 0	PSNGR CAR	01 NONE 9	DSNGR CAR		02 NONE 9	PSNGR CAR		I 01 NONE 0	PSNGR CAR	01 NONE 0	PRVTE PSNGR CAR	01 NONE 0	PRVTE PSNGR CAR	01 NONE 0	PRVTE PSNGR CAR	02 NONE 0	PRVTE PSNGR CAR	01 TAXI 0	PRVTE PSNGR CAR	02 NONE 0 PRVTE	PSNGR CAR
FATION DEVE	SIS AND REI	2/31/2019,	s shown.		110 %	COLL	SVRTY					S-1STOP	PDO					O-1 L-TURN 01 NONE	INC									S-1STOP	REAR PDO		
RANS POR	H ANAYLY CRASH L	015 to 1	8 Crash records shown.		TA ALLEY	SURF	LIGHT					CLR	DAY					CLR	DAY									CLD	DRY		
TION - 1	N - CRAS S SYSTEM	01/01/2	8 Cras		dund	RNDBT	DRVWY					z	z z					z z	z									z	z z		
OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION	TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT	5.39 to 5.59	- 8 of		100	TRAF-	CONTL					Z	OLINEMOMEN					N STOP STGN										N	UNKNOWN		
OREGON DEPARTMENT	RANSPORTATIC	AD TYPES, ME	S.		INT-TYPE	LEGS	(#LANES)					3-LEG	0					3-LEG	0										(NONE)		
OREGON	F	Highway 160 ALL ROAD TYPES, MP			RD CHAR	LOCTN						INTER	N 06					INTER	0 4									STRGHT	0 4 4		
		Highw			RD# FC CONN#		MILEPNT LRS					1 14	4	016000100800				1 14 MN 0	4	0.0000000000000000000000000000000000000								1 14	MN 0 5.50 016000100S00		
					COUNTY	URBAN AREA	LONG					CLACKAMAS	PORTLAND UA	-122 33 48.66				CLACKAMAS	PORTLAND UA	-122 33 48.05								CLACKAMAS	PORTLAND UA -122 33 48.76		
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To information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash related to the Oregon Department of Transportation as surances that all details pertaining to a single crash are accurate. Note: Legislative changes to DMVs vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property in grashes being eighbe for inclusion in the Statewide Crash Data File.

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OREGOM.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION TRANSPORTATION DATA SECTION - CRASH ANALLYSIS AND REPORTING UNIT

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			CAUSE								
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			ACT EVENT	001		000 001	015	000	062,121	000	0000
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		S E LICNS PED	X RES LOC			OR-Y OR<25		OTH-Y OR<25			JA UNK UNK
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T		PRTC	P# TYPE			01 DRVR		01 DRVR			01 DRVR
DEVELOPMENT DI REPORTING UNI 12/31/2019		MOVE FROM	TO	STRGHT	NW-SE		TURN-L SW-NW		STRGHT	N -S	
N DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION TRANSPORTATION DATA SECTION - CRASH ANAVLYSIS AND REPORTING UNIT COUNTY ROAD CRASH LISTING S BEAVERCREEK RD, MP 12.4 to 12.6, 01/01/2015 to 12/31/2019 1 - 2	SPCL USE	TRLR QTY OWNER	V# TYPE	Ol NONE 0	PRVTE	MTRCYCLE	02 NONE 0 PRVTE	PSNGR CAR	01 NONE 9	N/A	PSNGR CAR
ANSPORTATION - TRANSPORTA SECTION - CRASH ANAZIVSIS COUNTY ROAD CRASH LISTING MP 12.4 to 12.6, 01/01/2 Of 2 Crash records s		CRASH	SVRTY	ANGL-OTH	TURN	INC			FIX OBJ	FIX	PDO
F TRANSI COUR : RD, MP		WIHR	LIGHT	CLR	DRY	DAY			RAIN	WET	DAY
RTMENT O TTATION I		OFFRD	DRVWY	N	Z	z			7	Z	z
OREGON DEPA TRANSPOI S BEA		(MEDIAN) INT-REL LEGS TRAF-	(#LANES) CONTL	N	STOP SIGN				z	NONE	
			(#LANES)	CROSS		0				(NONE)	(03)
		RD CHAR DIRECT	LOCTIN	INTER	CN	03			STRGHT	No.	10
	COUNTY ROADS	FIRST STREET SECOND STREET	LRS	S BEAVERCREEK RD					S BEAVERCREEK RD		
	MILEPNT	DIST FROM INTERSECT	LONG	12.50		-122 32 23.52			12.52		-122 32 24.09
JNTY		U I C O DAY G N H R TIME	SVLKLAT	N N 06/16/2018	SA	5P 45 18 .13			N N 12/29/2017	FR	12P 45 18 .99
CDS 38 0 11/11 \$2021 CLACKQQAS COUNTY N N	∞ ⊶ · South	≼ i i isys	ິ ບ ter	z	TY				N	TY	
CDS38 0	SER#	INVE RD D	UNLO	n 20020	COUNTY	zz			05620	COUNTY	פ

Exhibit 5 Page 424 nf 2 Page 1984 1984

Preliminary Traffic Signal Warrant Analysis

Project Name: Cereghino Subdivision

Intersection: Oregon Highway 213 at Mitchell Lane Scenario: 2036 Background plus Zone Change

Number of Major Street Lanes: 1 PM Peak Hour Volume 2229 (sum of both approaches)

Number of Minor Street Lanes 1 PM Peak Hour Volume 9 (highest-volume approach)^a

Posted or 85th percentile speed > 40 mph: Yes
Isolated Population Less than 10,000: No

Warrant 1, Eight-Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

	nes for moving ach approach		•	r on major n approach		Vehicles per hour on minor street (total of both approaches)					
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%		
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

	nes for moving ich approach		•	r on major approach		Vehicles per hour on minor street (total of both approaches)					
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%		
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		

Warrant Anaylsis Calculations	8th Highest Hour ^b	Minimum Volume	Warrant Satisfied?
Condition A - Minimum Vehicular Volume			
Major Street Volume	1259	350	
Minor Street Volume	5	105	No
Condition B - Interruption of Continuous Traffic			
Major Street Volume	1259	525	
Minor Street Volume	5	53	No
Combination Warrant ^c			
Major Street Volume	1259	420	
Minor Street Volume	5	84	No

^a Minor-Street right turn volumes are reduced to account for the impact of right-turns on red.

Exhibit 5 Exhibits Page 435.0f.20**PRage4355058**

^b Eighth-highest hour volumes are calculated as 5.65 percent of the expected daily traffic volume.

^c This warrant should be used only after adequate trial of other alternatives has failed to solve traffic problems.

Preliminary Traffic Signal Warrant Analysis

Project Name: Cereghino Subdivision

Intersection: S Beavercreek Road at S Lammer Road Scenario: 2036 Background plus Zone Change

Number of Major Street Lanes: 1 PM Peak Hour Volume 930 (sum of both approaches)

Number of Minor Street Lanes 1 PM Peak Hour Volume 7 (highest-volume approach)^a

Posted or 85th percentile speed > 40 mph: Yes
Isolated Population Less than 10,000: No

Warrant 1, Eight-Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

	nes for moving ach approach		•	r on major n approach		Vehicles per hour on minor street (total of both approaches)					
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%		
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

	nes for moving ach approach		-	r on major approach		Vehicles per hour on minor street (total of both approaches)					
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%		
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		

Warrant Anaylsis Calculations	8th Highest Hour ^b	Minimum Volume	Warrant Satisfied?
Condition A - Minimum Vehicular Volume			
Major Street Volume	525	350	
Minor Street Volume	4	105	No
Condition B - Interruption of Continuous Traffic			
Major Street Volume	525	525	
Minor Street Volume	4	53	No
Combination Warrant ^c			
Major Street Volume	525	420	
Minor Street Volume	4	84	No

^a Minor-Street right turn volumes are reduced to account for the impact of right-turns on red.

Exhibit 5 Exhibits Page 436.0f.20**PRoperts 60:053**

^b Eighth-highest hour volumes are calculated as 5.65 percent of the expected daily traffic volume.

^c This warrant should be used only after adequate trial of other alternatives has failed to solve traffic problems.

Left-Turn Lane Warrant Analysis (ODOT Methodology)

Project Name: Cereghino Subdivision

Approach: OR Highway 213 Southbound Scenario: 2023 Background plus Site Trips

Number of Advancing Lanes: 1
Number of Opposing Lanes: 1

Major-Street Design Speed: 55 mph

	AM Volume	PM Volume
Advancing Volume for Design Hour:	615	1187
Opposing Volume for Design Hour:	965	806
Design Hour Volume Per Lane:	1580	1993
Number of Left Turns per Hour:	6	24
Left-turn lane warrants satisfied?	NO	YES

Left-Turn Lane Warrant Analysis (ODOT Methodology)

Project Name: Cereghino Subdivision

Approach: S Beavercreek Road Northbound Scenario: 2036 Background plus Zone Change

Number of Advancing Lanes: 1
Number of Opposing Lanes: 1

Major-Street Design Speed: 45 mph

	AM Volume	PM Volume
Advancing Volume for Design Hour:	643	264
Opposing Volume for Design Hour:	295	667
Design Hour Volume Per Lane:	938	931
Number of Left Turns per Hour:	2	1
Left-turn lane warrants satisfied?	NO	NO

Right-Turn Lane Warrant Analysis (ODOT Methodology)

Project Name: Cereghino Subdivision

Oregon Highway 213 Northbound at Mitchell Lane Approach:

2023 Background plus Site Trips Scenario:

Major-Street Design Speed: mph 55

	AM Volume	PM Volume
Number of Right Turns per Hour:	7	19
Approaching DVH in Outside Lane:	965	806
Calculated Turn Volume Threshold:	20	20
Right Turn Volume Exceeds Threshold?	NO	NO



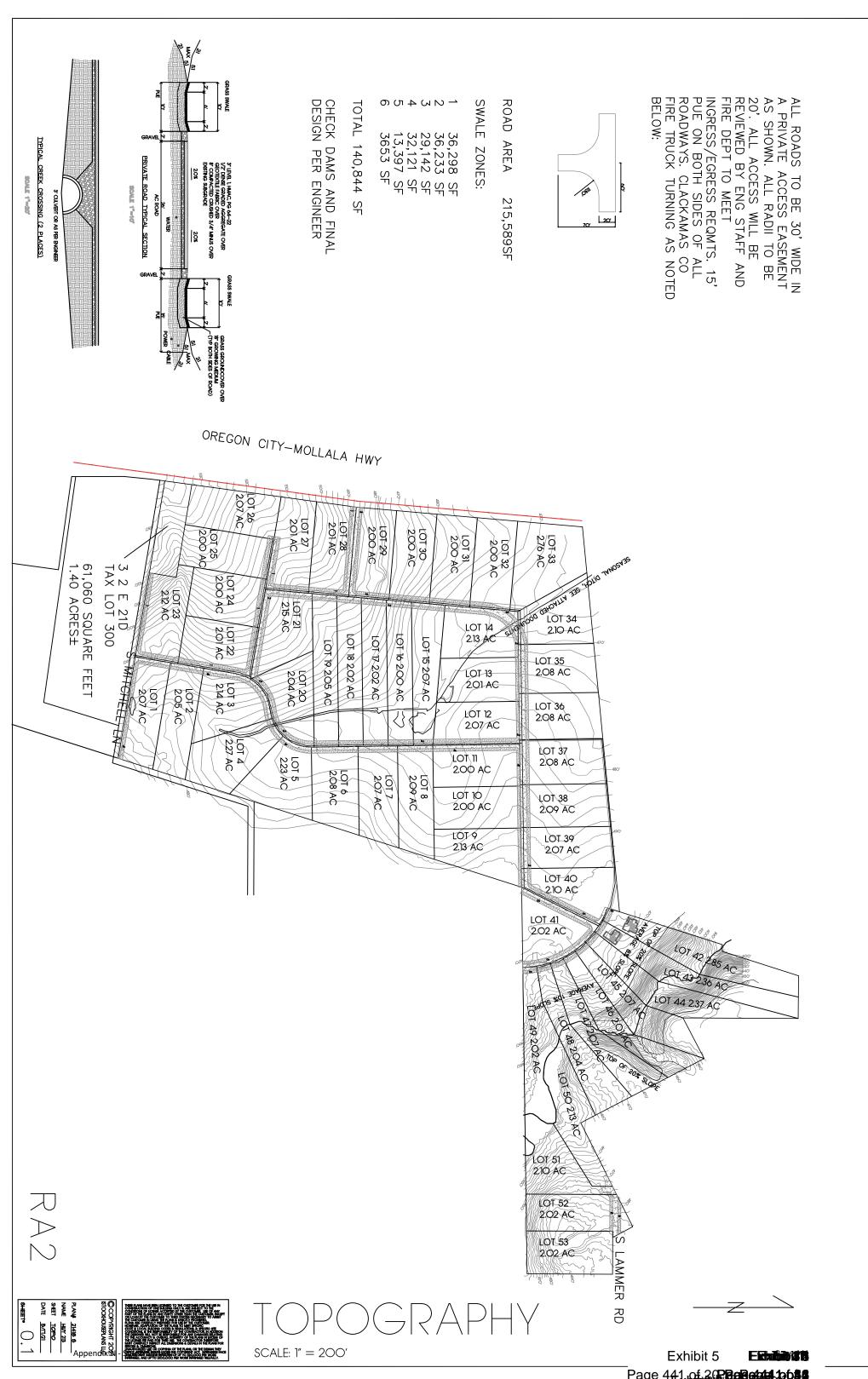
Right-Turn Lane Warrant Analysis (ODOT Methodology)

Project Name: Cereghino Subdivision

Approach: S Beavercreek Road Southbound Scenario: 2036 Background plus Zone Change

Major-Street Design Speed: 45 mph

	AM Volume	PM Volume
Number of Right Turns per Hour:	6	16
Approaching DVH in Outside Lane:	295	667
Calculated Turn Volume Threshold:	36	20
Right Turn Volume Exceeds Threshold?	NO	NO



Date: October 27, 2020 SENT VIA EMAIL

To: Ben Blessing, Planning

Clackamas County

From: Betty Johnson, Engineering Associate

Clackamas River Water

Subject: Notice of Design Review Application: File #ZPAC0102-20

Applicant: Jessey Cereghino

13820 S John Wayne Ln,

Mulino, 97042

Street Address: 2148 S Hwy 213, Oregon City, 97045

Legal Description: 32E21 00200 and 32E22 00200

Comments:

1. CRW currently has the following infrastructure available within the public right-of-way to serve the site:

- a. 12-inch ductile iron waterline located within S Hwy 213;
- b. 6-inch steel waterline located within S Lammer Road.
- 2. CRW currently is serving the site with the following service:
 - a. NA

3. Water Distribution Design & Infrastructure Requirements:

- a. Per Section 18 of CRW's Rules and Regulations, all water improvements designed and constructed by the Applicant to serve the proposed development must meet all standards and specifications of CRW; must be reviewed and approved by Clackamas River Water (Engineering) prior to issuance of a Clackamas County Development Permit, and must consider the following:
 - i. The size of a water main available to the site is limited to the size, pressure and volume within an existing or future water main serving the property. Where the demand exceeds the water main capacity, the Applicant is responsible for the total costs of a water main enlargement or extension required to meet the proposed demand.
 - 1. Applicant shall install at their expense all improvements necessary to provide water service to their development.
 - 2. Option 1:
 - a. This development will be required to construct at a minimum the following (see Option 1 below for reference):
 - b. 8-inch waterline from S Hwy 213 through the development, either within the public right-of-way or a waterline easement to Lot 10, Lot 11 can be served from S Lammer Rd to provide adequate water and fireflow protection.

3. Option 2:

- a. This development will be required to construct at a minimum the following (see Option 2 below for reference):
- b. 8-inch waterline from S Hwy 213 through the development, either within the public right-of-way or a waterline easement, to Lot 22, Lot 23 can be served from S Lammer Rd to provide adequate water and fireflow protection.

4. Option 3:

- a. This development will be required to construct at a minimum the following (see Option 3 below for reference):
 - 8-inch waterline from S Hwy 213 through the development either, within the public right-of-way or waterline easements, to serve all lots west of the creek (Beavercreek);
 - ii. Potential creek crossing with a 8-inch waterline from Lot 18 to Lot 43-52;
 - iii. If no creek crossing, then construction of an 8-inch waterline from S Beavercreek Rd along S Lammer Rd to Lot 43 will be required. Depending on demand requirements for this Option, the developer may be required to complete a looped system including creek crossing to connect the entire subdivision (west and east of the creek). Additionally, CRW's Master Plan has identified a further upgrade to the S Lammer Road waterline (CIP D-72) where all cost will be borne by the Applicant.
 - iv. All required waterline is to provide adequate water and fireflow protection.

ii. The applicant shall provide a minimum 20-foot wide but up to a 30-foot wide waterline easement depending on location to accommodate public improvements if public right-of-way is not required or obtained with Options 1 through 3.

iii. Any added fire hydrants on the existing or new waterlines will be reviewed by CRW for available capacity. CRW shall have the sole authority for making the

- determination of existing mainline capacity and its ability to meet the proposed demands of the development. The cost of any mainline work required to serve the development shall be borne entirely by the applicant.
- b. Hydraulic modeling is required to determine if the existing waterlines within S Hwy 213, S Lammer Rd, and the proposed waterlines accompanying the Option selected by the applicant, will meet the required domestic and fireflow demands. The expense of the hydraulic modeling shall be borne by the applicant.
- c. CRW will not approve plans that include hardscape landscaping (except grass or shallow root plantings) or structures (such as walls, drainage systems, or permanent structures of any type) placed within easements.
- d. Any block wall or other fence shall be designed and constructed around the outside of the easement(s), to allow the District direct access to vault(s) and inlet piping from the adjacent right-of-way.
- e. No fencing or gates shall be erected that will impede the reading or maintenance of domestic or fire meters. Gates keys, codes, or other devices necessary for site security that will or could block access to waterline easements and obstruct access to water meters, shall be provided to CRW.
- f. The average system pressure range at the hydrant located at the intersection of S Stonebridge Dr and S Hwy 213 is approximately 70-96psi.
- g. Where static water pressure is in excess of eighty (80) pounds per square inch, or other pressure as may be stipulated by the Oregon Uniform Plumbing Code, an approved pressure regulator shall be provided, installed, and maintained by the Customer and the pressure reduced below eighty (80) pounds per square inch.
- h. Water service solely for private fire protection purposes to a customer owned fire sprinkler system are classified as a fire service connection (restricted water use).
- i. The size of a fire service connection available at any site is limited to the size, pressure and volume within the existing water main serving the property. Where the demand exceeds the water main capacity, the Applicant is responsible for the total costs of a water main enlargement or extension required to meet the capacity.
- j. Private fire sprinkler systems shall be installed where required and shall be provided, owned, maintained, and tested by the customer. All fire services shall be metered and protected from backflow.

4. Service Connection and System Development Charges:

- a. Per Section 8 of CRW's Rules and Regulations, the following will be required when the Clackamas County Development Permit is issued for the parcel or per ZDO1006.05.F:
 - i. "Water service will be provided only from pipes or mains located within public streets, alleys or rights-of-way, or within easements furnished CRW, and to property or premises with frontage to such mains..."
 - ii. "Each dwelling or building will be provided with its own water service connection and meter ..."

 This means that each building will have its own domestic service connection from the newly constructed waterlines within the public right-of-way or the dedicated waterline easement.
 - i. The Customer shall pay for the abandonment of the existing water service connection if it is deemed no longer necessary to serve the property.
- b. If the proposed development plans to serve each parcel with a private well(s) the applicant must abide by the requirements of ORS 92.090.
- c. Any water supply (well) on or available to the premises, in addition to CRW's approved

potable water supply, is considered to be an auxiliary water supply.

- i. If the well is to remain in service to the existing home, and the owner requests a domestic service connection from the District, premise isolation by a reduced pressure backflow assembly is required.
- ii. If the well is to remain in service but disconnected from the existing home and the owner requests a domestic service connection from the District, premise isolation by a backflow assembly is required.
- d. System Development Charges (SDC):
 - ii. The SDC is based on meter size. 2020-2021 Water Rate, Connection & System Development Charges are attached for reference.
 - iii. The current SDC will be collected when the site has been issued a Building Permit from Clackamas County and a CRW Water Service Application has been requested by the owner/builder.

5. District Approvals:

- k. Provide waterline plans stamped by an Oregon-registered professional engineer, for review and approval by Clackamas River Water.
- The Developer will be required to pay a time and materials deposit to the District for a Plan
 Check and Inspection fee prior to review of any construction plans. Any unused portion of
 the deposit will be reimbursed, or if any monies are due the developer will be billed.
- m. Upon construction plan review there may be additional requirements as set forth by CRW.

1. Clackamas County Development Permit:

- a. It is the developer's responsibility to acquire any necessary easements for water facilities that shall be provided and designated on the final plat, as deemed necessary by the District. These easements must have functional access to public right of way and be properly recorded.
- b. Fire and domestic water services as approved with this land use application, are intended specifically for the lot and are not intended to serve additional parcels or structures which may be created in the future. In the event that the parcels and/or lots are further divided to create additional parcels or lots, the owner is required to provide separate fire and domestic water services per CRW's Rules and Regulations.
- c. Future fire related improvements will require review and approval of Clackamas County Fire District #1 to ensure proper fire coverage and fire service connection installation in accordance with applicable regulations along with the appropriate backflow prevention assembly and flow detector.

CRW has no objections to this application, however these comments are introductory and may change based on the County's land use approval, and preliminary/final design.

For further information regarding water service application please contact Betty Johnson, Engineering Associate, at 503-723-2571 or bjohnson@crwater.com.

cc: Clackamas Fire Applicant file

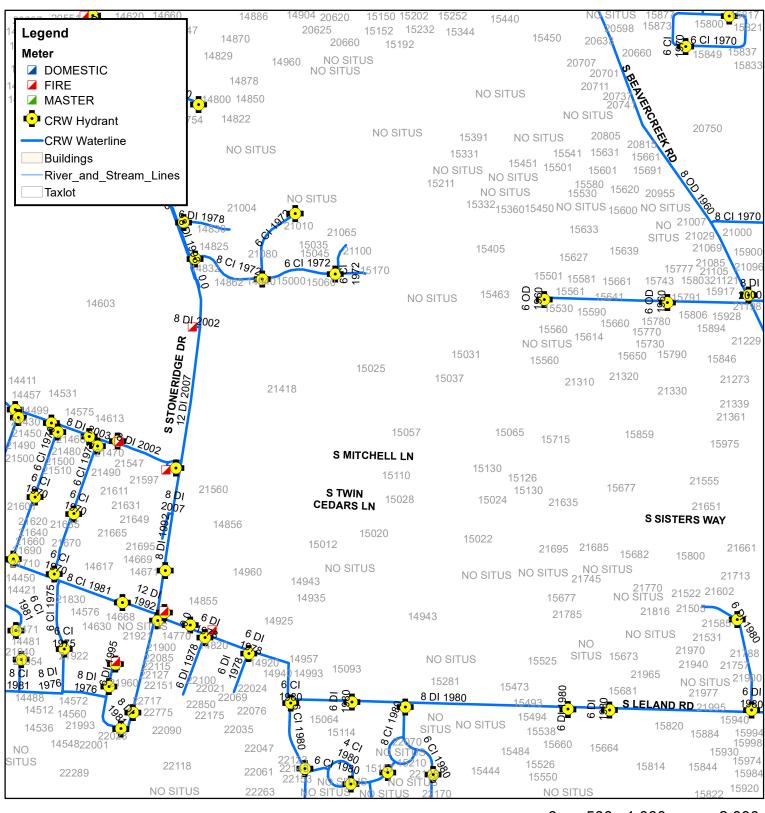
F:\1B County & City Design Review\Pre-App, Design Review & Land Use Applications\21418 S Hwy 213\LAND USE\21418 S Hwy 213 - CRW comments ZPAC0102-20(10-26-20).docx

Appendix N - South System

Exhibit 5

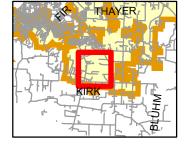
Page 446 ALCRES After 18

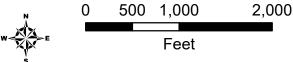
Clackamas River Water - 21418 S Hwy 213 & 32E22 00200



Date: October 23, 2020
Drawing Name: GIS-Development
Drawing Location: I:\Documentation\Facility Data
Drawing By: B.Johnson

MAP FOR REFERENCE PURPOSES ONLY The information on this map is derived from Clackamas River Water's digital database. However, there may be map errors or omissions. Please contact Clackamas River Water directly to verify map information. Notification of any terrors is appreciated.





CLACKAMAS RIVER WATER

GEOGRAPHIC INFORMATION SYSTEM

Exhibit 5

Page 447 A Page 447 A

Clackamas River Water Water System Plan Capital Improvement Program

Project ID: D-72

Project Name: S Lammer Rd Pipe Upsize

Facility Type: Pipe
Pressure Zone: Beaver Creek

Go to CIP Summary Table

Project Description:

Replace existing 6" pipe with 8" pipe on S Lammer Rd from S Beavercreek Rd west to end of street.

Purpose:

- 1. Project is required to provide fire flow.
- 2. This pipeline will reach its remaining useful life by the year 2019.
- 3. This pipeline was flagged by CRW as a pipeline with reported leakage.

Project Element	Quantity	Unit	Unit Cost (\$/Unit)	Subtotal	Construction Contingency 30%	Engineer/ Legal/Admin 25%	Project Contingency 20%	Total Cost
8" Pipe	2,201	LF	\$ 230	\$ 506,230	\$ 151,869	\$ 126,558	\$ 101,246.00	\$ 885,903

Total Project Cost \$ 885,903

Cost Allocation:

Project Type	Percent	Cost
Capacity:	0%	\$ -
Repair & Replacement:	50%	\$ 442,951
Improvement:	50%	\$ 442,951
Improvement:	50%	\$ 442,9

Total Project Cost	100% \$	885,903

Project Completed?	No

Go to Assump	tıc	ns	Tab
--------------	-----	----	-----

Project Timing:	Go to Assumptions 1ab			
Project Element	Timing			Cost
8" Pipe	2027		\$	885,903

Total Project Cost	\$ 885,903		l
--------------------	------------	--	---

Project Location:	
	Go to Maps Tab

Clackamas River Water

Water rate, Connection, and System Development Charges

Water Effective Date: 11/1/2020 SDC Effective Date: 7/1/2020

						DC Effective Dat	e. //1/2020
	Bi-Monthly Service Charges for All Direct Service Customers						
Meter	Domestic	Fire					
Sizes	Service	Service	Connection Fee		SDC	SDC	Total SDC
(Inches)	Charges	Charges	Pre-Run/Install		Reimbursement	Improvement	Charges
full 3/4	\$ 55.51	\$ 58.10	\$ 500	TMO	\$ 2,461	\$ 3,053	\$ 5,514
1	76.70	58.10	600	TMO	\$ 4,101	\$ 5,089	\$ 9,190
1 1/2	109.13	69.51			\$ 8,199	\$ 10,178	\$ 18,377
2	146.61	82.80			\$ 13,119	\$ 16,285	\$ 29,404
3	235.52	117.72					
4	362.00	187.60	a			b	
6	678.46	327.37					
8	1,533.44	467.50					
10	2,412.37	747.39					
12	2,914.60	922.14					

Res 18-2014 11/1/2020 (per Ordinance 02-2020 4/15/20)

- a Calculated to cover time, materials and overhead. Pre-run refers to service lines installed by developer during subdivision construction.
- b Calculated based upon anticipated water demand as compared to equivalent residential units (3/4"). The amounts shown for 1 1/2 & 2" are minimum charges.

Commodity Charge for Direct Service Customers per 100 Cubic Feet

Single Family Dwelling (3/4 or 1")

Volume		Rate
Block 1	1 - 4	\$ 2.37
Block 2	5 - 8	2.63
Block 3	9 - 24	3.13
Block 4	25 & up	3.99
Leak Relie	f Rate	1.50

Multi-Family, Commercial & Industrial (all sizes)

	Volume	R	Rate		
Block 1	С	\$	2.91		
Block 2	d		3.63		

- c Volume up to 1.5 times average winter consumption
- d Volume above 1.5 times average winter consumption

Average Winter Consumption: Total consumption (volume) recorded on a customer's December and February bills, divided by two.

Exhibit 5 Exhibit 5 Page 449 644



CLACKAMAS COUNTY PLANNING AND ZONING DIVISION
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DEVELOPMENT SERVICES BUILDING
150 BEAVERCREEK ROAD | OREGON CITY, OR 97045
503-742-4500 | ZONINGINFO@CLACKAMAS.US

PRELIMINARY STATEMENT OF FEASIBILITY

To be completed by the applicant:					
Applicant's Name:					
Property Legal Description: T S, R, Section, Tax Lot(s)					
Site Address:Project Engineer:					
Project Title/Description of Proposed Development:					
To be completed by the service provider or surface water management authority:					
Check all that apply:					
Sanitary sewer capacity in the wastewater treatment system and the sanitary sewage collection system is available to serve the development or can be made available through improvements completed by the developer or the system owner.					
 Adequate surface water treatment and conveyance is available to serve the development or can be made available through improvements completed by the developer or the system owner. 					
□ Water service is available in levels appropriate for the development, and adequate water system capacity is available in source, supply, treatment, transmission, storage and distribution or such levels and capacity can be made available through improvements completed by the developer or the system owner. This statement □ applies □ does not apply to fire flows.*					
*If water service is adequate with the exception of fire flows, the applicant shall submit a statement from the fire district serving the subject property that states that an alternate method of fire protection, such as an on-site water source or a sprinkler system, is acceptable.					
This statement is issued subject to conditions of approval set forth in the attached.					
□ Adequate □ sanitary sewer service, □ surface water management, □ water service cannot be provided.					
Signature of Authorized Representative Date					
Title Name of Service Provider or Surface Water Management Authority					

Completion of this statement does not reserve capacity for the development and does not alter an applicant's obligation to comply with the service provider's or surface water management authority's regulations. Completion of this statement does not obligate the service provider or surface water management authority to finance or construct improvements necessary to provide adequate service for the proposed development. Completion of this statement does not guarantee that land use approval for the proposed development will be granted.

Attachment County Preliminary Statement of Feasibility

To:	Jessey Cereghino
From:	Betty Johnson
Date:	October 26, 2020
Re:	21418 S Hwy 213, Oregon City, 97045

• Comments:

- A. Development will require main extensions per Clackamas River Water Rules and Regulations.
- B. "Water service will be provided only from pipes or mains located within public street, alleys or rights-of-way, or within easements furnished to CRW, and to property or premises with frontage to such mains.... Each dwelling or building will be provided with its own water service connection and meter ... No person shall furnish water to other buildings or premises without the written approval of the Board, which may be granted in the sole discretion of the Board, and then only under the specific terms of an agreement approved by CRW"
- C. Fire hydrant number and distribution shall be in accordance with the Oregon Fire Code C105.1
- D. Placement of fire hydrant systems shall be in accordance with the Oregon Fire Code 507.5.1
- E. Unless Noted on plans or specified otherwise, all construction and backflow devices are to be in accordance with the most recent version of Clackamas River Water standards and the Oregon Administration Rules (OAR), Chapter 333.
- F. All water facilities design, construction, testing and maintenance, where applicable, shall conform to the latest adopted revision of the Oregon state Health Division administrative Rules chapter 333 on Public water System except where provisions outlined in the Clackamas River Water rules and regulations.
- G. For design of District's water system improvements, hydraulic system must be analyzed using the worst- case scenario envisioned in the district's current Water System Facilities Plan. The water system analysis shall be conducted using a simultaneous demand for the maximum (peak) day demand or peak hour non-fire demand, whichever is greater, and the fire demand.
- H. Any substantial deviation from the approved construction plans must have prior approval of the Water District.
- I. Easements for water facilities shall be provided along property lines and designated on the final plat, as deemed necessary by the Water District.
- J. Resale of water purchased from the Water District will not be permitted. No user shall resell or permit resale of water directly to any person, or for any use.

F:\1B County & City Design Review\Pre-App, Design Review & Land Use Applications\21418 S Hwy 213\Preliminary Statement of Feasibility\21418 S Hwy 213 - Statement of Feasibility Conditions.docx

- K. An approved water system capable of supplying required fire flow for fire protection shall be provided to all premises upon which buildings are to be constructed.
- L. If water service is adequate with the exception of fire flows, the applicant shall submit a statement to Clackamas River Water from the fire district serving the subject property that states that if and /or what alternate method of fire protection is acceptable.
- M. Upon plan review there may be additional requirements as set forth by the Water District.
- N. The applicant must comply with ORS 92.090 if the proposed development plans to serve each parcel with a private wells.

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Wetland Delineation S. Molalla Avenue **Clackamas County, Oregon**

(Township 3 South, Range 2 East, Section 21, Tax lot 200)

Prepared for

Jessey Cereghino 13820 S John Wayne Lane Mulino OR 97042

Prepared by

Amy Hawkins, Joe Thompson Mike See, John van Staveren Pacific Habitat Services, Inc. Wilsonville, Oregon 97070 (503) 570-0800 (503) 570-0855 FAX

PHS Project Number: 7152

June 15, 2021

Appendix N - South System Exhibit 5

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I. INTRODUCTION

Pacific Habitat Services, Inc. (PHS) conducted a wetland delineation for the S. Molalla Avenue development site in Clackamas County, Oregon (Township 3 South, Range 2 East, Section 21, Tax lot 200). This report presents the results of PHS's wetland delineation within the study area. Figures, including a map depicting the location of wetlands within the study area, are located in Appendix A. Data sheets documenting on-site conditions are in Appendix B. Ground-level photos of the site are located in Appendix C. A discussion of the wetland delineation methodology, provided for the client, is in Appendix D.

II. RESULTS AND DISCUSSION

Α. **Landscape Setting and Land Use**

The study area is located east of S. Molalla Avenue (Highway 213), and north and east of S. Mitchell Lane; it consists of one tax lot (TL 200) in Clackamas County, Oregon. Besides being bounded by these two roads, the site is bounded to the north by a housing development and open space. Land use around the study area includes agriculture, single-family residential, and open space. Stone Creek Golf Club is located across Highway 213 from the study area.

The study area consists of gently sloping topography, with the highest elevations located in the southwestern portion of the tax lot. Elevations on site range from 520 to 450. The lowest elevations are in the central portion of the study area. The site generally consists of land that has been managed for agricultural grass seed/hay production and livestock. A single family home, a barn, and several outbuildings are located in the west-central portion of the study area.

As stated above, most of the site is fallow pasture, and consists of facultative grasses and weedy forbs that are semi-regularly mowed/harvested. A large patch of Himalayan blackberry (Rubus armeniacus, FAC) is present in the southeast portion of the study area.

A linear wetland flows north (seasonally) through the central portion of the study area, and is described below in Section E.

В. Site Alterations

Historical photos of the study area from 1952 through 2020 shows very little change on the site. No recent fill material or deposits were observed within the study area.

C. **Precipitation Data and Analysis**

The fieldwork for the delineation occurred on February 4, 2021, and April 7, 2021; precipitation data for the months preceding these dates is summarized below in Table 1.

Table 1 compares the most recent monthly precipitation amounts recorded in Oregon City, OR (the closest station to the study area) to the average monthly precipitation recorded in Oregon City, as well as to the normal precipitation range as identified in the Natural Resource Conservation Service's (NRCS) WETS climate table for Oregon City. These data show that

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when rainfall amounts have varied most significantly from the mean, the amounts may also have fallen outside the normal range of variability for this area. For this period, November and December 2020, and January 2021 were above the normal range of variation; February 2021 was within the normal range of variation; and March 2021 was below the normal variation.

Table 1: Comparison of average and observed monthly precipitation in Oregon City, prior to the February and April delineation fieldwork.

		30% Chance Will Have			D	
Month	Average Precipitation ¹	Less Than Average ¹	More Than Average ¹	Observed Precipitation ²	Percent of Normal	
November 2020**	6.51	4.46	7.77	7.82	120	
December 2020**	7.30	5.08	8.68	9.42	129	
January 2021**	6.42	4.13	7.73	9.17	143	
February 2021	4.78	3.25	5.71	5.32	111	
March 2021*	5.11	3.56	6.08	3.09	60	

Notes: 1. Source: NRCS WETS Table for Oregon City, OR (Requested years: 1970-2020) (http://agacis.rcc-acis.org)

Total observed precipitation for the water year up to the month prior to the February field work (October 1, 2020, through January 31, 2021) was 23.88 inches, which was approximately 125 percent of the normal for those months. Table 2 shows daily precipitation totals for the two weeks prior to the fieldwork, and on the day of the fieldwork (February 4, 2021).

Table 2: Daily precipitation totals for two weeks prior to and including the day of fieldwork (February 4, 2021).

Date	Precip. (in.)	Date	Precip. (in.)	Date	Precip. (in.)
Jan-21	0.08	Jan-26	0.08	Jan-31	0.16
Jan-22	0.01	Jan-27	0.11	Feb-1	0.17
Jan-23	0	Jan-28	0.18	Feb-2	0.6
Jan-24	T	Jan-29	0.03	Feb-3	0.67
Jan-25	0.39	Jan-30	0.11	Feb-4	0.02

Total observed precipitation for the water year up to the month prior to the April field work (October 1, 2020, through March 31, 2021) was 33.77 inches, which was approximately 113 percent of the normal for those months. Table 3 shows daily precipitation totals for the two weeks prior to, and the day of fieldwork (April 7, 2021).

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^{2.} Source: NRCS monthly precipitation data (http://agacis.rcc-acis.org)

^{*----}Monthly rainfall was below the 'normal' range

^{**----}Monthly rainfall was above the 'normal' range

Table 3: Daily precipitation totals for two weeks prior to and including the day of fieldwork (April 7, 2021).

Date	Precip. (in.)	Date	Precip. (in.)	Date	Precip. (in.)
Mar-24	0.01	Mar-29	0.23	Apr-3	0.00
Mar-25	0.08	Mar-30	0.04	Apr-4	0.00
Mar-26	0.02	Mar-31	0	Apr-5	0.00
Mar-27	0	Apr-1	0.00	Apr-6	0.00
Mar-28	0	Apr-2	0.00	Apr-7	0.00

The precipitation fluctuations preceding the delineation are not expected to have affected the wetland boundaries because the delineation generally relied on the presence of hydric soil indicators, algal mats, and topography to define the wetland/upland boundary. The wetlands appear to be the result of a shallow groundwater table, and are the result of their position in the landscape rather than the result of precipitation.

PHS believes that "normal circumstances" in terms of precipitation for this site have generally prevailed during the wetland delineation fieldwork. While varied precipitation has fallen in the months leading up to the fieldwork, this is typical of late winter and early spring within the Willamette Valley.

D. Methods

PHS delineated the limits of the wetlands on the site based on the presence of wetland hydrology, hydric soils, and hydrophytic vegetation, in accordance with the Routine On-site Determination, as described in the *Corps of Engineers Wetland Delineation Manual, Wetlands Research Program Technical Report Y-87-1* ("The 1987 Manual") and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region.* PHS conducted the wetland delineation within the study area on February 4 and April 7, 2021.

The entire study area was investigated for the presence of wetlands or other waters. Six wetlands were delineated within the study area. Wetlands A through F were delineated based on topographic changes and changes from observed hydric soils to soils where no hydric indicators were observed. The presence/absence of saturation or a water table within the upper 12 inches of the soil profile, as well as algal mats was also used to determine the wetland boundaries. Vegetation within the wetland and adjacent upland generally consists of mixed, facultative grasses, and was not a good indicator of the wetland/upland boundary. The boundary of Wetland A was determined largely though topography, as it is a linear wetland with seasonal flow.

The vegetation throughout the project area generally consists of facultative grasses and weedy forbs that are semi-regularly mowed. PHS did not take additional data in areas that are topographically higher than the wetlands (other than data needed to verify the wetland/upland boundary).

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Exhibit 5

Sample point 2 is located in a topographically low area, west of Wetland A, in the central portion of the site. This sample point is representative of the mowed, grassy upland areas throughout the site. The upland areas do not exhibit surface indicators of wetlands (i.e. ponded surface water, geomorphic position, or stunted/stressed vegetation, FACW or wetter vegetation, etc.).

E. Description of all Wetlands and Other Non-Wetland Waters

Wetlands A, B, C, D, E, and F

Wetlands A, B, C, D, E, and F are similar in vegetation structure, soils, and hydrology. The following table outlines Wetlands A through F.

Table 4. Summary of Wetland Areas within the S. Molalla Avenue Study Area

Wetland	Size (sq. ft. /acres)	Cowardin Class	Hydrogeomorphic (HGM) Class	Dominant Vegetation
A	20,461 / 0.47	Palustrine/emergent/ seasonally saturated (PEMC)	Slope	Pennyroyale (Mentha pulegium, OBL) and sweet vernal grass (Anthoxanthum odoratum, FAC)
В	3,010 / 0.07	PEMC	Slope	Meadow foxtail (Alopecurus pratensis, FAC)
C	285 / 0.01	PEMC	Slope	Meadow foxtail
D	10,287 / 0.24	PEMC	Slope	Meadow foxtail, Colonial bentgrass (Agrostis capillaris, FAC)
E	2,582 / 0.06	PEMC	Slope	Tall fescue (Schedonorus arundinaceus, FAC)
F	1,774 / 0.04	PEMC	Slope	Meadow foxtail, bluegrass (<i>Poa</i> sp., FAC)
Total	38,399 / 0.89			

Soils within Wetlands A through F meet the hydric soil criteria for Redox Dark Surface (F6) or Depleted Dark Surface (F7).

Wetlands A through F exhibited algal mats, surface saturation, a high water table, and/or saturation within the upper 12 inches of the soil profile during the delineation. Wetlands B-F do not continue offsite. Wetland A continues offsite to the north.

F. Deviation from Local Wetland or National Wetland Inventories

The National Wetland Inventory (NWI) maps a linear riverine wetland through the central portion of the site. This is consistent with PHS' delineation of Wetland A; however, PHS also delineated Wetlands B through F. This discrepancy may be due to land use or land cover at the time of the NWI mapping.

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G. Mapping Method

PHS flagged the limits of the wetlands within the study area with blue pin flags; lime green tape was used for sample point locations. Ferguson Land Surveying then performed a professional land survey of the delineated boundaries. The accuracy of the survey and sample points is subcentimeter. Sample points 2 and 15 were placed on the map using field notes; the accuracy of these data points is +/- 3 feet.

H. Additional Information

None

I. Results and Conclusions

PHS delineated Wetlands A through F within the study area. The total area of wetland within the study area boundary is 38,399 square feet (0.89 acres), as summarized in Table 4 in Section E above.

J. Required Disclaimer

This report documents the investigation, best professional judgment and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055.

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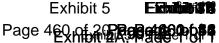
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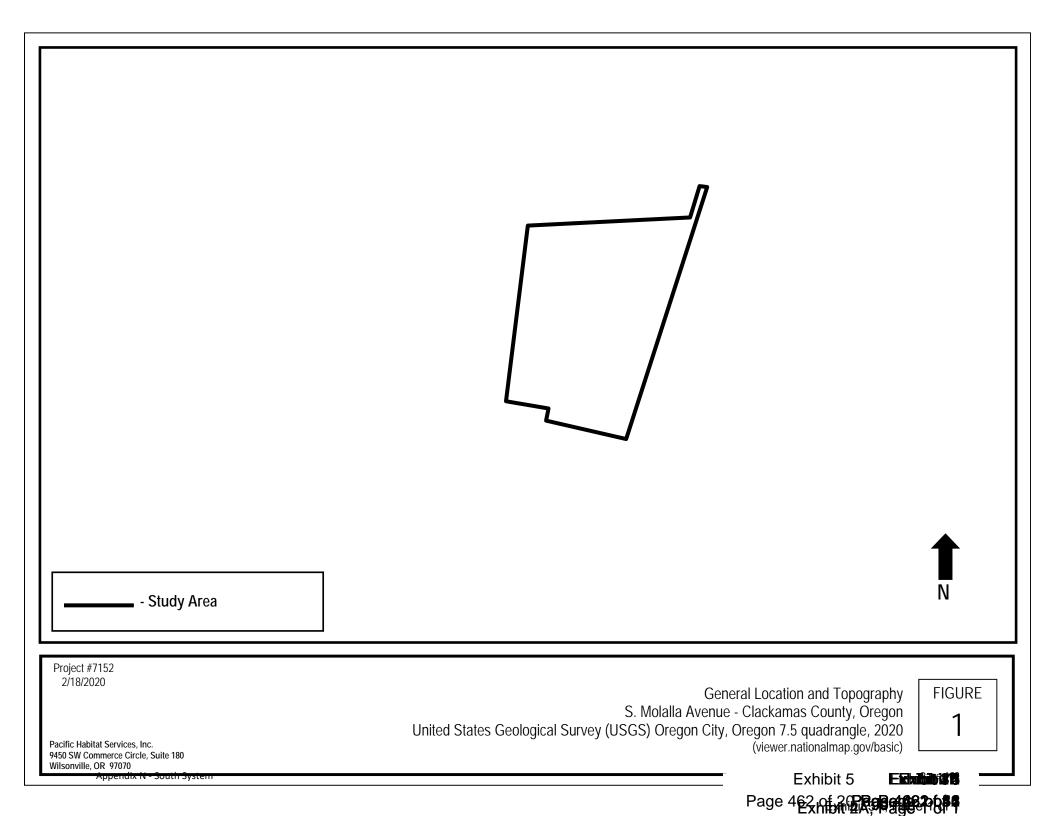
Appendix N - South System

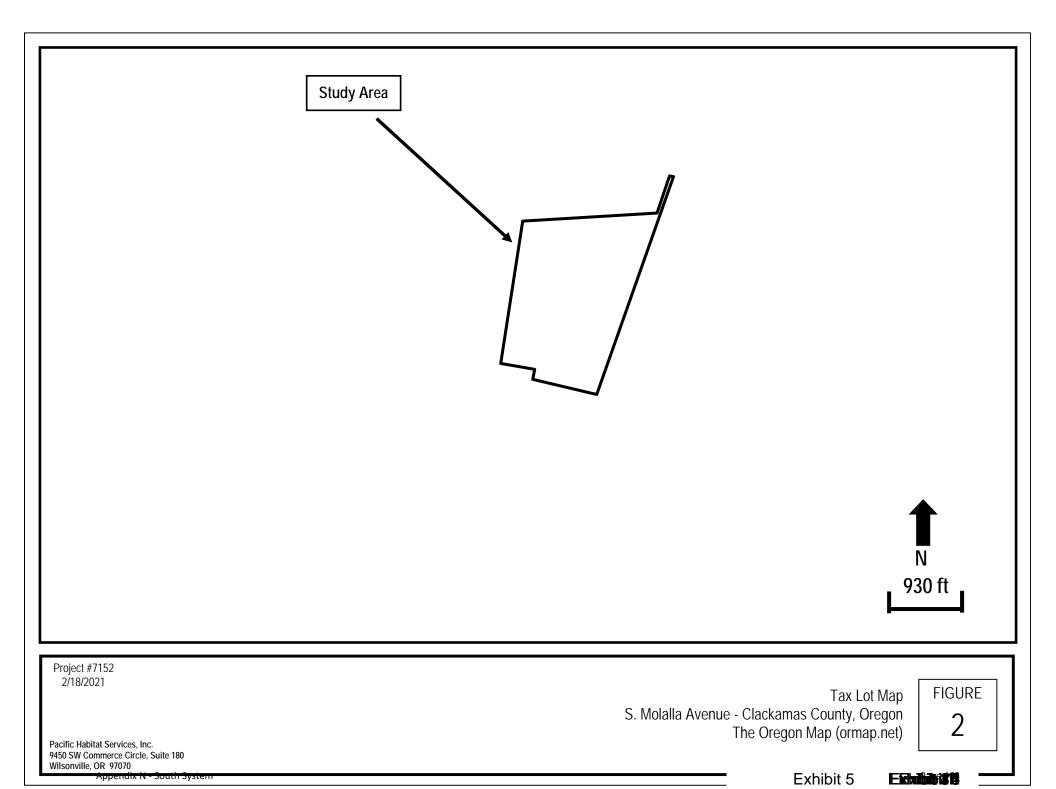


Appendix A

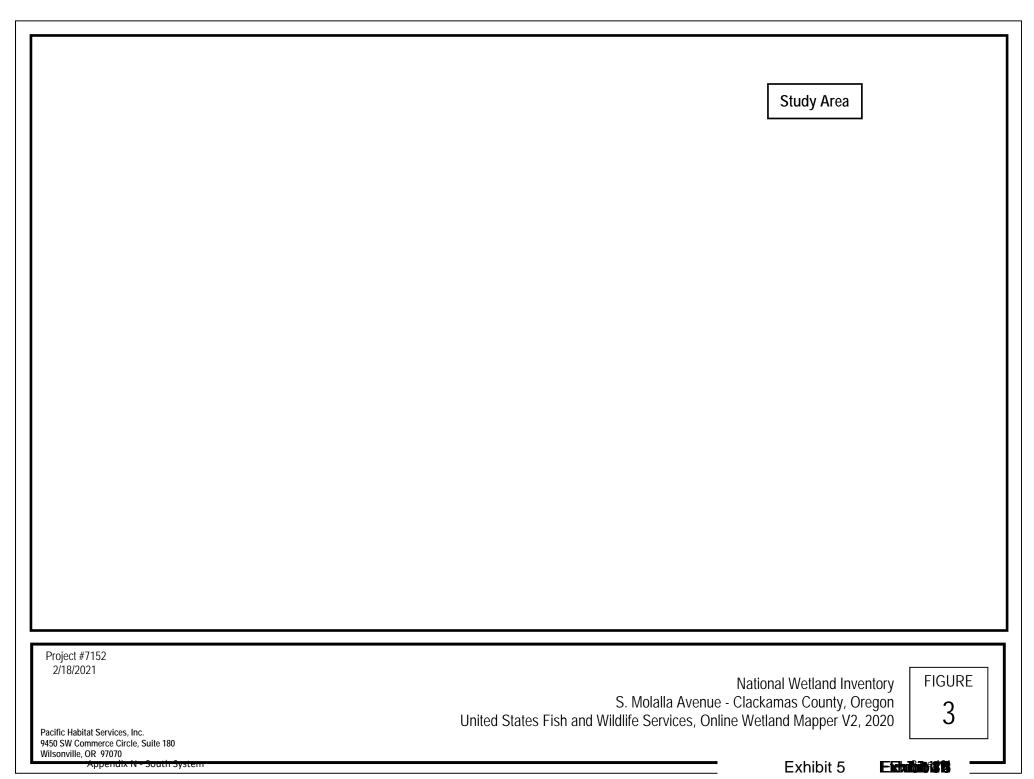
Figures

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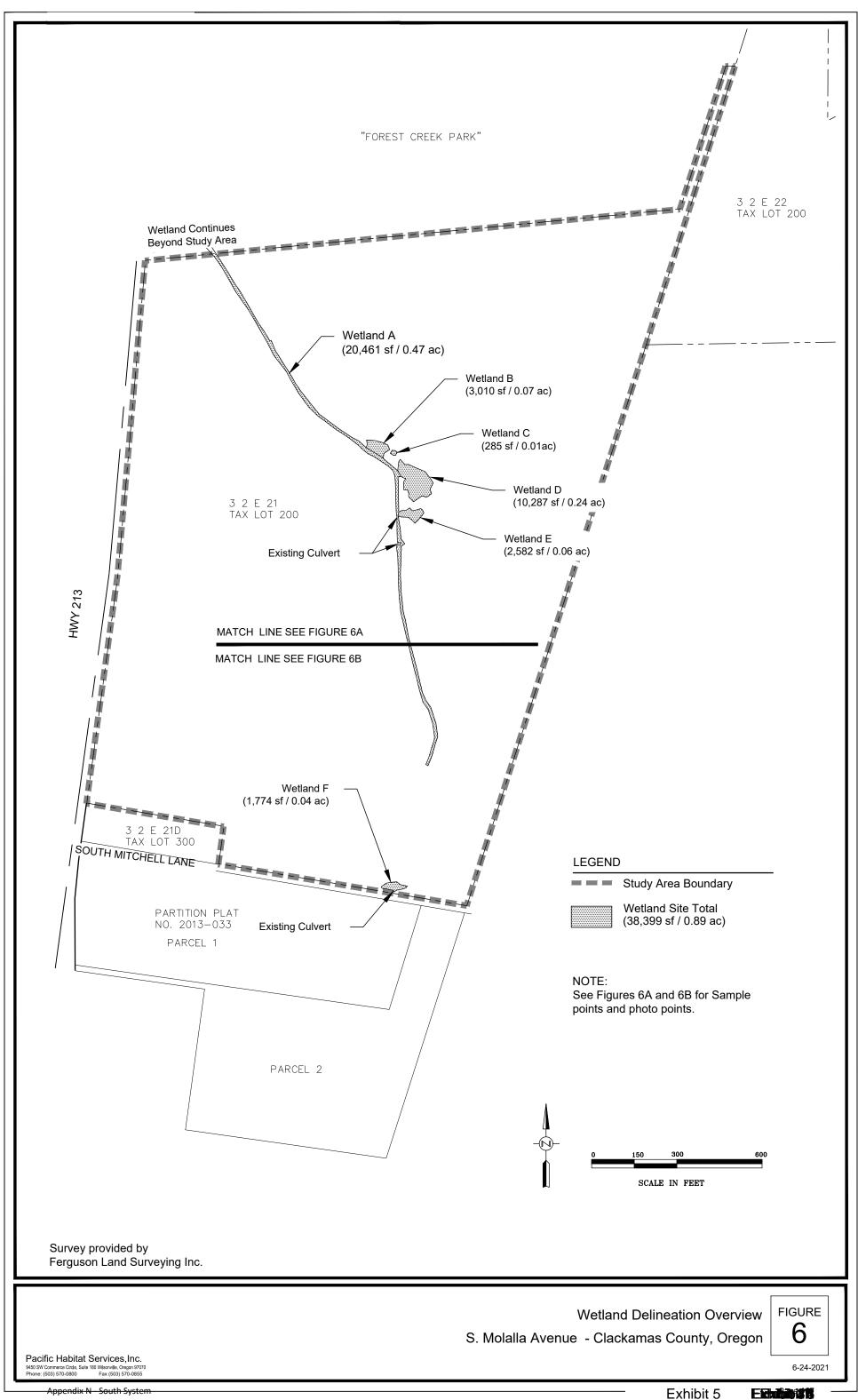
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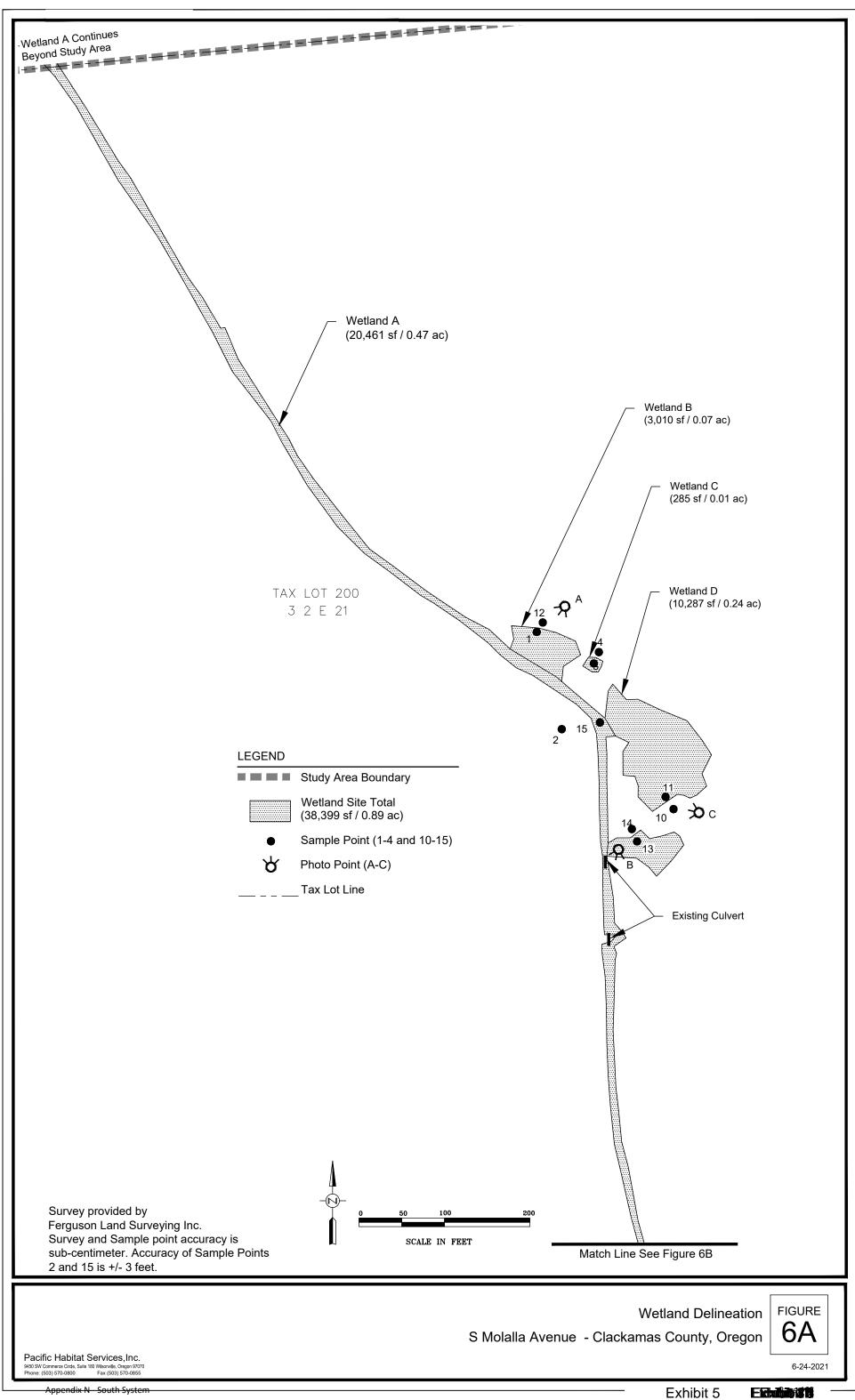


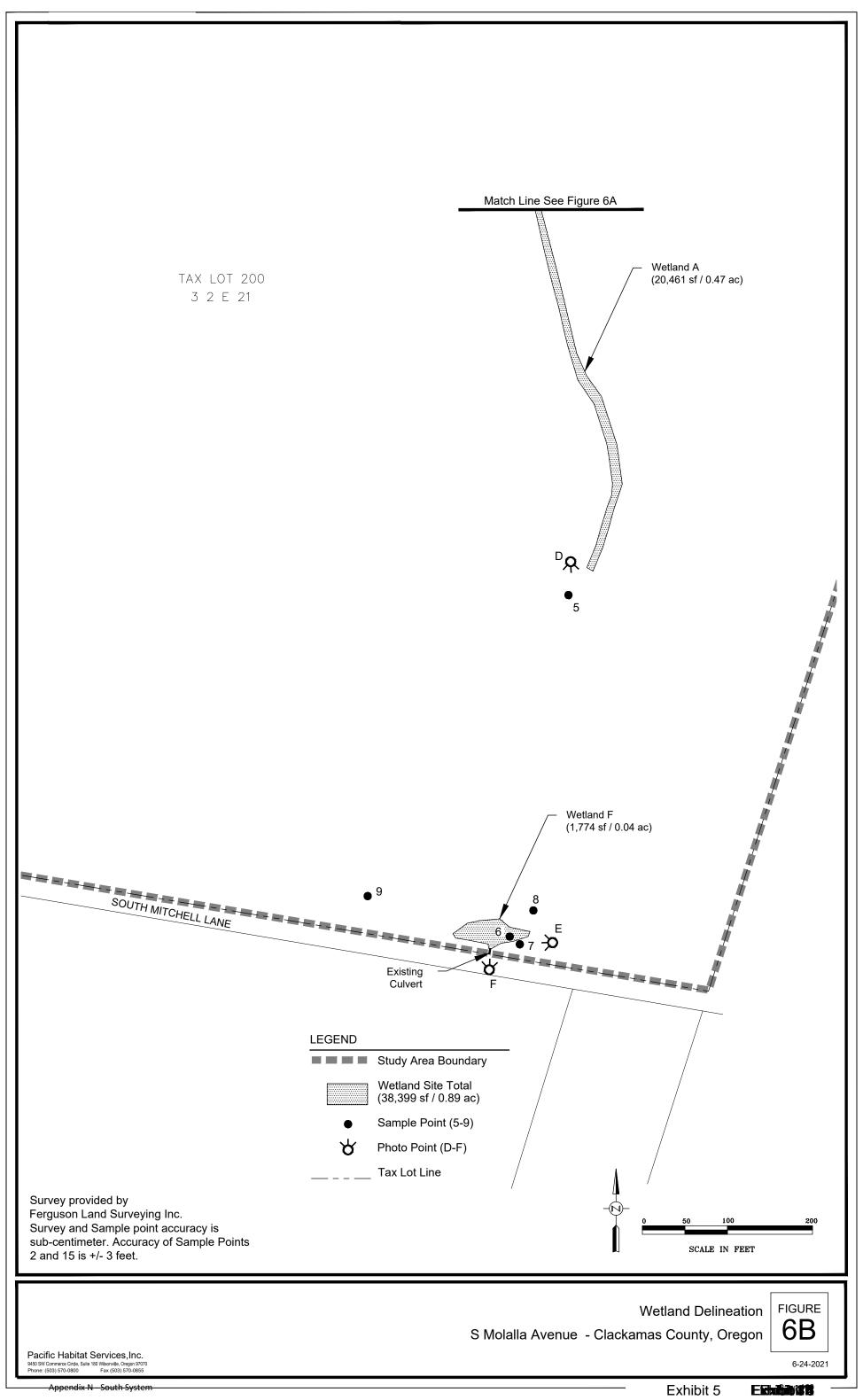
Study Area Soils Legend 24B - Cottrell silty clay loam, 2-8% slopes 45B - Jory stony silt loam, 2-8% slopes 92F - Xerochrepts and Haploxerolls, very steep Project #7152 2/18/2021 **FIGURE** Soils S. Molalla Avenue - Clackamas County, Oregon Natural Resources Conservation Services, Web Soil Survey, 2020 (websoilsurvey.sc.egov.usda.gov) Pacific Habitat Services, Inc. 9450 SW Commerce Circle, Suite 180 Wilsonville, OR 97070 Exhibit 5

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Study Area Project #7152 2/18/2021 **FIGURE** Aerial Photo S. Molalla Avenue - Clackamas County, Oregon GoogleEarth, 2020 Pacific Habitat Services, Inc. 9450 SW Commerce Circle, Suite 180 Wilsonville, OR 97070 Exhibit 5







Appendix B

Wetland Determination Data Sheets

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Project/Site: S. Mo	lalla Avenue)	City/County:	Oregon	City/Clackamas	Sampling Date	: 2/4/2	2021
•	Cereghino				State:	OR	Sampling Point:	1
Investigator(s):	AH/JT		Section, To	wnship, Range:		Section 21 T3	_	
Landform (hillslope, terrace, etc.:	:)	Slope	<u>-</u>		icave, convex, none):	Concave	Slope (%):	~1
Subregion (LRR):	LRR A		Lat:	45.2976	-			WGS84
Soil Map Unit Name:		Cottrell s	ilty clay loam			ssification:	None	
Are climatic/hydrologic condition:	s on the site tw			Yes	X No		plain in Remarks)	
	-		significantly dist		Are "Normal Circumstance			
			-			, , ,		
Are vegetation Soil	or Hyd	Tology	naturally probler	nauc? ii needed	, explain any answers in Re	emarks.)		
SUMMARY OF FINDING	S - Attach	site map	showing sam	pling point	ocations, transects	, important fea	tures, etc.	
Hydrophytic Vegetation Present?	Yes	X No						
Hydric Soil Present?	Yes	X No		Is Sampled Ar		X	No	
Wetland Hydrology Present?	Yes	X No			•			
Remarks:		·						
Hydrology was re-examine	ed on April 7	, 2021. See i	remarks.					
VEGETATION - Use scie	entific nam	es of plant	s.					
		absolute	Dominant	Indicator	Dominance Test wor	ksheet:		
Free Stratum (plot size:	\	% cover	Species?	Status	Number of Descise and C	-i		
1)				Number of Dominant Spe		4 /	'Λ\
					That are OBL, FACW, or	-AU:	((A)
3					Total Number of Dominar	t		
<u> </u>					Species Across All Strata		1 ((B)
·		0	= Total Cover		openios / toross / tir otrata	·	· · · · · · · · · · · · · · · · · · ·	,_,
Capling/Charth Ctratum								
Sapling/Shrub Stratum (plot s 1	ize:)			Percent of Dominant Spe		4000/	(A /D)
					That are OBL, FACW, or		100%	(A/B)
3					Prevalence Index Wo	rksheet:		
4					Total % Cover of	Multiply	bv:	
5					OBL Species	x 1		
		0	= Total Cover		FACW species	x 2	= 0	
					FAC Species	x 3	= 0	
lerb Stratum (plot size:	5)				FACU Species	x 4	= 0	
1 Alopecurus pratensis		60	X	FAC	UPL Species	x 5		
2 <u>Unidentified forb</u>		5		(FAC)	Column Totals	0 (A)	<u> </u>	B)
3 4					Decorded to decord	2/4 -	#DIV/01	
4 5					Prevalence Index =	3/A =	#DIV/0!	
5 6					Hydrophytic Vegetat	ion Indicators:		
7							drophytic Vegetation	1
8						2- Dominance Test		
		65	= Total Cover			3-Prevalence Index	is ≤ 3.0 ¹	
						4-Morphological Ada	aptations¹ (provide su	upporting
	:)					on a separate sheet)	
Voody Vine Stratum (plot size						5- Wetland Non-Vas		
1					Ī	Problematic Hydron	hytic Vegetation¹ (Ex	plain)
1					L			
1		0	= Total Cover		¹ Indicators of hydric soil a			unless
1		0	= Total Cover		¹ Indicators of hydric soil a disturbed or problematic.			unless
Noody Vine Stratum (plot size 1 2 8 Bare Ground in Herb Stratum	3		= Total Cover		¹ Indicators of hydric soil a		y must be present, u	unless

SOIL			PHS#	7	152			Sampl	ing Point:	1
Profile Descri	ption: (Describe to	the depth	needed to docume	ent the inc	dicator or co	nfirm the abse	ence of indicators.)			
Depth	Matrix			Redo	x Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	<u> </u>
0-3	7.5YR 3/3	98	10YR 2/1	2						
3-7	7.5YR 3/2	90	10YR 2/1	10	<u> </u>	M	Silt Loam	Manganese	Nodules	
7-13	7.5YR 3/2	90	7.5YR 4/6	8	<u> </u>	M	Silt Loam	Blotchy		
			10YR 3/1	2	<u> </u>	M		Manganese	Nodules	
	centration, D=Depleti						La di a	² Location: PL=Po		
-	Indicators: (Appl	icable to	all LRRs, unles	s otnerw			Indica	ators for Proble	-	
	Histosol (A1)				Sandy Redo				m Muck (A10)	
	Histic Epipedon (A2)				Stripped Mat	` ,			d Parent Mate	
	Black Histic (A3)				•		(except MLRA 1)	Ve	y Shallow Da	rk Surface (TF12)
	Hydrogen Sulfide (A4	1)			Loamy Gleye	ed Matrix (F2)		Oth	ner (explain in	Remarks)
	Depleted Below Dark	Surface (A11)		Depleted Ma	trix (F3)				
	Thick Dark Surface (A12)		X	Redox Dark	Surface (F6)		3 Indicators of by	drambutia vaar	station and watland
	Sandy Mucky Minera	l (S1)			Depleted Da	rk Surface (F7))			etation and wetland nless disturbed or
	Sandy Gleyed Matrix	(S4)			Redox Depre	essions (F8)		, 3,	problematic.	
HYDROLO Wetland Hy	GY drology Indicator	s:								
Primary Indi	cators (minimum o	f one rec	uired; check all th	nat apply)			Secondary Inc	dicators (2 c	or more required)
Χ	Surface Water (A1)				Water staine	d Leaves (B9)	(Except MLRA	Wa	iter stained Le	eaves (B9)
Х	High Water Table (A2	2)			1, 2, 4A, and	d 4B)		(M	LRA1, 2, 4A,	and 4B)
X	Saturation (A3)				Salt Crust (B	311)		Dra	ainage Patterr	ns (B10)
	Water Marks (B1)				Aquatic Inve	rtebrates (B13))	Dry	/-Season Wat	er Table (C2)
	Sediment Deposits (E	32)			Hydrogen Su	ulfide Odor (C1)	Sat	uration Visible	e on Aerial Imagery (0
	Drift Deposits (B3)				Oxidized Rh	izospheres aloi	ng Living Roots (C3)	X Ge	omorphic Pos	ition (D2)
	Algal Mat or Crust (B	4)			Presence of	Reduced Iron	(C4)	Sha	allow Aquitard	I (D3)
	Iron Deposits (B5)				Recent Iron	Reduction in P	lowed Soils (C6)	Fac	c-Neutral Test	(D5)
	Surface Soil Cracks ((B6)			Stunted or S	tressed Plants	(D1) (LRR A)	Ra	sed Ant Mour	nds (D6) (LRR A)
	Inundation Visible on Sparsely Vegetated (Other (Expla	in in Remarks)		Fro	st-Heave Hur	mmocks (D7)
Field Obser							1			
Surface Water		X	No	Denth	ı (inches):	2				
Vater Table P		$\frac{\chi}{\chi}$	No	•	(inches):	0	. Wetland Hvd	rology Present	?	
Saturation Pre		X	No	•	(inches):	0	- Woulding Hyd	Yes	X	No
includes capillar	y fringe)									
Sample poi	orded Data (stream ga nt was re-examin getated concave	ed on A	oril 7, 2021. Surfa	-	-	-	le: nd Saturation wer	e absent; howe	ver, algal n	natting and
Α	ppendix N - South Sy	ystem					I	Exhibit 5	Fishill	

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Project/Site: S. Mola	lla Avenue	City/County:	Oregon	City/Clackamas	Sampling Date:	2/4/2	021
Applicant/Owner: Jessey Ce	•			State:	OR	Sampling Point:	2
Investigator(s):	AH/JT	Section, To	wnship, Range:		Section 21 T3S	_	
Landform (hillslope, terrace, etc.:)	Slope			ncave, convex, none):	Concave	Slope (%):	~1
Subregion (LRR):	LRR A	Lat:	45.2977	_		Datum:	WGS84
Soil Map Unit Name:		silty clay loam			ssification:	None	
Are climatic/hydrologic conditions o			Yes	X No	-	lain in Remarks)	
						,	
Are vegetation Soil		_ ′		Are "Normal Circumstance	. , ,	<u> </u>	
Are vegetation Soil	or Hydrology	naturally probler	natic? if needed	, explain any answers in Re	marks.)		
SUMMARY OF FINDINGS	- Attach site map	showing sam	pling point	locations, transects	, important feat	ures, etc.	
Hydrophytic Vegetation Present?	Yes X N	0					
Hydric Soil Present?	Yes N	o X	Is Sampled Ar			No X	
Vetland Hydrology Present?	Yes X N	0	a Wollan	_			
Remarks:							
omano.							
/EGETATION - Use scien	tific names of plan	nts.					
	absolute	Dominant	Indicator	Dominance Test wor	ksheet:		
	% cover	Species?	Status				
ree Stratum (plot size:)			Number of Dominant Spec			A \
1		<u> </u>		That are OBL, FACW, or F	-AC:	(/	۹)
2				Tatal Niverban of Dansin and			
3		·		Total Number of Dominan		1 (E	3)
		= Total Cover		Species Across All Strata:		('	رد
		- Total Cover					
apling/Shrub Stratum (plot size	e:)			Percent of Dominant Spec			
1				That are OBL, FACW, or	FAC:	<u>100%</u> (A	4/B)
2		·		Dunivalanaa Inday Wa			
3				Prevalence Index Wo			
* 5				Total % Cover of OBL Species	Multiply by x 1 =	<u>, </u>	
		= Total Cover		FACW species	x 2 =	0	
		10101 00101		FAC Species	x 3 =	0	
erb Stratum (plot size:	5)			FACU Species	x 4 =	0	
1 Alopecurus pratensis	95	X	FAC	UPL Species	x 5 =	0	
2				Column Totals	0 (A)	(E	3)
3							
4				Prevalence Index =E	B/A = #	DIV/0!	
5							
6		<u> </u>		Hydrophytic Vegetati			
7 8					I- Rapid Test for Hydi		
	95	= Total Cover			2- Dominance Test is 3-Prevalence Index is		
		- Total Covel		l	1-Morphological Adap		pporting
/oody Vine Stratum (plot size:)				data in Remarks or or		-
1			·		5- Wetland Non-Vasc	ular Plants ¹	
·				F	Problematic Hydrophy	rtic Vegetation¹ (Exp	olain)
		T		¹ Indicators of hydric soil a	nd wetland hydrology	must be present, u	nless
	0	= Total Cover					
	0	= Total Cover		disturbed or problematic.			
2 6 Bare Ground in Herb Stratum	0 5	= Total Cover		disturbed or problematic. Hydrophytic Vegetation	Yes X	No	

SOIL			PHS#	7152	_		Sampling Point: 2
Profile Descri	ption: (Describe to	the depth	needed to docume	nt the indicator or c	onfirm the abser	ce of indicators.)	
Depth	Matrix	<u> </u>	<u> </u>	Redox Features		•	
(Inches)	Color (moist)	%	Color (moist)	% Type ¹	Loc ²	Texture	Remarks
0-8	7.5YR 3/1	100				Sandy Loam	
8-12	7.5YR 4/3	100				Sandy Loam	
					_		
							· -
							-
				Covered or Coated Sa			² Location: PL=Pore Lining, M=Matrix.
-		licable to	all LRRs, unless	s otherwise noted	-)	Indic	ators for Problematic Hydric Soils ³ :
	Histosol (A1)			Sandy Red	lox (S5)		2 cm Muck (A10)
	Histic Epipedon (A2))		Stripped M	atrix (S6)		Red Parent Material (TF2)
	Black Histic (A3)			Loamy Mu	cky Mineral (F1) (e	except MLRA 1)	Very Shallow Dark Surface (TF12)
	Hydrogen Sulfide (A	4)		Loamy Gle	yed Matrix (F2)		Other (explain in Remarks)
!	Depleted Below Dar	k Surface (A	.11)	Depleted M	latrix (F3)		
-	Thick Dark Surface ((A12)		Redox Dar	k Surface (F6)		
	Sandy Mucky Minera	al (S1)		Depleted D	ark Surface (F7)		³ Indicators of hydrophytic vegetation and wetland
;	Sandy Gleyed Matrix	(S4)		Redox Dep	ressions (F8)		hydrology must be present, unless disturbed or problematic.
Restrictive I	Layer (if present	١٠					
	Layer (ii present	,.					
Type:							
Depth (inches	5):					Hydric Soil Pre	sent? Yes No X
Remarks:							
HYDROLO							
Wetland Hy	drology Indicato	rs:					
Primary Indic	cators (minimum o	of one requ	uired; check all th	at apply)			Secondary Indicators (2 or more required)
X	Surface Water (A1)				ned Leaves (B9) (I	Except MLRA	Water stained Leaves (B9)
X	High Water Table (A	2)		1, 2, 4A, aı	nd 4B)		(MLRA1, 2, 4A, and 4B)
X	Saturation (A3)			Salt Crust	(B11)		Drainage Patterns (B10)
	Water Marks (B1)			Aquatic Inv	rertebrates (B13)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Hydrogen S	Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)
	Drift Deposits (B3)			Oxidized R	hizospheres alon	g Living Roots (C3)	Geomorphic Position (D2)
	Algal Mat or Crust (E	34)		Presence of	of Reduced Iron (C	24)	Shallow Aquitard (D3)
	Iron Deposits (B5)			Recent Iron	n Reduction in Plo	wed Soils (C6)	Fac-Neutral Test (D5)
;	Surface Soil Cracks	(B6)		Stunted or	Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
	Inundation Visible or	n Aerial Ima	gery (B7)	Other (Exp	lain in Remarks)		Frost-Heave Hummocks (D7)
;	Sparsely Vegetated	Concave Su	ırface (B8)				
Field Obser	vations:						
Surface Water	Present? Yes	X	No	Depth (inches):	1		
Water Table P	resent? Yes	x	No	Depth (inches):	0	Wetland Hyd	drology Present?
Saturation Pres	sent? Yes	x	No	Depth (inches):	0		Yes X No
(includes capillar				, ,			
Describe Reco	orded Data (stream g	auge, moni	toring well, aerial ph	notos, previous inspec	tions), if available	:	
Remarks:							
Al	ppendix N - South S	system					Exhibit 5 Exhibits

7152

Project/Site: S. Molal	la Avenue	City/County:	Oregon	City/Clackamas	Sampling Date:	2/4/2021	Í
Applicant/Owner: Jessey Ce	reghino		,	State:	OR	Sampling Point:	3
nvestigator(s):	AH/JT	Section, To	wnship, Range:		Section 21 T3S	R2E	
andform (hillslope, terrace, etc.:)	Slope		Local relief (cor	ncave, convex, none):	Concave	Slope (%):	~1
Subregion (LRR):	LRR A	Lat:	45.2977	22° Long:	-122.559057°	Datum: W (GS84
Soil Map Unit Name:	Cottrell	= silty clay loam		NWI Clas	ssification:	None	
are climatic/hydrologic conditions o	n the site typical for this ti	me of year?	Yes	X No	(if no, expl	ain in Remarks)	
re vegetation Soil	or Hydrology	significantly dist	urbed?	Are "Normal Circumstance	es" present? (Y/N)	Υ	
re vegetation Soil		_		, explain any answers in Re	marks.)		
	<u> </u>	_					
UMMARY OF FINDINGS	 Attach site map 	showing san	npling point	locations, transects	, important featı	ıres, etc.	
ydrophytic Vegetation Present?	Yes X No		Is Sampled Ar	ea within			
ydric Soil Present?	Yes X No		a Wetlan		X	No	
etland Hydrology Present?	Yes X No						
emarks:							
EGETATION - Use scien				<u> </u>			
	absolute % cover	Dominant Species?	Indicator Status	Dominance Test work	ksheet:		
ee Stratum_ (plot size:)	1		Number of Dominant Spec	cies		
				That are OBL, FACW, or F		1 (A)	
				Total Number of Dominan	t		
				Species Across All Strata:		1 (B)	
	0	= Total Cover					
oling/Shrub Stratum (plot size	::)			Percent of Dominant Spec	cies		
				That are OBL, FACW, or	FAC:	100% (A/B))
				Prevalence Index Wo	rksheet:		
				Total % Cover of	Multiply by	<u>:</u>	
				OBL Species	x 1 =	0	
	0	= Total Cover		FACW species FAC Species	x 2 = x 3 =	0	
rb Stratum (plot size:	5)			FACU Species	x 4 =	0	
Alopecurus pratensis	60	X	FAC	UPL Species	x 5 =	0	
				Column Totals	0 (A)	0 (B)	
					<u> </u>		
				Prevalence Index =	B/A = #	DIV/0!	
				Hydrophytic Vegetati	on Indicators:		
					I- Rapid Test for Hydr		
					2- Dominance Test is a 3-Prevalence Index is		
	60	= Total Cover				≤ 3.0 tations¹ (provide suppor	rtina
oody Vine Stratum (plot size:)				data in Remarks or on		Ü
					5- Wetland Non-Vascu	ılar Plants ¹	
				F	Problematic Hydrophy	tic Vegetation ¹ (Explain)	ı)
	0	= Total Cover		¹ Indicators of hydric soil a	nd wetland hydrology	must be present, unless	s
				disturbed or problematic.			
Bare Ground in Herb Stratum	40			Hydrophytic Vegetation	Yes X	No	
				Present?	· · · · · · · · · · · · · · · · · · ·	_	

SOIL			PHS #	71	52			Sampling Point: 3	_
Profile Descr	iption: (Describe to	the depth	needed to docume	ent the ind	icator or co	nfirm the abser	nce of indicators.)		
Depth	Matrix	•			x Features		,		
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	_
0-4	7.5YR 3/2	100					Sandy Loam		_
4-8	7.5YR 3/2	80	10YR 2/1	20			Sandy Loam		_
8-13	2.5Y 4/1	10	7.5YR 4/3	80	С	M	Sandy Loam	Medium	
			5YR 3/4	5	С	M		Medium	_
			10YR 2/1	5					_
									_
									_
									_
¹ Type: C=Con	centration, D=Deple	tion RM=R	educed Matrix CS=	Covered o	r Coated Sar	nd Grains		² Location: PL=Pore Lining, M=Matrix.	_
	Indicators: (App						Indic	ators for Problematic Hydric Soils ³ :	
-	Histosol (A1)	iicabie to	an Errits, umes		Sandy Redo		maic	2 cm Muck (A10)	
	` ,	`			-				
	Histic Epipedon (A2))			Stripped Ma			Red Parent Material (TF2)	
	Black Histic (A3)				-	ky Mineral (F1) (except MLRA 1)	Very Shallow Dark Surface (TF12)	
	Hydrogen Sulfide (A	•				ed Matrix (F2)		Other (explain in Remarks)	
	Depleted Below Dar	•	A11)		Depleted Ma				
	Thick Dark Surface					Surface (F6)		³ Indicators of hydrophytic vegetation and wetland	
	Sandy Mucky Miner	al (S1)			Depleted Da	ark Surface (F7)		hydrology must be present, unless disturbed or	
	Sandy Gleyed Matri	x (S4)			Redox Depre	essions (F8)		problematic.	
Restrictive	Layer (if present	:):							
Type:									
Depth (inche	s):				_		Hydric Soil Pres	sent? Yes X No	
Remarks:							1 -		
HYDROLO Wetland Hy	OGY drology Indicato	rs:							
_			usirad: abaak all tl	hat annly)				Sacandary Indicators (2 or more required)	
	cators (minimum	or one req	ulled, check all ti			od Loovos (BO) (Except MLDA	Secondary Indicators (2 or more required)	-
x	Surface Water (A1) High Water Table (A	(2)			1, 2, 4A, and	ed Leaves (B9) (d 4B)	Except WENA	Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)	
	Saturation (A3)	(2)				-		Drainage Patterns (B10)	
	Water Marks (B1)				Salt Crust (E	ertebrates (B13)		Dry-Season Water Table (C2)	
	` ,	(B2)			•	ulfide Odor (C1)			, (CO)
	Sediment Deposits (Drift Deposits (B3)	(DZ)			, ,	, ,	g Living Roots (C3)	Saturation Visible on Aerial Imagery Geomorphic Position (D2)	(C9)
x	Algal Mat or Crust (F	34)				Reduced Iron (Shallow Aquitard (D3)	
	Iron Deposits (B5)	J4)				Reduction in Pla	•	Fac-Neutral Test (D5)	
	Surface Soil Cracks	(B6)				Stressed Plants (` '	Raised Ant Mounds (D6) (LRR A)	
	Inundation Visible or		ageny (B7)			ain in Remarks)	,	Frost-Heave Hummocks (D7)	
-	Sparsely Vegetated				Other (Expir	an in remarks)		Trost-fleave fluminosis (B1)	
							1		
Field Obser									
Surface Water	Present? Yes	<u> </u>	No	Depth	(inches):	4			
Water Table F	Present? Yes	<u> </u>	No	Depth	(inches):	0	Wetland Hyd	Irology Present?	
Saturation Pre		X	No	Depth	(inches):	0		Yes X No	_
Describe Reco	orded Data (stream o	gauge, mon	itoring well, aerial p	hotos, prev	ious inspecti	ions), if available	e:		
Remarks:									
^	ppendix N - South S	System						Cybibit 5 Falsonia	
		, , , , , , , , , , , , , , , , , , , ,						Exhibit 5 Exhibits	

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Project/Site:	S. Molalla	Avenue	City/County:	Oregon	City/Clackamas	Sampling Date:	2/4/2	2021
Applicant/Owner:	Jessey Cere	ghino			State:		Sampling Point:	4
Investigator(s):		H/JT	Section. To	wnship, Range:		Section 21 T3S R		
Landform (hillslope, te		Slop		-	ncave, convex, none):	Concave	Slope (%):	~1
Subregion (LRR):	_	LRR A	Lat:	45.2978			Datum:	WGS84
Soil Map Unit Name:			I silty clay loam	40.207		ssification:	None	110004
Are climatic/hydrologic	c conditions on th			Yes	X No			
, ,		• •	•				in in Remarks)	
Are vegetation		or Hydrology	significantly dist		Are "Normal Circumstanc	. ,	<u> </u>	
Are vegetation	Soil	or Hydrology	naturally probler	natic? If needed	I, explain any answers in Re	marks.)		
SUMMARY OF F	INDINGS -	Attach site ma	p showing sam	npling point	locations, transects	important featu	res, etc.	
Hydrophytic Vegetatio			No			-		
Hydric Soil Present?			No X	Is Sampled Ar a Wetlar	rea within		lo X	
, Wetland Hydrology Pr	resent? Y		 No	a vvetiai	_			
Remarks:								
/EGETATION	lleo eciontif	ic names of pla	unte					
VEGETATION -	ose scientif	absolute		Indicator	Dominance Test wor	ksheet:		
		% cover		Status	Dominance rest wor	Correct.		
Tree Stratum (plot	size:)			Number of Dominant Spec	cies		
1					That are OBL, FACW, or f	AC:	1 (A)
2								
3					Total Number of Dominan	t		
4					Species Across All Strata:		1 (В)
		0	= Total Cover					
Sapling/Shrub Stratun	n (plot size:)			Percent of Dominant Spec	ies		
1			_		That are OBL, FACW, or	FAC: <u>1</u>	00% (A/B)
2								
3					Prevalence Index Wo	rksheet:		
4					Total % Cover of	Multiply by:	_	
5					OBL Species	x 1 =	0	
		0	= Total Cover		FACW species	x 2 =	0	
Herb Stratum (plot	size: 5)			FAC Species FACU Species	x 3 = x 4 =	0	
1 Agrostis sp	3ize. <u> </u>	′ 	X	(FAC)	UPL Species	x 4 -	0	
2 Alopecurus pr	atensis			FAC	Column Totals	0 (A)		В)
3	41011010				_	(/ ()		<i>D</i>)
4					Prevalence Index =E	3/A = #[DIV/0!	
5						_		
6					Hydrophytic Vegetati	on Indicators:		
7						I- Rapid Test for Hydro	phytic Vegetation	ı
8					X	2- Dominance Test is >	50%	
		95	= Total Cover			3-Prevalence Index is ≤		
						I-Morphological Adapta		pporting
Voody Vine Stratum	(plot size:)				data in Remarks or on a		
1						5- Wetland Non-Vascul		-1-:>
2						Problematic Hydrophyti		
		0	= Total Cover		¹ Indicators of hydric soil and disturbed or problematic.	na wetland hydrology n	nust be present, u	iniess
					· ·			
					Hydrophytic			
% Bare Ground in Hei	rb Stratum	5			Hydrophytic Vegetation Present?	Yes X	No_	

SOIL			PHS#	7152	_		Sampling Point:	4
Profile Descri	ption: (Describe to	the depth i	needed to docume	nt the indicator or o	confirm the absen	ce of indicators.)		
Depth	Matrix	•		Redox Features		,		
(Inches)	Color (moist)	%	Color (moist)	% Type ¹	Loc ²	Texture	Remarks	
0-7	7.5YR 3/2	100				Sandy Loam		
7-12	7.5YR 3/1	100				Sandy Loam		
12-13	7.5YR 3/2	100				Sandy Loam		
¹ Type: C=Cen	contration D-Donlor	tion DM-Da	duced Matrix, CS-	Covered or Coated S	Sand Grains		² Location: PL=Pore Lining, M=Matrix	,
				s otherwise note		Indic	cators for Problematic Hydric So	
-	Histosol (A1)	ilicable to	ali LKKS, uilles:			maic		iis .
	, ,	`		Sandy Re			2 cm Muck (A10)	F0)
	Histic Epipedon (A2))		Stripped N			Red Parent Material (TF	•
	Black Histic (A3)				ucky Mineral (F1) (e	except MLRA 1)	Very Shallow Dark Surf	
	Hydrogen Sulfide (A	•			eyed Matrix (F2)		Other (explain in Rema	rks)
	Depleted Below Dar	,	.11)		Matrix (F3)			
	Thick Dark Surface				rk Surface (F6)		³ Indicators of hydrophytic vegetation	and wetland
	Sandy Mucky Miner	al (S1)			Dark Surface (F7)		hydrology must be present, unless d	
	Sandy Gleyed Matri	x (S4)		Redox De	pressions (F8)		problematic.	
Restrictive	Layer (if present	:):						
Type:								
Depth (inches	s):					Hydric Soil Pre	sent? Yes No	X
Remarks:								
HYDROLO								
Wetland Hy	drology Indicato	rs:						
Primary India	cators (minimum	of one requ	ired; check all th	at apply)			Secondary Indicators (2 or more	e required)
	Surface Water (A1)			Water stai	ined Leaves (B9) (I	Except MLRA	Water stained Leaves (B9)
Х	High Water Table (A	A2)		1, 2, 4A, a	and 4B)		(MLRA1, 2, 4A, and 4	В)
X	Saturation (A3)			Salt Crust	(B11)		Drainage Patterns (B10))
	Water Marks (B1)			Aquatic In	vertebrates (B13)		Dry-Season Water Tabl	le (C2)
	Sediment Deposits ((B2)		Hydrogen	Sulfide Odor (C1)		Saturation Visible on Ae	erial Imagery (C9)
	Drift Deposits (B3)			Oxidized F	Rhizospheres alon	g Living Roots (C3)	Geomorphic Position (E	02)
	Algal Mat or Crust (E	B4)		Presence	of Reduced Iron (C	24)	Shallow Aquitard (D3)	
	Iron Deposits (B5)				on Reduction in Plo	,	Fac-Neutral Test (D5)	
	Surface Soil Cracks	(B6)		Stunted or	r Stressed Plants (I	D1) (LRR A)	Raised Ant Mounds (D6	3) (LRR A)
	Inundation Visible o	n Aerial Ima	gery (B7)	Other (Ex	plain in Remarks)		Frost-Heave Hummock	s (D7)
	Sparsely Vegetated	Concave Su	ırface (B8)					
Field Obser	vations:							
Surface Water	Present? Yes		No X	Depth (inches):				
Water Table P	resent? Yes	X	No	Depth (inches):	6	Wetland Hyd	drology Present?	
Saturation Pre	sent? Yes	X		Depth (inches):	Surface		Yes X No	
(includes capillar	y fringe)						 -	
Describe Reco	orded Data (stream g	gauge, monit	oring well, aerial ph	otos, previous inspe	ctions), if available	:		
Remarks:								
								_
Α	ppendix N - South S	System					Exhibit 5	3

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Project/Site: S. Mola	lla Avenue	City/County:	Oregon	City/Clackamas	Sampling Date:	4/7/2	2021
Applicant/Owner: Jessey Ce	•	, ,		State:	OR	Sampling Point:	5
Investigator(s):	MS/JT	Section. To	wnship, Range:		Section 21 T3S		
Landform (hillslope, terrace, etc.:)	Slop			ncave, convex, none):	Slope	Slope (%):	~1
Subregion (LRR):	LRR A	Lat:	45.2946	-		' \ / _ Datum:	WGS84
Soil Map Unit Name:		Il silty clay loam			ssification:	None	
Are climatic/hydrologic conditions o			Yes	X No		olain in Remarks)	
		-					
Are vegetation Soil		significantly dist		Are "Normal Circumstand	, , ,	<u> </u>	
re vegetation Soil	or Hydrology	naturally probler	nauc? ii needed	l, explain any answers in Re	emarks.)		
SUMMARY OF FINDINGS	- Attach site ma	ap showing sam	npling point	locations, transects	, important feat	tures, etc.	
Hydrophytic Vegetation Present?	Yes X	No					
Hydric Soil Present?	Yes	No X	Is Sampled Ar a Wetlar			No X	
Vetland Hydrology Present?	Yes	No X	a wettar				
Remarks:							
cmarks.							
/EGETATION - Use scien	tific names of pla	ants.					
200 00101	absolute		Indicator	Dominance Test wor	ksheet:		
	% cover		Status				
ree Stratum (plot size:)			Number of Dominant Spe			
1				That are OBL, FACW, or	FAC:	2 ((A)
2							
				Total Number of Dominar			·= \
4				Species Across All Strata	<u> </u>	3 ((B)
	0	= Total Cover					
apling/Shrub Stratum (plot size	e: <u>15</u>)			Percent of Dominant Spe	cies		
Rubus armeniacus	60	X	FAC	That are OBL, FACW, or	FAC:	67%	(A/B)
Rosa sp	15		(FAC)				
Rubus laciniatus	15		FACU	Prevalence Index Wo	orksheet:		
4				Total % Cover of	Multiply b		
5				OBL Species	x 1 =		
	90	= Total Cover		FACW species FAC Species	x 2 = x 3 =		
lerb Stratum (plot size:	5)			FACU Species	x 3 =		
1 Poa sp	75	x	(FAC)	UPL Species	x 5 =		
Leucanthemum vulgare	35	x	FACU	Column Totals	0 (A)		(B)
Cirsium arvense	2		FAC		<u> </u>	(. /
4				Prevalence Index =	B/A =	#DIV/0!	
5							
3				Hydrophytic Vegetat	ion Indicators:		
7					1- Rapid Test for Hyd	Irophytic Vegetatior	1
8				Х	2- Dominance Test is	>50%	
	112	= Total Cover			3-Prevalence Index is		
					4-Morphological Ada		
/oody Vine Stratum (plot size:)				data in Remarks or o	• •)
1					5- Wetland Non-Vasc		
2				<u> </u>	Problematic Hydroph		
	0	= Total Cover		¹ Indicators of hydric soil a disturbed or problematic.	na wetiand hydrology	/ must be present, t	uniess
				alotal boa of problematic.			
				Hydrophytic			
6 Bare Ground in Herb Stratum				Hydrophytic Vegetation Present?	Yes X	No _	

Profile Description: (Describe to the depth needed to document the indicato Depth Matrix Redox Fea (Inches) Color (moist) % Color (moist) % T		Sampling Point: 5
	r or confirm the absence of indicators.)	
(Inches) Color (moist) % Color (moist) % T		
	ype ¹ Loc ² Texture	Remarks
0-11 5YR 3/3 100	Silt Loam	
11-16+ 5YR 4/4 100	Silt Loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coa	ted Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise n	oted.) Indica	ators for Problematic Hydric Soils ³ :
Histosol (A1) Sand	y Redox (S5)	2 cm Muck (A10)
Histic Epipedon (A2) Stripp	ped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3)	ny Mucky Mineral (F1)(except MLRA 1)	Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)	ny Gleyed Matrix (F2)	Other (explain in Remarks)
Depleted Below Dark Surface (A11)	eted Matrix (F3)	
Thick Dark Surface (A12)	x Dark Surface (F6)	
Sandy Mucky Mineral (S1) Deple	eted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or
Sandy Gleyed Matrix (S4)	x Depressions (F8)	problematic.
Restrictive Layer (if present):		
Type:		
Depth (inches):	Hydric Soil Pres	ent? Yes No X
Remarks:	1,	
HYDROLOGY Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
	r stained Leaves (B9) (Except MLRA 4A, and 4B)	Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
Tilgit Water Table (A2)	•	• • • • • •
	Crust (B11) tic Invertebrates (B13)	Drainage Patterns (B10) Dry-Season Water Table (C2)
	ogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
	zed Rhizospheres along Living Roots (C3)	Geomorphic Position (D2)
	ence of Reduced Iron (C4)	Shallow Aquitard (D3)
Algal Mat or Crust (B4)	nt Iron Reduction in Plowed Soils (C6)	Fac-Neutral Test (D5)
Iron Deposits (B5)	red or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
Iron Deposits (B5) Rece Surface Soil Cracks (B6) Stunt	, ,	· · ·
Iron Deposits (B5) Rece Surface Soil Cracks (B6) Stunt	red or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
Iron Deposits (B5) Rece Surface Soil Cracks (B6) Stunt Inundation Visible on Aerial Imagery (B7) Other	red or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
Iron Deposits (B5) Rece Surface Soil Cracks (B6) Stunt Inundation Visible on Aerial Imagery (B7) Other Sparsely Vegetated Concave Surface (B8)	red or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
Iron Deposits (B5) Rece Surface Soil Cracks (B6) Stunt Inundation Visible on Aerial Imagery (B7) Other Sparsely Vegetated Concave Surface (B8) Field Observations:	r (Explain in Remarks)	Raised Ant Mounds (D6) (LRR A)
Iron Deposits (B5)	ees): >16 Wetland Hyde	Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Iron Deposits (B5)	eed or Stressed Plants (D1) (LRR A) r (Explain in Remarks) ees):	Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) rology Present?
Iron Deposits (B5)	eed or Stressed Plants (D1) (LRR A) r (Explain in Remarks) ees):	Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) rology Present?
Iron Deposits (B5)	eed or Stressed Plants (D1) (LRR A) r (Explain in Remarks) ees):	Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) rology Present?
Iron Deposits (B5) Rece Surface Soil Cracks (B6) Stunt Inundation Visible on Aerial Imagery (B7) Other Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No X Depth (inche Water Table Present? Yes No X Depth (inche Saturation Present? Yes No X Depth (inche (includes capillary fringe)) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous in the surface of the s	eed or Stressed Plants (D1) (LRR A) r (Explain in Remarks) ees):	Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) rology Present?

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

olalla Avenue		City/County:	Oregon	City/Clackamas	Sampling Date:	4/7/2	2021
Cereghino				State:	OR	Sampling Point:	6
MS/JT		Section, To	wnship, Range:		Section 21 T3S F	2E	
.:)	Slope	= ′		ncave, convex, none);			~1
·		l at·	•	·			WGS84
EIIIA	Cottrolle	_	40.2004	<u> </u>			110004
o on the cite tur			Voo				
		-					
					, ,	<u> </u>	
or Hydr	rology	naturally probler	natic? If needed	, explain any answers in Re	marks.)		
S – Attach	site map	showing sam	pling point	locations, transects,	important featu	res, etc.	
? Yes	X No						
Yes	X No				X	lo	
Yes			a Wellan	_			
entific name	es of plant	S.					
	absolute	Dominant	Indicator	Dominance Test work	sheet:		
	% cover	Species?	Status				
)						•	۸.
-				That are OBL, FACW, or F	-AC:	3 (A)
				Total Number of Deminent			
						3 (В)
		- Total Cover		Species Across Air Strata.		(ы)
-		- Total Cover					
size: 15)	.,					. (5)
	10	X	FAC	That are OBL, FACW, or I	FAC: <u>1</u>	00% (A/B)
				Dunivalanaa Inday Wa	ulsa baasts		
	10	= Total Cover		· -			
-		- Total Gover		FAC Species	x 3 =	0	
5)				FACU Species	x 4 =	0	
	80	X	(FAC)	UPL Species	x 5 =	0	
	20	X	FAC	Column Totals	0 (A)	0 (B)
				Prevalence Index =B	3/A = #[DIV/0!	
					•		
	400						
-	100	= Total Cover					pporting
e:)						11 3
				F	Problematic Hydrophyti	c Vegetation¹ (Ex	plain)
	0	= Total Cover		•	nd wetland hydrology r	nust be present, u	ınless
-				disturbed or problematic.			
				Hydrophytic			
. 0				Vegetation	Yes X	No	
	Cereghino MS/JT ::) LRR A is on the site type or Hydron	MS/JT ::) Slope LRR A Cottrell s is on the site typical for this tin or Hydrology or Hydrology ? Yes	Cereghino MS/JT Section, To Slope LRR A Lat: Cottrell silty clay loam as on the site typical for this time of year? or Hydrology significantly districted in a problem of the site site map showing same of the	MS/JT Section, Township, Range: Slope	State: MS/JT Section, Township, Range:	State Coreghino State Coreghino Section Township, Range Section 21 T3S R	Section Section Township Range Section Section Township Range Range

SOIL			PHS#	71	52			Sampling Point:	6
Profile Descr	iption: (Describe to	the depth	needed to docume	ent the ind	icator or co	nfirm the abse	nce of indicators.)		
Depth	Matrix			Redo	x Features				
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-2	7.5YR 3/3	100					Silt Loam		
2-9	7.5YR 3/3	90	10YR 3/1	10	C	M	Silt Loam	Manganese	
9-12	7.5YR 4/4	97	10YR 3/1	3	C	M	Silt Loam	Manganese	
¹ Type: C=Con	centration, D=Deplet	tion, RM=Re	educed Matrix, CS=	Covered or	r Coated Sai	nd Grains.		² Location: PL=Pore Lining, M=Matri	X.
Hydric Soil	Indicators: (App	licable to	all LRRs, unles	s otherw	ise noted.)	Indic	ators for Problematic Hydric S	oils³:
	Histosol (A1)				Sandy Redo	ox (S5)		2 cm Muck (A10)	
	Histic Epipedon (A2))			Stripped Ma	trix (S6)		X Red Parent Material (1	F2)
	Black Histic (A3)				Loamy Mucl	ky Mineral (F1)	except MLRA 1)	Very Shallow Dark Su	face (TF12)
	Hydrogen Sulfide (A	4)			Loamy Gley	ed Matrix (F2)		Other (explain in Rema	arks)
	Depleted Below Dar	k Surface (A	A11)		Depleted Ma	atrix (F3)			
	Thick Dark Surface	(A12)			Redox Dark	Surface (F6)		3	
	Sandy Mucky Minera	al (S1)			Depleted Da	ark Surface (F7)		³ Indicators of hydrophytic vegetation hydrology must be present, unless	
	Sandy Gleyed Matrix	x (S4)			Redox Depr	essions (F8)		problematic.	
Restrictive	Layer (if present):							
Type:									
Depth (inches	s):				_		Hydric Soil Pre	sent? Yes X No	
Remarks:	<u> </u>						ı		
LIVEROL O	.0.4								
HYDROLO	drology Indicato	ro:							
	•								
•	cators (minimum o	of one req	uired; check all th			(50)		Secondary Indicators (2 or mo	
	Surface Water (A1)	۵)			Water staine 1, 2, 4A, and	ed Leaves (B9) (d 4R)	Except MLRA	Water stained Leaves (MLRA1, 2, 4A, and 4	
	High Water Table (A	.2)						, , , , ,	•
	Saturation (A3)				Salt Crust (E	,		Drainage Patterns (B1	
	Water Marks (B1)	(DO)			-	ertebrates (B13) ulfide Odor (C1)		Dry-Season Water Tal	` ,
	Sediment Deposits (Drift Deposits (B3)	D2)			, ,	, ,	ng Living Roots (C3)	Saturation Visible on A Geomorphic Position (
	Algal Mat or Crust (E	34)				Reduced Iron (Shallow Aquitard (D3)	<i>D2)</i>
	Iron Deposits (B5)	,				,	owed Soils (C6)	Fac-Neutral Test (D5)	
	Surface Soil Cracks	(B6)				Stressed Plants	` '	Raised Ant Mounds (E	06) (LRR A)
	Inundation Visible or	` '	gery (B7)		Other (Expla	ain in Remarks)		Frost-Heave Hummoc	ks (D7)
	Sparsely Vegetated					,			,
Field Obser	vations:								
Surface Water			No X	Depth	(inches):				
Water Table P		x	No	•	(inches):	0	Wetland Hyd	drology Present?	
Saturation Pre		x		•	(inches):	0		Yes X No	
(includes capillar					` ′ ′				
Describe Reco	orded Data (stream g	jauge, moni	toring well, aerial pl	notos, prev	ious inspecti	ons), if available	e:		
Remarks:									
Hydrology i	nformation is fro	m Februa	ary 4, 2021.						
А	ppendix N - South S	System						Exhibit 5	2
									4

7152

S. Molalla Aven	nue	City/County:	Oregon	City/Clackamas	Sampling Date:	4/7/2	2021
Jessey Cereghine				State:	OR	Sampling Point:	7
MS/JT		Section, To	wnship, Range:				
rrace, etc.:)	Slope	_		ncave, convex, none):	None		~1
		Lat:	•	· -			WGS84
		_					
conditions on the site			Yes				
		-					
					. , ,	<u> </u>	
		- natarany probion	nano. Il ricodou	, explain any anomore in the	marko.)		
INDINGS - Atta	ch site map	showing sam	pling point	locations, transects	important featu	res, etc.	
n Present? Yes	X No		le Sampled Ar	oa within			
Yes	No	X		rd? Yes_		lo X	
esent? Yes	No	X					
			l				
Jse scientific na	ames of plant			•			
	absolute % cover		Indicator	Dominance Test work	ksheet:		
size:)	Opecies:	Otatus	Number of Dominant Spec	cies		
	•′			·		2 ((A)
	· ———						,
				Total Number of Dominan	t		
				Species Across All Strata:		2 (B)
	0	= Total Cover					
(plot size:)			Percent of Dominant Spec	ies		
	 ′			That are OBL, FACW, or	FAC: 1	00%	A/B)
				Prevalence Index Wo	rksheet:		
				Total % Cover of	Multiply by:		
				OBL Species	x 1 =	0	
	0	= Total Cover		FACW species	x 2 =	0	
size: 5)			_			
	_′ 80	X	(FAC)	- · · · -			
arundinaceus	25	X	FAC	Column Totals			В)
				_	. ,		•
				Prevalence Index =E	3/A = #[DIV/0!	
					·		
				Hydrophytic Vegetati	on Indicators:		
					I- Rapid Test for Hydro	phytic Vegetation	1
	105	= Total Cover		l			upporting
(plot size:)						
(1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	— ′						
							plain)
	0	= Total Cover					
				disturbed or problematic.			
				Hydrophytic			
Stratum				Vocatation	Voc V	N/a	
b Stratum				Vegetation Present?	Yes X	No_	
	MS/JT rrace, etc.:) LRR conditions on the site Soil or H Soil or H Soil Yes Yes Yes esent? Yes Jse scientific na	MS/JT Trace, etc.:) Slope LRR A Cottrell s conditions on the site typical for this tine Soil or Hydrology Soil or Hydrology INDINGS - Attach site map and the second site of plant A Present? Yes X No Yes No Yes No Jse scientific names of plant absolute % cover ize:) (plot size:) absolute % cover 105 105 (plot size:)	Section Trace, etc.:) Slope LRR A	Section	State: MS/JT Section, Township, Range:		Section State Section State Section Section Section Section Section Section State Section Section State Section Section State Section State Section State Section State Section State Section State Section Sect

SOIL			PHS#	7152	_		Sampling Point:	7
Profile Descri	ption: (Describe to	the depth i	needed to docume	nt the indicator or c	onfirm the absen	ce of indicators.)		
Depth	 Matrix	<u> </u>		Redox Features		,		
(Inches)	Color (moist)	%	Color (moist)	% Type ¹	Loc ²	Texture	Remarks	
0-11	7.5YR 3/4	100				Silt Loam		
11-16	2.5YR 4/4	100				Silt Loam		
								
						_		
					 -		•	
1- 00							2	
				Covered or Coated Sa		111	² Location: PL=Pore Lining, M=Matrix	
-		licable to	ali LRRS, uniess	otherwise noted		Indic	ators for Problematic Hydric So	NIS":
	Histosol (A1)			Sandy Red	, ,		2 cm Muck (A10)	
	Histic Epipedon (A2))		Stripped M			Red Parent Material (T	•
	Black Histic (A3)			Loamy Muc	cky Mineral (F1) (e	xcept MLRA 1)	Very Shallow Dark Sur	face (TF12)
	Hydrogen Sulfide (A	4)		Loamy Gle	yed Matrix (F2)		Other (explain in Rema	ırks)
	Depleted Below Dar	k Surface (A	.11)	Depleted M	Matrix (F3)			
	Thick Dark Surface ((A12)		Redox Dar	k Surface (F6)		31 2 4 51 1 2 2 4 2	
	Sandy Mucky Minera	al (S1)		Depleted D	ark Surface (F7)		³ Indicators of hydrophytic vegetation hydrology must be present, unless of	
	Sandy Gleyed Matrix	(S4)		Redox Dep	ressions (F8)		problematic.	
Restrictive I	Layer (if present):						
Type:								
Depth (inches	·):					Hydric Soil Pres	sent? Yes No	X
Remarks:	<u> </u>					,		
	erved inundated	last winte	er.					
HYDROLO	GY							
Wetland Hyd	drology Indicato	rs:						
Primary Indic	cators (minimum o	of one requ	ired; check all th	at apply)			Secondary Indicators (2 or mor	e required)
	Surface Water (A1)	•			ned Leaves (B9) (E	Except MLRA	Water stained Leaves (· · · · · · · · · · · · · · · · · · ·
	High Water Table (A	2)		1, 2, 4A, aı	nd 4B)		(MLRA1, 2, 4A, and 4	
	Saturation (A3)			Salt Crust ((B11)		Drainage Patterns (B10	0)
	Water Marks (B1)			Aquatic Inv	vertebrates (B13)		Dry-Season Water Tab	ole (C2)
	Sediment Deposits (B2)		Hydrogen S	Sulfide Odor (C1)		Saturation Visible on A	erial Imagery (C9)
	Drift Deposits (B3)			Oxidized R	hizospheres along	g Living Roots (C3)	Geomorphic Position (I	D2)
	Algal Mat or Crust (E	34)		Presence of	of Reduced Iron (C	C4)	Shallow Aquitard (D3)	
	ron Deposits (B5)			Recent Iror	n Reduction in Plo	wed Soils (C6)	Fac-Neutral Test (D5)	
	Surface Soil Cracks	(B6)		Stunted or	Stressed Plants ([D1) (LRR A)	Raised Ant Mounds (D	6) (LRR A)
-	nundation Visible or	n Aerial Imag	gery (B7)	Other (Exp	lain in Remarks)		Frost-Heave Hummock	(s (D7)
	Sparsely Vegetated	Concave Su	ırface (B8)					
Field Observ	vations:							
Surface Water			No X	Donth (inches):				
				Depth (inches):	>16	Wetland Hyd	drology Present?	
Water Table P				Depth (inches):		wettand nyd	•	v
Saturation Pres (includes capillary			No <u>X</u>	Depth (inches):	>16		Yes No_	<u> </u>
Describe Reco	rded Data (stream o	lauge monit	oring well aerial ph	otos, previous inspec	tions), if available	:		
20001.201.000		augo,o	g, aca. p	iotoo, providuo illopoo	,,	•		
Remarks:								
A	ppendix N - South S	system					Exhibit 5 Exhibit 5	B

7152

Project/Site: S. Mol	alla Avenue	City/County:	Oregon	City/Clackamas	Sampling Date:	4/7/2	2021
Applicant/Owner: Jessey C				State:	OR	Sampling Point:	8
nvestigator(s):	JT	Section To	wnship, Range:		Section 21 T3S		-
Landform (hillslope, terrace, etc.:)				ncave, convex, none):	Slope	Slope (%):	3
Subregion (LRR):	LRR A	Lat:	45.2935	-		Datum:	WGS84
		ell silty clay loam	40.2000			None	110004
Soil Map Unit Name:			Yes		ssification:		
Are climatic/hydrologic conditions						olain in Remarks)	
are vegetation Soil		significantly dist		Are "Normal Circumstand	. , ,	<u> </u>	
re vegetation Soil	or Hydrology	naturally probler	natic? If needed	, explain any answers in Re	emarks.)		
SUMMARY OF FINDING	S – Attach site m	ap showing sam	pling point	locations, transects	, important feat	tures, etc.	
Hydrophytic Vegetation Present?	Yes X	No					
lydric Soil Present?	Yes	No X	Is Sampled Ar			No X	
Vetland Hydrology Present?	Yes	No X	a would				
lemarks:		-					
Sindino.							
/EGETATION - Use scie	ntific names of pl	ants.					
	absolut		Indicator	Dominance Test wor	ksheet:		
'man Ohmahama ()	% cove	r Species?	Status				
ree Stratum (plot size:)			Number of Dominant Spe			
1				That are OBL, FACW, or	FAC:	((A)
		<u> </u>					
				Total Number of Dominar			
				Species Across All Strata		((B)
	0	= Total Cover					
apling/Shrub Stratum (plot si	ze:)			Percent of Dominant Spe	cies		
1		<u> </u>		That are OBL, FACW, or	FAC:	100% (A/B)
2		<u> </u>					
3		<u> </u>		Prevalence Index Wo	orksheet:		
1		<u> </u>		Total % Cover of	Multiply b	oy:	
5		<u> </u>		OBL Species	x 1 =	. 0	
	0	= Total Cover		FACW species	x 2 =	. 0	
				FAC Species	x 3 =	. 0	
erb Stratum (plot size:	5)			FACU Species	x 4 =	. 0	
Agrostis capillaris	100	X	FAC	UPL Species	x 5 =		
Leucanthemum vulgare	10		FACU	Column Totals	0 (A)	 (B)
Cirsium arvense	1		FAC				
1				Prevalence Index =	B/A =	#DIV/0!	
j							
		_		Hydrophytic Vegetat			
⁷		_		-	1- Rapid Test for Hyd	· · ·	1
					2- Dominance Test is		
	111	= Total Cover			3-Prevalence Index i 4-Morphological Ada		innorting
oody Vine Stratum (plot size:	1				4-Morphological Ada data in Remarks or o		
oody vine Stratum (plot size.					5- Wetland Non-Vaso	. ,	
		_			Problematic Hydroph		nlain)
2		= Total C		¹ Indicators of hydric soil a			
	0	= Total Cover		disturbed or problematic.	na wetiana nyarologi	y musi be present, t	uriless
				1			
				Hydrophytic			
6 Bare Ground in Herb Stratum	0			Hydrophytic Vegetation Present?	Yes X	No_	

SOIL			PHS#	7152			Sampling Point: 8
Profile Descri	ption: (Describe to	the depth n	eeded to docume	nt the indicator or co	nfirm the absen	ce of indicators.)	
Depth	Matrix			Redox Features			
(Inches)	Color (moist)	%	Color (moist)	% Type ¹	Loc ²	Texture	Remarks
0-12	7.5YR 3/3	100				Silt Loam	
						_	.
1		DM-D	decard Matrix CC-C		1.0		21
				Covered or Coated Sar		India	² Location: PL=Pore Lining, M=Matrix. ators for Problematic Hydric Soils ³ :
-		icable to a	III LKKS, UIIIESS	otherwise noted.)		iliuic	
	Histosol (A1)		,	Sandy Redo	•		2 cm Muck (A10)
	Histic Epipedon (A2)			Stripped Mat			Red Parent Material (TF2)
	Black Histic (A3)				y Mineral (F1) (e	xcept MLRA 1)	Very Shallow Dark Surface (TF12)
	Hydrogen Sulfide (A4	•		Loamy Gleye	ed Matrix (F2)		Other (explain in Remarks)
[Depleted Below Dark	Surface (A1	11)	Depleted Ma	trix (F3)		
	Thick Dark Surface (A12)		Redox Dark	Surface (F6)		³ Indicators of hydrophytic vegetation and wetland
	Sandy Mucky Minera	al (S1)		Depleted Da	rk Surface (F7)		hydrology must be present, unless disturbed or
	Sandy Gleyed Matrix	(S4)		Redox Depre	essions (F8)		problematic.
Restrictive L	ayer (if present)):					
Type:							
Depth (inches):					Hydric Soil Pres	sent? Yes No X
Remarks:						-	
Chunks of b	uried wood.						
HYDROLO	GY						
Wetland Hyd	drology Indicator	rs:					
Primary Indic	ators (minimum c	of one requi	ired; check all th	at apply)			Secondary Indicators (2 or more required)
	Surface Water (A1)			Water staine	d Leaves (B9) (I	Except MLRA	Water stained Leaves (B9)
	High Water Table (A	2)	•	1, 2, 4A, and	l 4B)		(MLRA1, 2, 4A, and 4B)
	Saturation (A3)			Salt Crust (B	11)		Drainage Patterns (B10)
	Water Marks (B1)		•	Aquatic Inve	rtebrates (B13)		Dry-Season Water Table (C2)
	Sediment Deposits (I	B2)		Hydrogen St	ılfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)
	Orift Deposits (B3)			Oxidized Rhi	zospheres along	g Living Roots (C3)	Geomorphic Position (D2)
	Algal Mat or Crust (B	4)		Presence of	Reduced Iron (C	24)	Shallow Aquitard (D3)
	ron Deposits (B5)		•	Recent Iron	Reduction in Plo	wed Soils (C6)	Fac-Neutral Test (D5)
	Surface Soil Cracks	(B6)	•	Stunted or S	tressed Plants (I	D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
	nundation Visible on	Aerial Imag	ery (B7)	Other (Expla	in in Remarks)		Frost-Heave Hummocks (D7)
	Sparsely Vegetated (Concave Sur	face (B8)				
Field Observ	vations:						
Surface Water			No X	Depth (inches):			
Water Table Pr			No X	Depth (inches):	>12	Wetland Hyd	Irology Present?
			No X		>12	Wettand Hye	
Saturation Pres (includes capillary			NO	Depth (inches):	<u> </u>		Yes NoX
Describe Reco	rded Data (stream d	auge. monito	oring well, aerial nh	otos, previous inspection	ons), if available	:	
	, g	J ,	J , p	,,	,,		
Remarks:							
Ap	pendix N - South S	ystem					Exhibit 5

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Project/Site: S. Mol	alla Avenue	City/County:	Oregon	City/Clackamas	Sampling Date:	4/7/2	2021
•	ereghino	, ,		State:	OR	Sampling Point:	9
Investigator(s):	MS/JT	Section, To	wnship, Range:		Section 21 T3S	R2E	
Landform (hillslope, terrace, etc.:	Slor		· -	ncave, convex, none):	Slope	Slope (%):	~1
Subregion (LRR):	LRR A	Lat:	45.2935	· -		Datum:	WGS84
Soil Map Unit Name:		—— Il silty clay loam			ssification:	None	
Are climatic/hydrologic conditions			Yes	X No		olain in Remarks)	
Are vegetation Soil		significantly dist		Are "Normal Circumstance		,	
Are vegetation Soil				, explain any answers in Re	' '		
Ooii	Or riyurology	naturally probler	naic: ii needed	, explain any answers in re	iliaiks.)		
SUMMARY OF FINDING	S - Attach site ma	ıp showing sam	pling point	locations, transects	, important feat	ures, etc.	
Hydrophytic Vegetation Present?	Yes X	No	Is Sampled Ar	aa within			
Hydric Soil Present?	Yes	No X	a Wetlar			No X	
Vetland Hydrology Present?	Yes	No X					
Remarks:			l				
/EGETATION - Use scie	ntific names of pla	ants.					
	absolute		Indicator	Dominance Test wor	ksheet:		
ree Stratum (plot size:	% cover	Species?	Status	Number of Dominant Spe	cios		
1				That are OBL, FACW, or		1 (A)
2				That are OBE, 17,000, or	7.0.	(, ,
3				Total Number of Dominan	t		
4				Species Across All Strata		1 (В)
	0	= Total Cover				,	,
Sapling/Shrub Stratum (plot s	ze: 15)	_		Percent of Dominant Spec	riae		
1 Salix sp.	90	x	(FAC)	That are OBL, FACW, or		100% (A/B)
2 Rubus ursinus	5		FACU	That are OBE, 1710VV, or		(, (12)
3 Rubus laciniatus	5		FACU	Prevalence Index Wo	rksheet:		
4				Total % Cover of	Multiply b	y:	
5				OBL Species	x 1 =	0	
	100	= Total Cover		FACW species	x 2 =		
				FAC Species	x 3 =		
derb Stratum (plot size:	5)		(FAO)	FACU Species	x 4 =		
1 <i>Carex sp.</i> 2	1		(FAC)	UPL Species	x 5 =		D)
3				Column Totals	0 (A)	(В)
4				Prevalence Index =	3/A = :	#DIV/0!	
· 5				Trovalonos index			
6				Hydrophytic Vegetat	ion Indicators:		
7					1- Rapid Test for Hyd	rophytic Vegetation	1
8				X	2- Dominance Test is	>50%	
	1	= Total Cover	_		3-Prevalence Index is		
					4-Morphological Adar		
Voody Vine Stratum (plot size)				data in Remarks or o 5- Wetland Non-Vaso	. ,	
1					o- vvetiand Non-vasc Problematic Hydroph		nlain)
2		= Total Cover		¹ Indicators of hydric soil a			
		- rotal Cover		disturbed or problematic.	na wedana nyarology	musi ve present, t	1111000
				Hydrophytic			
% Bare Ground in Herb Stratum	99			Vegetation Present?	Yes X	No _	

SOIL			PHS#	7152	_		Sampling Point:	9
Profile Descri	ption: (Describe to	the depth i	needed to docume	nt the indicator or c	onfirm the absen	ce of indicators.)		
Depth	Matrix	<u> </u>		Redox Features		,		
(Inches)	Color (moist)	%	Color (moist)	% Type ¹	Loc ²	Texture	Remarks	
0-10	2.5YR 3/3	100				Silt Loam		
10-16	7.5YR 3/4	100				Silt Loam		
								
¹ Type: C=Cen	contration D=Danlat	ion PM-Pa	duced Matrix, CS=0	Covered or Coated Sa	and Crains	_	² Location: PL=Pore Lining, M=Matrix	
				s otherwise noted		Indic	ators for Problematic Hydric So	
-	Histosol (A1)	iicabie to	ali LNNS, ulliess	Sandy Red		illuic		Jiis .
	` '				` '		2 cm Muck (A10)	TE2)
	Histic Epipedon (A2))		Stripped M			Red Parent Material (T	·
	Black Histic (A3)				cky Mineral (F1) (e	xcept MLRA 1)	Very Shallow Dark Sur	
	Hydrogen Sulfide (A	•			yed Matrix (F2)		Other (explain in Rema	arks)
	Depleted Below Dar	•	.11)	Depleted N				
	Thick Dark Surface (k Surface (F6)		³ Indicators of hydrophytic vegetation	and wetland
	Sandy Mucky Minera	al (S1)			Oark Surface (F7)		hydrology must be present, unless	
	Sandy Gleyed Matrix	k (S4)		Redox Dep	oressions (F8)		problematic.	
Restrictive	Layer (if present):						
Type:								
Depth (inches	s):					Hydric Soil Pres	sent? Yes No	X
Remarks:	•							
Chunks of b	uried wood.							
HYDROLO								
Wetland Hy	drology Indicato	rs:						
Primary Indic	cators (minimum o	of one requ	uired; check all th	at apply)			Secondary Indicators (2 or mor	re required)
	Surface Water (A1)				ned Leaves (B9) (E	Except MLRA	Water stained Leaves	
	High Water Table (A	2)		1, 2, 4A, a	nd 4B)		(MLRA1, 2, 4A, and 4	∤B)
	Saturation (A3)			Salt Crust	(B11)		Drainage Patterns (B1	0)
	Water Marks (B1)			Aquatic Inv	vertebrates (B13)		Dry-Season Water Tab	ole (C2)
	Sediment Deposits (B2)		Hydrogen	Sulfide Odor (C1)		Saturation Visible on A	erial Imagery (C9)
	Drift Deposits (B3)			Oxidized R	thizospheres along	g Living Roots (C3)	Geomorphic Position (D2)
	Algal Mat or Crust (E	34)		Presence of	of Reduced Iron (C	24)	Shallow Aquitard (D3)	
	Iron Deposits (B5)			Recent Iron	n Reduction in Plo	wed Soils (C6)	Fac-Neutral Test (D5)	
	Surface Soil Cracks	(B6)		Stunted or	Stressed Plants (I	D1) (LRR A)	Raised Ant Mounds (D	6) (LRR A)
	Inundation Visible or	n Aerial Ima	gery (B7)	Other (Exp	lain in Remarks)		Frost-Heave Hummock	ks (D7)
	Sparsely Vegetated	Concave Su	ırface (B8)					
Field Obser	vations:							
Surface Water	Present? Yes		No X	Depth (inches):				
Water Table P	resent? Yes		No X	Depth (inches):	>16	Wetland Hyd	drology Present?	
Saturation Pre	sent? Yes		No X	Depth (inches):	>16	-	Yes No	X
(includes capillar				, , ,				
Describe Reco	orded Data (stream g	auge, monit	oring well, aerial ph	otos, previous inspec	ctions), if available	:		
Remarks:								
Α	ppendix N - South S	System					Exhibit 5 Exhibit 5	

7152

Project/Site: S. Mo	alla Avenue	City/County:	Oregon	City/Clackamas	Sampling Date:	4/7/2	2021
·	Cereghino	. , ,		State:	OR	Sampling Point:	10
Investigator(s):	MS/JT	Section. To	wnship, Range:		Section 21 T3S	• • •	
Landform (hillslope, terrace, etc.:		ope		ncave, convex, none):	Slope	Slope (%):	~1
Subregion (LRR):	LRR A	Lat:	45.2973	· -		Datum:	WGS84
		ell silty clay loam	40.2010			None	110004
Soil Map Unit Name:			Vac		ssification:		
Are climatic/hydrologic condition			Yes	X No_		olain in Remarks)	
Are vegetation Soil		significantly dist		Are "Normal Circumstance	' ',	Y	
are vegetation Soil	or Hydrology	naturally probler	natic? If needed	, explain any answers in Re	marks.)		
SUMMARY OF FINDING	S – Attach site m	nap showing sam	npling point	locations, transects	, important feat	ures, etc.	
Hydrophytic Vegetation Present?		No			-	·	
Hydric Soil Present?	Yes	No X	Is Sampled Ar			No X	
Wetland Hydrology Present?	Yes	No X	a wellan	ur <u>-</u>			
Remarks:		NO X					
/EGETATION - Use scie	·		1 0 :	la			
	absolu % cov		Indicator Status	Dominance Test wor	ksheet:		
<u>Free Stratum</u> (plot size:)	с	Cialao	Number of Dominant Spec	cies		
 1	·			That are OBL, FACW, or I	FAC:	2 ((A)
2					-		,
3				Total Number of Dominan	t		
1				Species Across All Strata:		2 (B)
	0	= Total Cover			-		,
apling/Shrub Stratum (plot s	i70:			Percent of Dominant Spec	nino.		
аршуотная опасат (рюся	,			That are OBL, FACW, or		100% (A/B)
2				That are OBL, I ACW, Or		10076	Λ(Β)
<u> </u>				Prevalence Index Wo	rksheet		
1				Total % Cover of	Multiply b	v·	
·				OBL Species	x 1 =		
		= Total Cover		FACW species	x 2 =		
				FAC Species	x 3 =		
erb Stratum (plot size:	5)			FACU Species	x 4 =	0	
Agrostis capillaris	60	X	FAC	UPL Species	x 5 =	0	
Schedonorus arundina	ceus 50	X	FAC	Column Totals	0 (A)	0 (B)
3							
4				Prevalence Index =	3/A =	#DIV/0!	
<u> </u>							
<u> </u>				Hydrophytic Vegetati	on Indicators:		
					1- Rapid Test for Hyd	rophytic Vegetation	1
					2- Dominance Test is		
	110	= Total Cover			3-Prevalence Index is		innorting
oody Vine Stratum (plot size	. \				1-Morphological Ada _l data in Remarks or o		
<u>′oody Vine Stratum</u> (plot size l	·				ata in Remarks or o 5- Wetland Non-Vaso	. ,	
-		<u> </u>			o- welland Non-vasc Problematic Hydroph		nlain)
2		_ T-4-1 O					
	0	= Total Cover		¹ Indicators of hydric soil a disturbed or problematic.	nu wetiand nydrology	must be present, t	ırııess
				· ·			
				Hydrophytic			
6 Bare Ground in Herb Stratum	0			Hydrophytic Vegetation Present?	Yes X	No _	

SOIL			PHS#	7152	_		Sampling Point:	10
Profile Descri	intion: (Describe to	the depth i	needed to docume	nt the indicator or c	onfirm the absen	ce of indicators.)		
Depth	Matrix			Redox Features				
(Inches)	Color (moist)	%	Color (moist)	% Type ¹	Loc ²	Texture	Remarks	
0-10	7.5YR 3/3	100				Silt Loam		
10-14	7.5YR 3/2	100				Silt Loam		
			,		<u> </u>			
					-			
				Covered or Coated Sa			² Location: PL=Pore Lining, M=Matri	
Hydric Soil	Indicators: (App	licable to	all LRRs, unless	otherwise noted	l.)	Indic	ators for Problematic Hydric So	oils³:
	Histosol (A1)			Sandy Red	lox (S5)		2 cm Muck (A10)	
	Histic Epipedon (A2))		Stripped M	atrix (S6)		Red Parent Material (T	F2)
	Black Histic (A3)			Loamy Mu	cky Mineral (F1)(e	xcept MLRA 1)	Very Shallow Dark Sur	face (TF12)
	Hydrogen Sulfide (A	4)		Loamy Gle	yed Matrix (F2)		Other (explain in Rema	arks)
	Depleted Below Dar	k Surface (A	.11)	Depleted N	/latrix (F3)			
	Thick Dark Surface ((A12)		Redox Dar	k Surface (F6)			
	Sandy Mucky Minera	al (S1)		Depleted D	Oark Surface (F7)		³ Indicators of hydrophytic vegetation hydrology must be present, unless	
	Sandy Gleyed Matrix	(S4)		Redox Dep	oressions (F8)		problematic.	disturbed of
Restrictive	Layer (if present):						
	_ayo: (p. 000	,.						
Type:	-\-					Unadaia Cail Bua	namt2 Van Na	v
Depth (inches	S)			_		Hydric Soil Pres	sent? Yes No _	<u> </u>
Remarks:								
HYDROLO)GY							
	drology Indicato	rs:						
_			irad, abaak all th	ot apply)			Sacandam / Indicators /2 or may	ro roquirod)
	cators (minimum o	one requ	illed, check all th		and Leaves (PO) (Event MLDA	Secondary Indicators (2 or mor	
	Surface Water (A1)	2)		1, 2, 4A, a	ned Leaves (B9) (E n d 4B)	EXCEPT WILITA	Water stained Leaves (MLRA1, 2, 4A, and 4	
	High Water Table (A Saturation (A3)	.2)					-	•
	Water Marks (B1)			Salt Crust	vertebrates (B13)		Drainage Patterns (B1) Dry-Season Water Tab	•
	` ,	DO)			, ,			` '
	Sediment Deposits (Drift Deposits (B3)	D2)			Sulfide Odor (C1)	a Living Poets (C2)	Saturation Visible on A	
	. , ,	24)			of Reduced Iron (C	g Living Roots (C3)	Geomorphic Position (I	D2)
	Algal Mat or Crust (E	04)			•	•	Shallow Aquitard (D3)	
	Iron Deposits (B5)	(DC)			n Reduction in Plo Stressed Plants (I	` '	Fac-Neutral Test (D5) Raised Ant Mounds (D	n6) (I DD A)
	Surface Soil Cracks		mam. (D7)		·	DI)(LKK A)		,, ,
	Inundation Visible or			Other (Exp	lain in Remarks)		Frost-Heave Hummock	(S (D7)
	Sparsely Vegetated	Concave St	пасе (Бо)					
Field Obser	vations:							
Surface Water	Present? Yes		No <u>X</u>	Depth (inches):				
Water Table P	resent? Yes		No <u>X</u>	Depth (inches):	>14	Wetland Hyd	drology Present?	
Saturation Pre			No <u>X</u>	Depth (inches):	>14		Yes No	X
(includes capillar	y fringe)							
Describe Reco	orded Data (stream g	auge, monit	oring well, aerial ph	otos, previous inspec	ctions), if available	:		
Remarks:								
A	nnondiy N. Court C	vetom						••
А	ppendix N - South S	ystelli					Exhibit 5 Exhibit 5	a

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7152

Project/Site: S. Mo	lalla Avenue	City/County:	Oregon	City/Clackamas	Sampling Date:	4/7/2	2021
· ·	Cereghino			State:	OR	Sampling Point:	11
Investigator(s):	MS/JT	Section, To	wnship, Range:		Section 21 T3S	• •	
Landform (hillslope, terrace, etc.			•	ncave, convex, none):	Slope	Slope (%):	~1
Subregion (LRR):	LRR A	Lat:	45.2973	· -			WGS84
		I silty clay loam	40.2010			None	110004
Soil Map Unit Name:			Van		ssification:		
Are climatic/hydrologic condition			Yes			plain in Remarks)	
Are vegetation Soil		significantly dist		Are "Normal Circumstand	, , ,	<u> </u>	
Are vegetation Soil	or Hydrology	naturally probler	natic? If needed	, explain any answers in Re	emarks.)		
SUMMARY OF FINDING	S – Attach site ma	p showing sam	pling point	locations, transects	, important fea	tures, etc.	
Hydrophytic Vegetation Present		No .			•	-	
Hydric Soil Present?		No	Is Sampled Are		X	No	
Wetland Hydrology Present?	Yes X	 No	a Wetian	<u>.</u>		·	
Remarks:							
cinario.							
/EGETATION - Use sci	 entific names of pla	ints.					
	absolute		Indicator	Dominance Test wor	ksheet:		
	% cover	Species?	Status				
ree Stratum (plot size:)			Number of Dominant Spe		_	
1				That are OBL, FACW, or	FAC:	2	(A)
3				Total Number of Dominan		•	(D)
4				Species Across All Strata	·	2	(B)
	0	= Total Cover					
Sapling/Shrub Stratum (plot s	ize:)			Percent of Dominant Spec			
1				That are OBL, FACW, or	FAC:	100%	(A/B)
2							
				Prevalence Index Wo			
4 5				Total % Cover of	Multiply I		
		- Total Cavar		OBL Species	x 1 =		
		= Total Cover		FACW species FAC Species	x 2 = x 3 =		
lerb Stratum (plot size:	5)			FACU Species	x 4 =		
1 Agrostis capillaris	70	X	FAC	UPL Species	x 5 =	= 0	
Alopecurus pratensis	30	Х	FAC	Column Totals	0 (A)	0 (В)
3							
4				Prevalence Index =	B/A =	#DIV/0!	
5							
ô				Hydrophytic Vegetat	ion Indicators:		
7					1- Rapid Test for Hy		1
8					2- Dominance Test is		
	100	= Total Cover			3-Prevalence Index i 4-Morphological Ada		ınnortina
/oody Vine Stratum (plot size	e:)				data in Remarks or c		
1					5- Wetland Non-Vas	•	
·					Problematic Hydroph		plain)
		= Total Cover		¹ Indicators of hydric soil a			
		_		disturbed or problematic.	, 3	• •	
				Hydrophytic			
/ B							
6 Bare Ground in Herb Stratum				Vegetation Present?	Yes X	No_	

SOIL			PHS#	71	52			Sampling Point:	11
Profile Descri	ption: (Describe to	the depth	needed to docume	ent the indi	cator or co	nfirm the abser	nce of indicators.)		
Depth	Matrix			Redox	Features				
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-2	10YR 3/2	100					Silt Loam		
2-9	10YR 3/2	95	10YR 2/1	5	C	M	Silt Loam	Mn masses	
9-16+	7.5YR 4/4	80	10YR 3/2	18	D	M	Silty Clay		
			10YR 2/1	2	С	M	Silt Loam	Mn masses	
¹ Type: C=Cond	centration, D=Deplet	tion, RM=Re	educed Matrix, CS=	Covered or	Coated Sar	nd Grains.		² Location: PL=Pore Lining, M=Matri	ix.
Hydric Soil	Indicators: (App	licable to	all LRRs, unles	s otherwi	se noted.))	Indic	ators for Problematic Hydric S	oils³:
	Histosol (A1)				Sandy Redo	x (S5)		2 cm Muck (A10)	
	Histic Epipedon (A2))			Stripped Ma	trix (S6)		Red Parent Material (īF2)
	Black Histic (A3)			ı	Loamy Mucl	ky Mineral (F1)	except MLRA 1)	Very Shallow Dark Su	rface (TF12)
	Hydrogen Sulfide (A	4)			Loamy Gley	ed Matrix (F2)		Other (explain in Rema	arks)
	Depleted Below Dar	k Surface (A	A11)		Depleted Ma	atrix (F3)			
	Thick Dark Surface	(A12)		X	Redox Dark	Surface (F6)			
	Sandy Mucky Minera	al (S1)			Depleted Da	rk Surface (F7)		Indicators of hydrophytic vegetation hydrology must be present, unless	
	Sandy Gleyed Matrix	x (S4)		F	Redox Depr	essions (F8)		problematic.	distalbed of
Restrictive	Layer (if present):							
Type:		,							
Depth (inches	s):				-		Hydric Soil Pres	sent? Yes X No	
Remarks:	<u></u>				_		1.,		
romano.									
HYDROLO	GY								
Wetland Hy	drology Indicato	rs:							
Primary Indi	cators (minimum o	of one req	uired; check all th	nat apply)				Secondary Indicators (2 or mo	re required)
	Surface Water (A1)			\	Water staine	ed Leaves (B9) (Except MLRA	Water stained Leaves	(B9)
	High Water Table (A	(2)		1	1, 2, 4A, and	d 4B)		(MLRA1, 2, 4A, and 4	\$B)
	Saturation (A3)				Salt Crust (E	311)		Drainage Patterns (B1	0)
X	Water Marks (B1)				Aquatic Inve	rtebrates (B13)		Dry-Season Water Tal	ole (C2)
X	Sediment Deposits ((B2)			Hydrogen S	ulfide Odor (C1)		Saturation Visible on A	verial Imagery (C9)
	Drift Deposits (B3)				Oxidized Rh	izospheres alon	g Living Roots (C3)	X Geomorphic Position (D2)
:	Algal Mat or Crust (E	34)			Presence of	Reduced Iron (0	C4)	Shallow Aquitard (D3)	
	Iron Deposits (B5)					Reduction in Plo	` '	Fac-Neutral Test (D5)	
	Surface Soil Cracks	` '				Stressed Plants ((D1) (LRR A)	Raised Ant Mounds (D	
	Inundation Visible or				Other (Expla	in in Remarks)		Frost-Heave Hummoc	ks (D7)
X	Sparsely Vegetated	Concave S	urface (B8)						
Field Obser	vations:								
Surface Water	Present? Yes		No <u>X</u>	Depth ((inches):				
Water Table P	resent? Yes		No <u>X</u>	Depth ((inches):	>16	Wetland Hyd	Irology Present?	
Saturation Pre (includes capillar			No <u>X</u>	Depth ((inches):	>16		Yes X No	
		iougo ==== '	toring well seed 1	notos ===: '	ouo incres "	one) if aveiled	<u> </u>		
Describe Reco	orded Data (stream g	gauge, moni	toring well, aerial pr	notos, previ	ous inspecti	ons), ir avaliable	∌:		
Pomorko:									
Remarks: Surface sat	uration observed	d winter o	f 2021.						
А	ppendix N - South S	System						Exhibit 5 Exhibits	18

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7152

Project/Site: S. Mola	illa Avenue	City/County:	Oregon	City/Clackamas	Sampling Date:	4/7/2	2021
Applicant/Owner: Jessey C				State:	OR	Sampling Point:	12
Investigator(s):	MS/JT	Section. To	wnship, Range:		Section 21 T3S	R2E	
Landform (hillslope, terrace, etc.:)	Slop			ncave, convex, none):	Slope	Slope (%):	~1
Subregion (LRR):	LRR A	Lat:	45.297	· -			WGS84
Soil Map Unit Name:		Il silty clay loam			ssification:	None	
Are climatic/hydrologic conditions			Yes	X No	-	plain in Remarks)	
Are vegetation Soil		significantly distr		Are "Normal Circumstance	. , ,	<u> </u>	
Are vegetation Soil	or Hydrology	naturally probler	natic? if needed	, explain any answers in Re	marks.)		
SUMMARY OF FINDINGS	6 – Attach site ma	p showing sam	pling point	locations, transects	, important fea	tures, etc.	
Hydrophytic Vegetation Present?	Yes X	No					
Hydric Soil Present?	Yes	No X	Is Sampled Ar			No X	
Wetland Hydrology Present?	Yes	No X		-			
Remarks:							
VEGETATION - Use scie	ntific names of pla	ants.					
	absolute		Indicator	Dominance Test wor	ksheet:		
Fron Stratum (mlat -:	% cover	Species?	Status	Niverban CD : CC	-1		
Tree Stratum_ (plot size: 1)			Number of Dominant Spec		2	(A)
-		_		That are OBL, FACW, or I	-AC:	2 ((A)
2 3				Total Number of Dominan	•		
<u> </u>				Species Across All Strata:		2 ((B)
<u> </u>	0	= Total Cover		Opecies Across Air Otrata.	-	((0)
Sapling/Shrub Stratum (plot siz	re:)			Percent of Dominant Spec		4000/	(A (D)
1		_		That are OBL, FACW, or	FAC:	100%	(A/B)
2 3				Prevalence Index Wo	rkahaat:		
<u> </u>			-	Total % Cover of	Multiply b	w.	
5				OBL Species	x 1 =		
		= Total Cover		FACW species	x 2 =		
		_		FAC Species	x 3 =		
lerb Stratum (plot size:	5)			FACU Species	x 4 =	0	
1 Agrostis capillaris	75	X	FAC	UPL Species	x 5 =	. 0	
2 Alopecurus pratensis	35	X	FAC	Column Totals	0 (A)	<u> </u>	B)
3							
4				Prevalence Index =	B/A =	#DIV/0!	
5				Headara wheetha Marratath			
6 7		_		Hydrophytic Vegetati		drambutia Vazatatian	
8					I- Rapid Test for Hyd 2- Dominance Test is	· · ·	ı
	110	= Total Cover			3-Prevalence Index i		
		_			1-Morphological Ada	ptations¹ (provide sı	upporting
Voody Vine Stratum (plot size:)				data in Remarks or c	n a separate sheet)	
1		_			5- Wetland Non-Vas		
2				l. ———	Problematic Hydroph		
	0	= Total Cover		¹ Indicators of hydric soil a	nd wetland hydrolog	y must be present, ι	unless
				disturbed or problematic. Hydrophytic			
% Bare Ground in Herb Stratum				Vegetation	Yes X	No	

SOIL			PHS#	7152			Sampling Point: 12
Profile Descri	ption: (Describe to	the depth n	eeded to docume	nt the indicator or co	nfirm the absen	ce of indicators.)	
Depth	Matrix			Redox Features			
(Inches)	Color (moist)	%	Color (moist)	% Type¹	Loc ²	Texture	Remarks
0-16	7.5YR 3/3	100				Silty Clay	
	·		_			_	
¹ Type: C=Cond	entration D=Depleti	ion RM=Red	duced Matrix CS=0	Covered or Coated Sar	nd Grains		² Location: PL=Pore Lining, M=Matrix.
				otherwise noted.)		Indic	ators for Problematic Hydric Soils ³ :
-	Histosol (A1)		,	Sandy Redo			2 cm Muck (A10)
	Histic Epipedon (A2)			Stripped Mat			Red Parent Material (TF2)
					xy Mineral (F1)(e	vcent MI PA 1)	Very Shallow Dark Surface (TF12)
	Black Histic (A3)	4\	•			ACEPT MERA 1)	
	Hydrogen Sulfide (A	•			ed Matrix (F2)		Other (explain in Remarks)
	Depleted Below Dark	•	11)	Depleted Ma			
	Γhick Dark Surface (•	•	Redox Dark	, ,		³ Indicators of hydrophytic vegetation and wetland
	Sandy Mucky Minera		,		rk Surface (F7)		hydrology must be present, unless disturbed or
	Sandy Gleyed Matrix	(S4)		Redox Depre	essions (F8)		problematic.
Restrictive I	_ayer (if present)):					
Type:							
Depth (inches):					Hydric Soil Pres	sent? Yes No X
Remarks:							
HYDROLO							
Wetland Hye	drology Indicator	rs:					
Primary Indic	ators (minimum c	of one requi	ired; check all th	at apply)			Secondary Indicators (2 or more required)
	Surface Water (A1)			Water staine	d Leaves (B9) (F	Except MLRA	Water stained Leaves (B9)
	High Water Table (A	2)		1, 2, 4A, and	i 4B)		(MLRA1, 2, 4A, and 4B)
	Saturation (A3)			Salt Crust (B	11)		Drainage Patterns (B10)
	Water Marks (B1)			Aquatic Inve	rtebrates (B13)		Dry-Season Water Table (C2)
	Sediment Deposits (I	B2)		Hydrogen St	ulfide Odor (C1)		Saturation Visible on Aerial Imagery (C
	Orift Deposits (B3)			Oxidized Rhi	izospheres alonç	g Living Roots (C3)	Geomorphic Position (D2)
	Algal Mat or Crust (B	4)		Presence of	Reduced Iron (C	24)	Shallow Aquitard (D3)
	ron Deposits (B5)			Recent Iron	Reduction in Plo	wed Soils (C6)	Fac-Neutral Test (D5)
	Surface Soil Cracks	(B6)		Stunted or S	tressed Plants (I	D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
	nundation Visible on	Aerial Imag	ery (B7)	Other (Expla	in in Remarks)		Frost-Heave Hummocks (D7)
	Sparsely Vegetated (Concave Sur	face (B8)				
Field Observ	vations:						
Surface Water			No X	Depth (inches):			
Water Table Pi			No X	Depth (inches):	>16	Wetland Hyd	Irology Present?
Saturation Pres			No X	Depth (inches):	>16		Yes No X
(includes capillar			<u> </u>	Bopan (moneo).			
Describe Reco	rded Data (stream g	auge, monito	oring well, aerial ph	otos, previous inspecti	ons), if available	:	
		-	•	•	•		
Remarks:							
=-							
Aj	pendix N - South S	ystem					Exhibit 5

7152

Project/Site: S. Mo	alla Avenue	City/County:	Oregon	City/Clackamas	Sampling Date	4/7/2	2021
Applicant/Owner: Jessey (Cereghino	_		State:	OR	Sampling Point:	13
nvestigator(s): JT		Section. To	wnship, Range:		Section 21 T35	R2E	
Landform (hillslope, terrace, etc.:) F		• •	ncave, convex, none):	Flat	Slope (%):	~1
Subregion (LRR):	LRR A	Lat:	45.297	-	-122.5589		WGS84
Soil Map Unit Name:		rell silty clay loam			ssification:	None	
Are climatic/hydrologic conditions			Yes	X No		plain in Remarks)	
Are vegetation Soil				Are "Normal Circumstance	. , ,	<u> </u>	
Are vegetation Soil	or Hydrology	naturally probler	natic? if needed	, explain any answers in Re	marks.)		
SUMMARY OF FINDING	S – Attach site r	nap showing sam	pling point	locations, transects	, important fea	tures, etc.	
Hydrophytic Vegetation Present?	Yes X	No					
Hydric Soil Present?	Yes X	No	Is Sampled Ar		X	No	
Wetland Hydrology Present?	Yes X	No	a Wotlan	_			
Remarks:							
tomanto.							
VEGETATION - Use scie	entific names of i	olants.					
	absolu		Indicator	Dominance Test wor	ksheet:		
	% cov		Status				
Tree Stratum (plot size:)			Number of Dominant Spe			
1				That are OBL, FACW, or I	-AC:	((A)
2							
3				Total Number of Dominan			·D.\
4				Species Across All Strata:		((B)
	0	= Total Cover					
Sapling/Shrub Stratum (plot s	ize:)			Percent of Dominant Spec	cies		
1				That are OBL, FACW, or	FAC:	100%	A/B)
2							
3				Prevalence Index Wo			
4				Total % Cover of	Multiply		
5		- Total Cavar		OBL Species	x 1 =		
		= Total Cover		FACW species FAC Species	x 2 = x 3 =		
Herb Stratum (plot size:	5)			FACU Species	x 4 =		
1 Shedonorus arundinac	eus 84	X	FAC	UPL Species	x 5 =	= 0	
2 Holcus lanatus	1		FAC	Column Totals	0 (A)	0 (B)
3 Anthoxanthum odoratu	<u>m</u> 5		FACU				
4 Poa annua	2		FAC	Prevalence Index =	3/A =	#DIV/0!	
5 Bromus hordeaceus	3		FACU				
6				Hydrophytic Vegetat			
7						drophytic Vegetatior	1
8					2- Dominance Test i	_	
	95	= Total Cover			3-Prevalence Index i 4-Morphological Ada	s ≤ 3.0° ptations¹ (provide si	upporting
Woody Vine Stratum (plot size	:)					on a separate sheet)	
1					5- Wetland Non-Vas	• •	
2						nytic Vegetation ¹ (Ex	plain)
-	0	= Total Cover		¹ Indicators of hydric soil a			
				disturbed or problematic.			
	5			Hydrophytic Vegetation	Vac V	Ma	
% Para Cround in Hanh Church				rvegeranou	Yes X	No	
% Bare Ground in Herb Stratum		_		Present?			

SOIL			PHS#	71	52			Sampling Point:	13
Profile Descri	ption: (Describe to	the depth	needed to docume	nt the ind	icator or co	nfirm the abser	nce of indicators.)		
Depth	Matrix				x Features		,		
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-2	10YR 3/1	100					Silt Loam		
2-12	10YR 3/1	97	7.5YR 4/6	3	С	M	Silt Loam	Fine	
				,					
¹ Type: C=Cond	centration, D=Deplet	ion RM=R	educed Matrix CS=0	Covered o	r Coated Sar	nd Grains		² Location: PL=Pore Lining, M=Matrix.	
	Indicators: (App						Indic	ators for Problematic Hydric Soils	s ³ :
-	Histosol (A1)		u,		Sandy Redo			2 cm Muck (A10)	
	Histic Epipedon (A2)	1			Stripped Ma	` '		Red Parent Material (TF2)
	Black Histic (A3)	,				ky Mineral (F1)(e	except MI RA 1)	Very Shallow Dark Surface	
		4)			-		skeept merce 1)	 ,	, ,
	Hydrogen Sulfide (A Doploted Bolow Dar	•	^11 \			ed Matrix (F2)		Other (explain in Remarks	'/
	Depleted Below Dar Thick Dark Surface (•	٦١١ <i>)</i>		Depleted Ma	Surface (F6)			
						ark Surface (F7)		³ Indicators of hydrophytic vegetation an	d wetland
	Sandy Mucky Minera				-	essions (F8)		hydrology must be present, unless dist	urbed or
	Sandy Gleyed Matrix				Redox Depr	essions (Fo)	1	problematic.	
Restrictive	Layer (if present):							
Type:					_				
Depth (inches	s):				_		Hydric Soil Pres	sent? Yes X No	
Remarks:									
HYDROLO	GV.								
	drology Indicato	rs:							
			uiradi ahaali all th	ot annly				Secondary Indicators (2 or more)	roquirod\
•	cators (minimum o	or one req	uired; check all th			ad Lagyas (BO) (Except MLDA	Secondary Indicators (2 or more	
	Surface Water (A1) High Water Table (A	2)			1, 2, 4A, and	ed Leaves (B9) (d 4B)	EXCEPT WILKA	Water stained Leaves (B9 (MLRA1, 2, 4A, and 4B)	
	Saturation (A3)	.2)			Salt Crust (E			Drainage Patterns (B10)	
	Water Marks (B1)				•	ertebrates (B13)		Dry-Season Water Table	(C2)
	Sediment Deposits (B2)			•	ulfide Odor (C1)		Saturation Visible on Aeri	` ,
	Drift Deposits (B3)	<i>DL</i>)					g Living Roots (C3)	X Geomorphic Position (D2)	
	Algal Mat or Crust (E	34)				Reduced Iron (0		Shallow Aquitard (D3)	,
	Iron Deposits (B5)	/				Reduction in Plo	•	Fac-Neutral Test (D5)	
	Surface Soil Cracks	(B6)				Stressed Plants (,	Raised Ant Mounds (D6)	(LRR A)
	Inundation Visible or	` '	igery (B7)			ain in Remarks)		Frost-Heave Hummocks (D7)
	Sparsely Vegetated					,			•
Field Obser	vations:						I		
Surface Water			No X	Denth	(inches):				
Water Table P			No X	•	(inches):	>12	Wetland Hyd	drology Present?	
Saturation Pre			No X	•	(inches):	>12	Wedana riye	Yes X No	
(includes capillar			NO X	Бериі	(IIICIIes).	- 12		163 <u>X</u> NO	
Describe Reco	orded Data (stream g	auge, mon	itoring well, aerial ph	otos, prev	ious inspecti	ions), if available):		
				•	•	•			
Remarks:									
Α	ppendix N - South S	system						Exhibit 5 Exhibit 5	

7152

Project/Site: S. Mola	Ila Avenue		City/County:	Oregon	City/Clackamas	Sampling Date:	4/7/	2021
Applicant/Owner: Jessey Co	ereghino				State:	OR	Sampling Point:	14
nvestigator(s): JT			Section, To	wnship, Range:		Section 21 T3S	R2E	
Landform (hillslope, terrace, etc.:)		Flat	,		ncave, convex, none):	Flat	Slope (%):	~1
Subregion (LRR):	LRR A		Lat:	45.297	-	-122.5589	' ` / _ Datum:	WGS84
Soil Map Unit Name:		ottrall silt	ty clay loam			ssification:	None	
Are climatic/hydrologic conditions				Yes	X No		olain in Remarks)	
Are vegetation Soil	_		significantly dist		Are "Normal Circumstand	. , ,	<u> </u>	
Are vegetation Soil	or Hydrolog	yr	naturally probler	natic? if needed	, explain any answers in Re	emarks.)		
SUMMARY OF FINDINGS	- Attach site	e map sl	howing sam	pling point	locations, transects	, important feat	tures, etc.	
Hydrophytic Vegetation Present?	Yes	No	Х					
Hydric Soil Present?	Yes	No	Х	Is Sampled Ar	\/		No X	
Wetland Hydrology Present?	Yes	No	Х		· · ·			
Remarks:								
.omano.								
VEGETATION - Use scier	ntific names o	of plants						
		solute	Dominant	Indicator	Dominance Test wor	ksheet:		
Fron Stratum (plat -:	<u>% (</u>	cover	Species?	Status	Niverban CD 1 CC	-:		
Tree Stratum (plot size: 1)				Number of Dominant Spe		4	(A)
2					That are OBL, FACW, or	-AC:		(A)
3					Total Number of Dominar	+		
Δ					Species Across All Strata		2	(B)
<u> </u>		0 =	= Total Cover		Opecies Across Air Otrata			(0)
2 1 0 1 0 1			- Total Gover					
Sapling/Shrub Stratum (plot size	e:)				Percent of Dominant Spe		500/	(A (D)
1					That are OBL, FACW, or	FAC:	50%	(A/B)
3					Prevalence Index Wo	vrkshoot:		
<u> </u>					Total % Cover of	Multiply b	nv:	
5					OBL Species	x 1 =	_	
· -		0 =	= Total Cover		FACW species	x 2 =		
					FAC Species	x 3 =		
Herb Stratum (plot size:	5)				FACU Species	x 4 =	0	
1 Shedonorus arundinace	us	54	Х	FAC	UPL Species	x 5 =	. 0	
2 Vulpia myurose	<u></u> ;	30	Х	FACU	Column Totals	0 (A)	0	(B)
3 Anthoxanthum odoratun	<u> </u>	3		FACU				
4 Poa annua		1 _		FAC	Prevalence Index =	3/A =	#DIV/0!	
5 Bromus hordeaceus		10		FACU				
6 Phleum pratense		2		FAC	Hydrophytic Vegetat			
7 8						1- Rapid Test for Hyd 2- Dominance Test is		1
		100 =	= Total Cover			3-Prevalence Index i	_	
			- Total Govel			4-Morphological Ada		upporting
Noody Vine Stratum (plot size:)					data in Remarks or o	n a separate sheet)
1						5- Wetland Non-Vaso	cular Plants ¹	
						Problematic Hydroph	ytic Vegetation ¹ (Ex	rplain)
2	·	0 =	= Total Cover	_	¹ Indicators of hydric soil a	nd wetland hydrolog	y must be present,	unless
2					disturbed or problematic.			
2					· ·			
2	0				Hydrophytic Vegetation	Yes	No	x

SOIL			PHS#	7152	_		Sar	mpling Point:	14
Profile Descr	iption: (Describe to	the depth n	eeded to docume	nt the indicator or o	confirm the absen	ce of indicators.)			
Depth	Matrix			Redox Features		,			
(Inches)	Color (moist)	%	Color (moist)	% Type ¹	Loc ²	Texture		Remarks	
0-14	10YR 3/1	100				Silt Loam			
			_						
			_			_			<u>.</u>
			_			_			
¹ Type: C=Con	ncentration, D=Deplet	ion RM=Red	duced Matrix CS=	Covered or Coated S	and Grains		² I ocation: PI	=Pore Lining, M=Ma	trix
	Indicators: (Appl					Indic		oblematic Hydric	
	Histosol (A1)		,	Sandy Re				2 cm Muck (A10)	
	Histic Epipedon (A2)			Stripped N				Red Parent Material	(TF2)
	Black Histic (A3)				ıcky Mineral (F1)(e	xcept MLRA 1)		Very Shallow Dark S	
	Hydrogen Sulfide (A	4)			eyed Matrix (F2)	,		Other (explain in Rer	` '
	Depleted Below Dark	•	11)		Matrix (F3)			Other (explain in reci	nanoj
	Thick Dark Surface (•	,		rk Surface (F6)				
-	Sandy Mucky Minera				Dark Surface (F7)			hydrophytic vegetation	
-	Sandy Gleyed Matrix				pressions (F8)		hydrology m	ust be present, unles problematic.	s disturbed or
le control de la				Redox Be	pressions (i o)			problematic.	
	Layer (if present)):							
Type:									
Depth (inche	s):					Hydric Soil Pres	sent? Yes	No	<u> </u>
HYDROLO Wetland Hy	OGY vdrology Indicato	rs:							
_	cators (minimum c		ired: check all th	at annly)			Secondary	Indicators (2 or m	ore required)
1 milary mai	Surface Water (A1)	one requ	irea, ericeit air ti		ned Leaves (B9) (I	Except MLRA	Occordary	Water stained Leave	
	High Water Table (A	2)		1, 2, 4A, a				(MLRA1, 2, 4A, and	
	Saturation (A3)	,		Salt Crust	(B11)			Drainage Patterns (E	310)
	Water Marks (B1)				vertebrates (B13)		-	Dry-Season Water T	able (C2)
	Sediment Deposits (B2)		Hydrogen	Sulfide Odor (C1)			Saturation Visible on	Aerial Imagery (C9)
	Drift Deposits (B3)			Oxidized F	Rhizospheres along	g Living Roots (C3)	Х	Geomorphic Position	ı (D2)
	Algal Mat or Crust (E	34)		Presence	of Reduced Iron (C	24)		Shallow Aquitard (D3	3)
	Iron Deposits (B5)			Recent Iro	n Reduction in Plo	wed Soils (C6)		Fac-Neutral Test (D5	5)
	Surface Soil Cracks	(B6)		Stunted or	Stressed Plants (I	D1) (LRR A)		Raised Ant Mounds	(D6) (LRR A)
	Inundation Visible or	n Aerial Imag	ery (B7)	Other (Exp	olain in Remarks)			Frost-Heave Hummo	ocks (D7)
	Sparsely Vegetated	Concave Su	rface (B8)						
Field Obser	rvations:								
Surface Wate	r Present? Yes		No <u>X</u>	Depth (inches):					
Water Table F	Present? Yes		No <u>X</u>	Depth (inches):	>14	Wetland Hyd	Irology Pres	ent?	
Saturation Pre			No X	Depth (inches):	>14		Yes	No	<u> </u>
	orded Data (stream g	auge, monito	oring well, aerial ph	notos, previous inspe	ctions), if available	<u> </u>			
Remarks:									
	ar er er e								
P	Appendix N - South S	ystem					Exhibit 5		T S

Project/Site:		la Avenu	<u>e </u>	City/County:	Oregon	City/Clackamas	Sam	pling Date:	4///	2021
Applicant/Owner:	Jessey Ce	reghino					State: OR	_ S	ampling Point:	15
Investigator(s):		JT		Section, To	wnship, Range:		Sectio	n 21 T3S R2	2E	
Landform (hillslope, te	errace, etc.:)		Dito	ch	Local relief (cor	ncave, convex, none):	Co	ncave	Slope (%):	~2
Subregion (LRR):		LRR A	<u> </u>	Lat:	45.297	′5 L	.ong: -12	2.5591	Datum:	WGS84
Soil Map Unit Name:			Cottre	II silty clay loam		N	VI Classification:	:	None	
Are climatic/hydrologic	c conditions o	n the site ty	pical for this	s time of year?	Yes	X	No	(if no, explain	n in Remarks)	
Are vegetation	Soil	or Hyd	drology	significantly dist	urbed?	Are "Normal Circum	nstances" prese	_ nt? (Y/N)	Υ	
Are vegetation	Soil	or Hyd	drology	naturally probler	natic? If needed	, explain any answers	s in Remarks.)			
		_	<u> </u>				•			
SUMMARY OF F	FINDINGS	- Attac	h site ma	p showing sam	pling point	locations, trans	ects, impor	tant featur	es, etc.	
Hydrophytic Vegetatio	on Present?	Yes	Х	No	Is Sampled Ar	ea within				
Hydric Soil Present?		Yes	X	No	a Wetlan		Yes X	_ No		
Wetland Hydrology Pr	resent?	Yes	X	No						
Remarks:										
VEGETATION -	Use scien	tific nam	nes of pla	ants.						
			absolute		Indicator	Dominance Tes	t worksheet:			
Tree Stratum (plot :	size:	١	% cover	Species?	Status	Number of Dominar	nt Species			
1						That are OBL, FAC	·		1	(A)
2				_		2.0 002, 1710	, 5. 77.0.		<u>-</u>	v '/
3						Total Number of Do	minant			
4						Species Across All			2	(B)
_			0	= Total Cover						
Sapling/Shrub Stratun	<u>n</u> (plot size	7.)	_		Percent of Dominar	ıt Snecies			
1	(piot size	**	-'			That are OBL, FAC	·	F.	0%	(A/B)
2				_		mat are OBL, I AO	, or i Ao.		- /0	(, , , ,)
3				<u> </u>		Prevalence Inde	x Worksheet			
4						Total % Cover of		Multiply by:		
5						OBL Species	30	x 1 =	30	
			0	= Total Cover		FACW species	5	x 2 =	10	
			_	_		FAC Species	20	x 3 =	60	
Herb Stratum (plot		5)				FACU Species	20	x 4 =	80	
1 Mentha pulege			30	_ <u>X</u>	OBL	UPL Species		x 5 =	0	
2 Anthoxanthun			20	x	FACU	Column Totals	75	_(A)	180	(B)
3 Phleum prater			10		FAC			-	40	
4 Schedonorus		us			FAC	Prevalence In	dex =B/A =	2.	.40	
5 Camas quama	isia		5		FACW	Uvdronby 4: 5 V	notation last!	otoro:		
6 7						Hydrophytic Ve	-		butio \/c==t=±:-	n
8						-		est for Hydrop nce Test is >5	hytic Vegetatio	11
<u> </u>			75	= Total Cover		x		nce Test is >5 nce Index is ≤ 3		
			- 13	- 10tal 00V6l					ions ¹ (provide s	upporting
Woody Vine Stratum	(plot size:)						separate sheet	
1							5- Wetland	d Non-Vascula	r Plants ¹	
2							Problemat	ic Hydrophytic	Vegetation ¹ (Ex	kplain)
			0	= Total Cover		¹ Indicators of hydric	soil and wetland	d hydrology mu	ust be present,	unless
			-			disturbed or probler	natic.			
						Hydrophytic				
% Bare Ground in Her	rh Stratum	າ	25			Vegetation	Yes	X	No	

SOIL			PHS#	7′	152			Sampling Point:	15
Profile Descr	ription: (Describe to	the depth	needed to docume	ent the ind	licator or co	nfirm the absen	ce of indicators.)		
Depth	Matrix	•			x Features		,		
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-2	10YR 3/1	100					Silt Loam	-	
2-12	10YR 3/1	65	7.5YR 4/6	30	<u> </u>	M	Silt Loam	Large/Diffuse	
			10YR 2/1	5	C	M	Silt Loam	Mn nodules	
¹ Type: C=Cor	ncentration, D=Deplet	tion, RM=R	educed Matrix, CS=	Covered o	r Coated Sar	nd Grains.		² Location: PL=Pore Lining, M=Matri	IX.
Hydric Soil	Indicators: (App	licable to	all LRRs, unless	s otherw	ise noted.))	Indic	ators for Problematic Hydric S	oils³:
	Histosol (A1)				Sandy Redo	x (S5)		2 cm Muck (A10)	
	Histic Epipedon (A2))			Stripped Mat	trix (S6)		Red Parent Material (1	/F2)
	Black Histic (A3)				Loamy Muck	ky Mineral (F1) (e	except MLRA 1)	Very Shallow Dark Sui	rface (TF12)
	Hydrogen Sulfide (A	4)			Loamy Gleye	ed Matrix (F2)		Other (explain in Rema	arks)
	Depleted Below Dar	k Surface (A11)		Depleted Ma	atrix (F3)			
	Thick Dark Surface	(A12)		X	Redox Dark	Surface (F6)		2	
	Sandy Mucky Minera	al (S1)			Depleted Da	rk Surface (F7)		Indicators of hydrophytic vegetation hydrology must be present, unless	
	Sandy Gleyed Matrix	x (S4)			Redox Depre	essions (F8)		problematic.	a.o.a
Restrictive	Layer (if present):							
Type:									
Depth (inche	es):				_		Hvdric Soil Pres	sent? Yes X No	
Remarks:					_				
HYDROLO									
Wetland Hy	ydrology Indicato	rs:							
Primary Indi	icators (minimum o	of one req	uired; check all th	nat apply))			Secondary Indicators (2 or mo	re required)
	Surface Water (A1)				•	ed Leaves (B9) (I	Except MLRA	Water stained Leaves	
	High Water Table (A	(2)			1, 2, 4A, and	d 4B)		(MLRA1, 2, 4A, and 4	‡B)
	Saturation (A3)				Salt Crust (E	311)		X Drainage Patterns (B1	0)
	Water Marks (B1)				Aquatic Inve	rtebrates (B13)		Dry-Season Water Tal	ole (C2)
	Sediment Deposits ((B2)			Hydrogen St	ulfide Odor (C1)		Saturation Visible on A	verial Imagery (C9)
	Drift Deposits (B3)				Oxidized Rh	izospheres alono	g Living Roots (C3)	X Geomorphic Position (D2)
	Algal Mat or Crust (E	34)			Presence of	Reduced Iron (C	C4)	Shallow Aquitard (D3)	
	Iron Deposits (B5)				•	Reduction in Plo	` '	Fac-Neutral Test (D5)	
	Surface Soil Cracks				1	tressed Plants (I	D1) (LRR A)	Raised Ant Mounds (D	, ,
	Inundation Visible or				Other (Expla	in in Remarks)		Frost-Heave Hummoc	ks (D7)
	Sparsely Vegetated	Concave S	urface (B8)						
Field Obse	rvations:								
Surface Wate	er Present? Yes		No <u>X</u>	Depth	(inches):				
Water Table F	Present? Yes		No <u>X</u>	Depth	(inches):	>12	Wetland Hyd	Irology Present?	
Saturation Pre			No <u>X</u>	Depth	(inches):	>12		Yes X No	
(includes capilla									
Describe Rec	orded Data (stream g	gauge, mon	itoring well, aerial ph	notos, prev	vious inspecti	ons), if available	:		
Remarks:									
A	Appendix N - South S	System					Ī	Exhibit 5 Exhibit	#

Appendix C

Site Photos

Appendix N - South System Exhibit 5 Exhibit 5

Photo A: Looking southeast at sample points 1 and 12, Wetland B, and a portion of Wetland A. Photo B: Looking south at Wetland A and **Existing Culvert** existing culverts (for access to eastern portion of study area. **Existing Culvert**

Project # 7152 Date 5/14/21

Photo documentation

S. Molalla Avenue - Clackamas County, Oregon

Photos taken April 7, 2021

Pacific Habitat Services, Inc. 9450 SW Commerce Circle, Suite 180 Wilsonville, OR 97070

Appendix N - South System

Exhibit 5

	Photo C:
	Looking northwest at sample points 10 and 11, and Wetland D.
Photo D:	
Looking south at Sample point 5 (upland).	
(upiditu).	
Project #7152	
Date 5/14/21	Photo documentation

Pacific Habitat Services, Inc. 9450 SW Commerce Circle, Suite 180 Wilsonville, OR 97070

Appendix N - South System

— Exhibit 5 **Exhibits** Page 563060**25995999**

Photos taken April 7, 2021

	Photo E: Looking east at sample points 6 and 7, and Wetland F.
Photo F Looking north at Wetland F.	
Project #7152 Date 04/14/21	Photo documentation S. Molalla Avenue - Clackamas County, Oregon

Pacific Habitat Services, Inc. 9450 SW Commerce Circle, Suite 180 Wilsonville, OR 97070

Appendix N - South System

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Photos taken April 7, 2021

Appendix D

Wetland Definitions and Methodology

Appendix N - South System Exhibit 5 Exhibit 5 Page 505 of 2012 Page 505 of

WATERS OF THE STATE AND WETLAND DEFINITION AND **CRITERIA**

Regulatory Jurisdiction

Wetlands and water resources in Oregon are regulated by the Oregon Department of State Lands (DSL) under the Removal-Fill Law (ORS 196.800-196.990) and by the U.S. Army Corps of Engineers (COE) through Section 404 of the Clean Water Act.

The primary source documents for wetland delineations within Oregon is the Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (U.S. Army Corps of Engineers, 2010), which are required by both DSL and COE.

Waters of This State and Wetland Definition

Waters of This State are defined as "all natural waterways, tidal and non-tidal bays, intermittent streams, constantly flowing streams, lakes, wetlands, that portion of the Pacific Ocean that is in the boundaries of this state, all other navigable and non-navigable bodies of water in this state and those portions of the ocean shore, as defined in ORS 390.605, where removal or fill activities are regulated under a state-assumed permit program as provided in 33 U.S.C. 1344(g) of the Federal Water Pollution Control Act, as amended." (DSL 2014)

Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (DSL 2014).

Wetland Criteria

Based on the above definition, three major factors characterize a wetland: hydrology, substrate, and biota.

Wetland Hydrology

Wetland hydrology is related to duration of saturation, frequency of saturation, and critical depth of saturation. The 1987 manual defines wetland hydrology as inundation or saturation within a major portion of the root zone (usually above 12 inches), typically for at least 12.5% of the growing season. The wetland hydrology criterion can be met, however, if saturation within the major portion of the root zone is present for only 5% of the growing season, depending on other evidence.

The growing season is defined as the portion of the year when soil temperatures at 12.0 inches below the soil surface are higher than biological zero (41 degrees Fahrenheit, 5 degrees Celsius), but also allows approximation from frost free days, based on air temperature. The growing season for any given site or location is determined from US Natural Resources Conservation Service, (formerly Soil Conservation Service) data and information.

> Appendix D – Wetland Definition and Methodology Pacific Habitat Services, Inc. Page 1



Exhibit 5

Page 506 of 20 Page 6 100 0 184

Wetland hydrologic indicators include the following: visual observation of inundation or saturation, watermarks, drift lines, sediment deposits, and/or oxidized rhizospheres with living roots. Oxidized rhizospheres are defined as yellowish-red zones around the roots and rhizomes of some plants that grow in frequently saturated soils. Other indicators of hydrology, including algal mats or crust, iron deposits, surface soil cracks, sparsely vegetated concave surface, salt crust, aquatic invertebrates, hydrogen sulfide odor, reduced iron, iron reduction in tilled soils, and stunted or stressed plants can also be used to determine the presence of wetland hydrology.

Wetland Substrate (Soils)

Most wetlands are characterized by hydric soils. Hydric soils are those that are ponded, flooded, or saturated for long enough during the growing season to develop anaerobic conditions. Periodic saturation of soils causes alternation of reduced and oxidized conditions, which leads to the formation of redoximorphic features (gleying and mottling). Mineral hydric soils will be either gleyed or will have bright mottles and/or low matrix chroma. The redoximorphic feature known as gley is a result of greatly reduced soil conditions, which result in a characteristic grayish, bluish or greenish soil color. The term mottling is used to describe areas of contrasting color within a soil matrix. The soil matrix is the portion of the soil layer that has the predominant color. Soils that have brightly colored mottles and a low matrix chroma are indicative of a fluctuating water table.

Hydric soil indicators include organic content of greater than 50% by volume, and/or presence of redoximorphic features and dark soil matrix, as determined by the use of a Munsell Soil Color Chart. This chart establishes the chroma, value and hue of soils based on comparison with color chips. Mineral hydric soil must meet one of the 16 definitions for hydric soil indicators, or be classified as a "problem soil" in the Regional Supplement.

Wetland Biota (Vegetation)

Wetland biota is defined as hydrophytic vegetation. A hydrophyte is a plant species that is capable of growing in substrates that are periodically deficient in oxygen as a result of saturated soil conditions. The U.S. Fish and Wildlife Service, in the *National List of Plant Species that Occur in Wetlands*, has established five basic groups of vegetation based on their frequency of occurrence in wetlands. These categories, referred to as the "wetland indicator status", are as follows: obligate wetland plants (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and obligate upland (UPL). Table 1 gives a definition of the plant indicator codes.

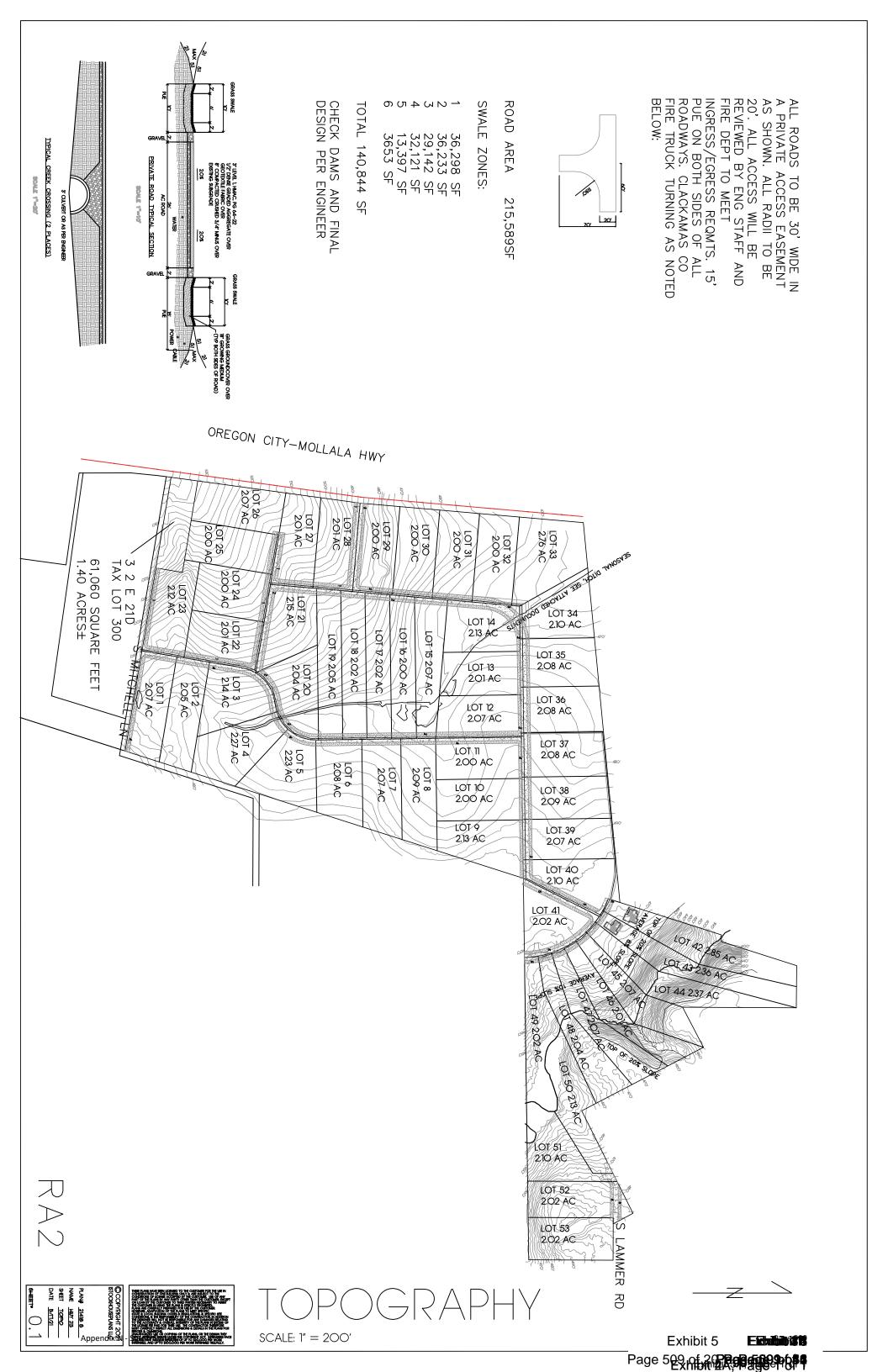
 Table 1.
 Description of Wetland Plant Indicator Status Codes

Indicator	
Code	Status
OBL	Obligate wetland. Plants that always occur in standing water or in saturated soils.
FACW	Facultative wetland. Plants that nearly always occur in areas of prolonged flooding or require standing water or saturated soils but may, on rare occasions, occur in non-wetlands.
FAC	Facultative. Plants that occur in a variety of habitats, including wetland and mesic to xeric non-wetland habitats but commonly occur in standing water or saturated soils.
FACU	Facultative upland. Plants that typically occur in xeric or mesic non-wetland habitats but may frequently occur in standing water or saturated soils.
UPL	Obligate upland. Plants that rarely occur in water or saturated soils.

Appendix D – Wetland Definition and Methodology Pacific Habitat Services, Inc. Page 2

 Observations of hydrology, soils, and vegetation, were made using the "Routine On-site" delineation method as defined in the 1987 manual and the Regional Supplement for areas that were not currently in agricultural production. One-foot diameter soil pits were excavated to 20 inches and soil profiles were examined for hydric soil and wetland hydrology field indicators. In addition, a visual absolute-cover estimate of the dominant species of the plant community was performed using soil pit locations as a center of reference. Dominant plant species are based on estimates of absolute cover for herbaceous, and shrub species within a 5 foot radius of the sample point, and basal area cover for tree and woody vine species within a 30 foot radius of the sample point. Plant species in each vegetative layer, which are estimated at less than 20% of the total cover, are not considered to be dominant. The wetland indicator status is then used to determine if there is an overall dominance (greater than 50%) of wetland or upland plant species. If less than 50% of the dominant species are hydrophytic, then the prevalence index may be used to determine if the subdominant species are hydrophytic. If the prevalence index is less than or equal to 3, hydrophytic vegetation criterion is met.

During data collection, the soil profiles were examined for hydric soil and wetland hydrology field indicators. Plant species and cover were recorded. Data was recorded on standard data sheets, which contain the information specified in the 1987 Corps Manual and the Regional Supplement.

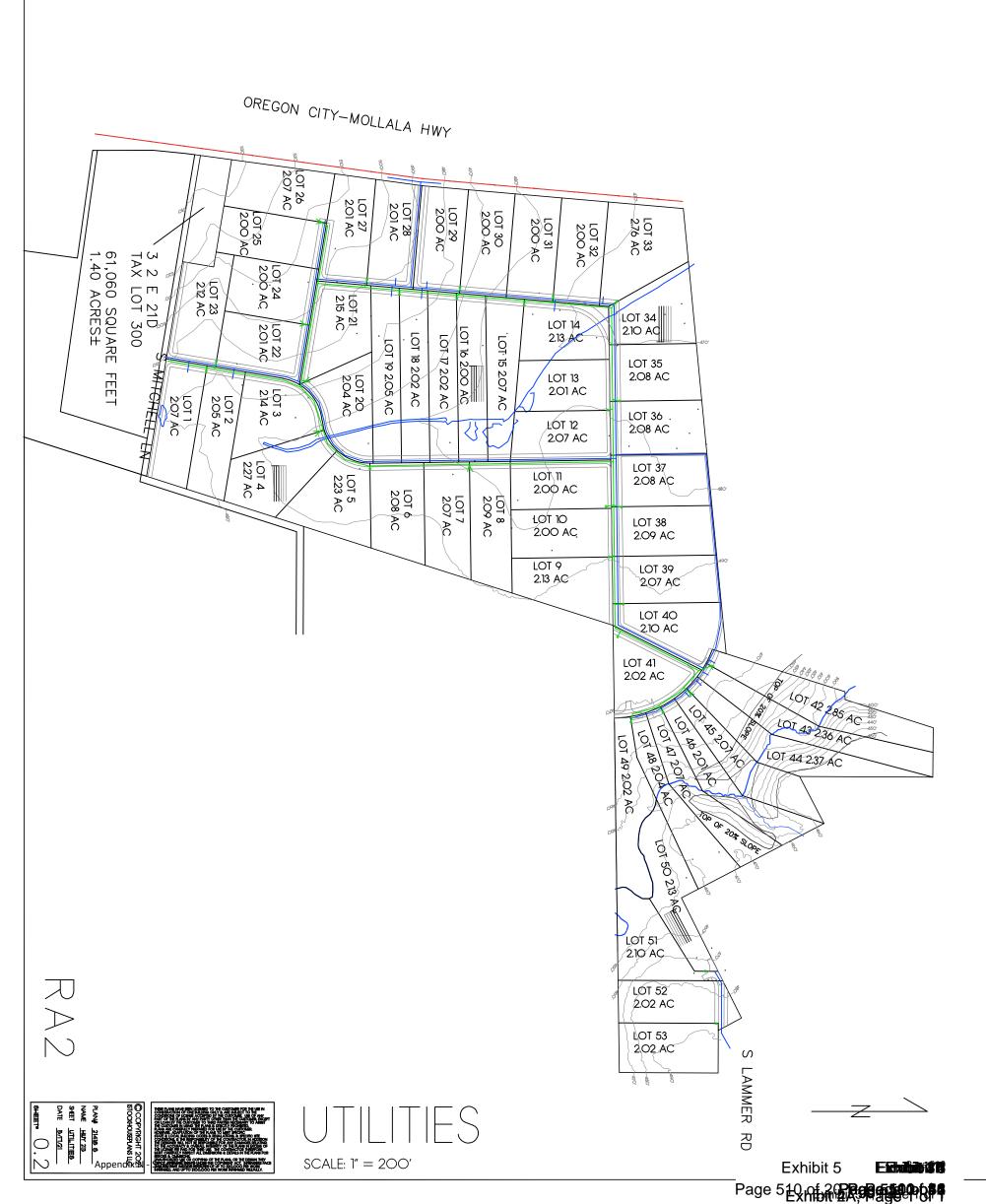


SEPTIC. 61 CURRENTLY
APPROVED TEST HOLES, SEE
ATTACHED DOCUMENTATION.
SITES MAY HAVE TO CHANGE
TO MEET ON SITE WASTE
WATER CRITERIA

TYPICAL SEPTIC AND RESERVE
SHOWN ON SELECTED SITES.
SEE SHEET 0.4 FOR LOTS
42-49

WATER: CLACKAMAS RIVER,
NEW MAIN TO RUN UNDER
STREETS. SELECT STUBS FOR
METERS SHOWN

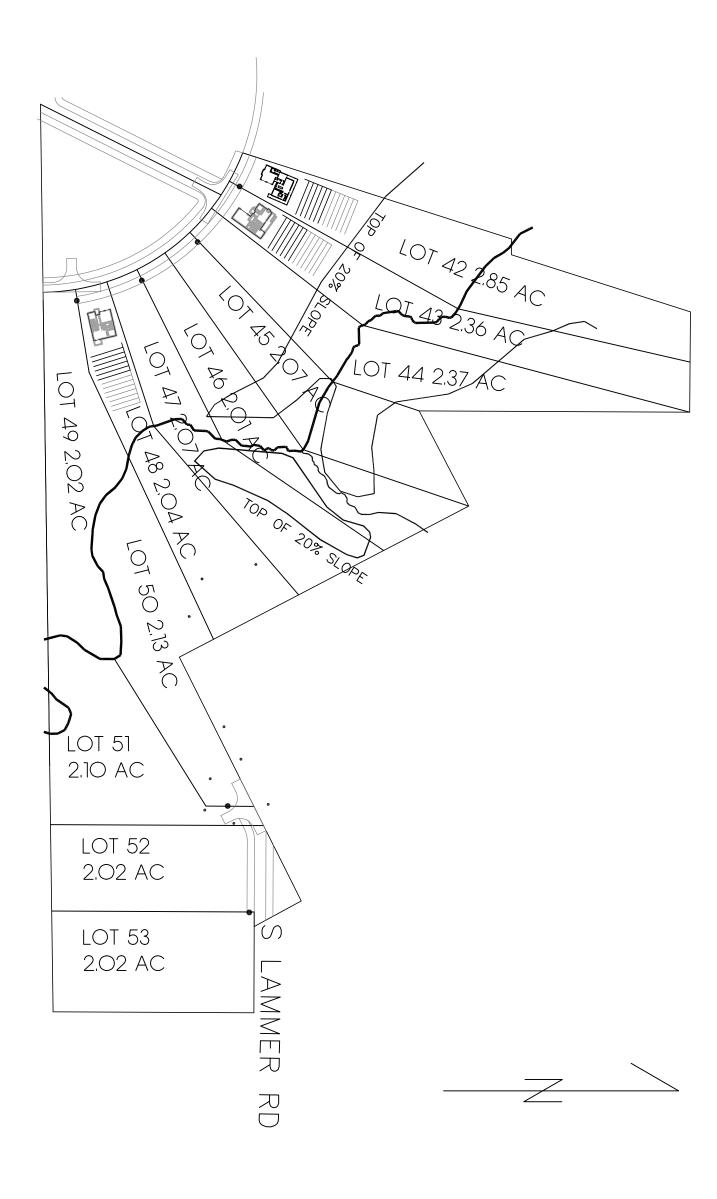
POWER: UNDERGROUND IN PUE AND PRIVATE STREETS, PEDESTALS AS NOTED. SELECT STUBS FOR METERS SHOWN



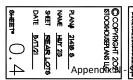


Page 511 ALACE PROPERTY PORTS

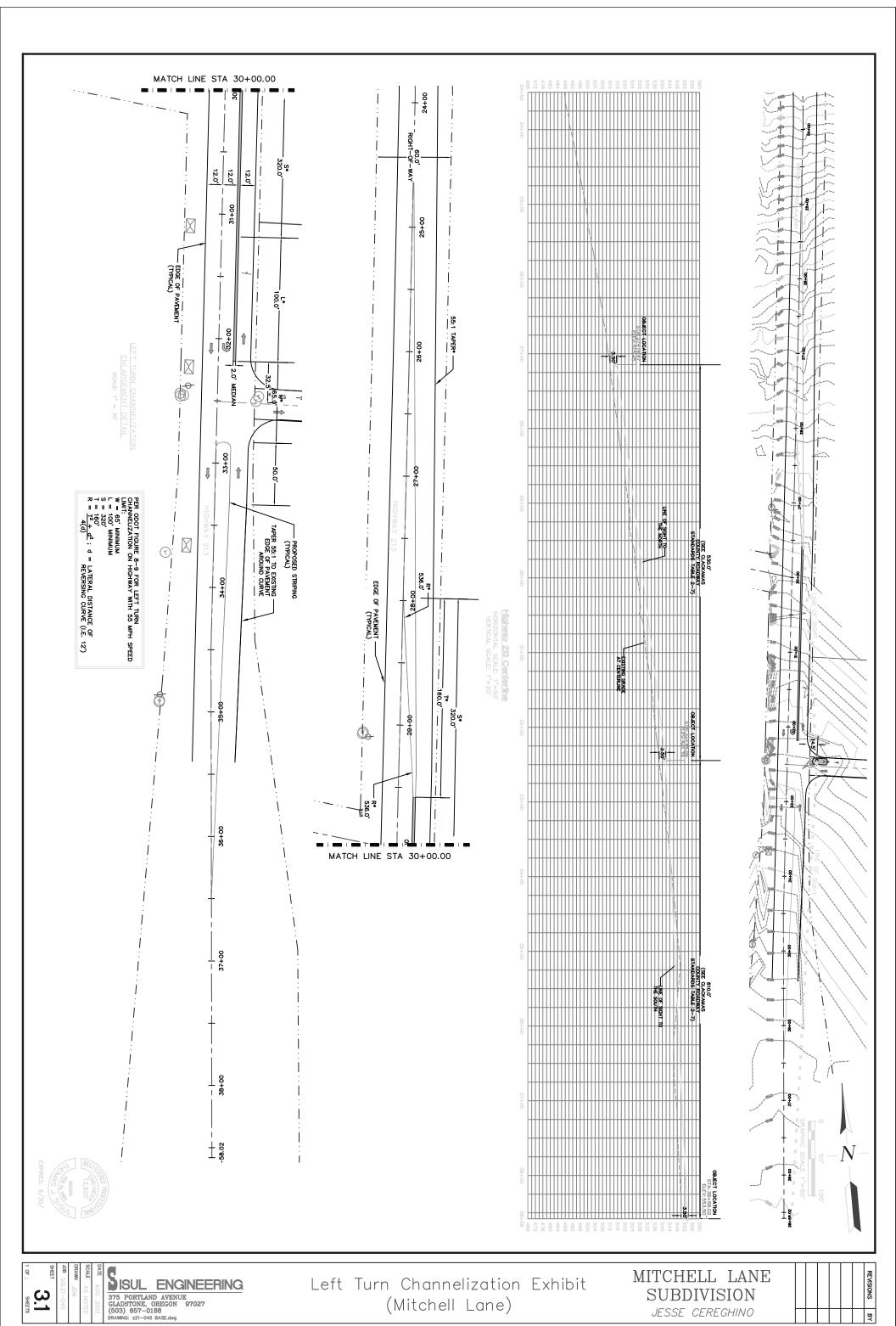
STUDY OF LOTS 42-49 SHOWS THAT THEY ARE DESIGNED WITH ENOUGH SPACE FOR A HOME AND ADEQUATE SEPTIC FIELD AT MORE THAN 50' FROM THE CREEK AND WELL WITHIN THE 10% OR LESS SLOPE. LOTS SHOWN WITH HOUSES AND SEPTIC FIELDS ARE THOSE WITH THE TIGHTEST TOPOGRAPHY TO DEAL WITH.



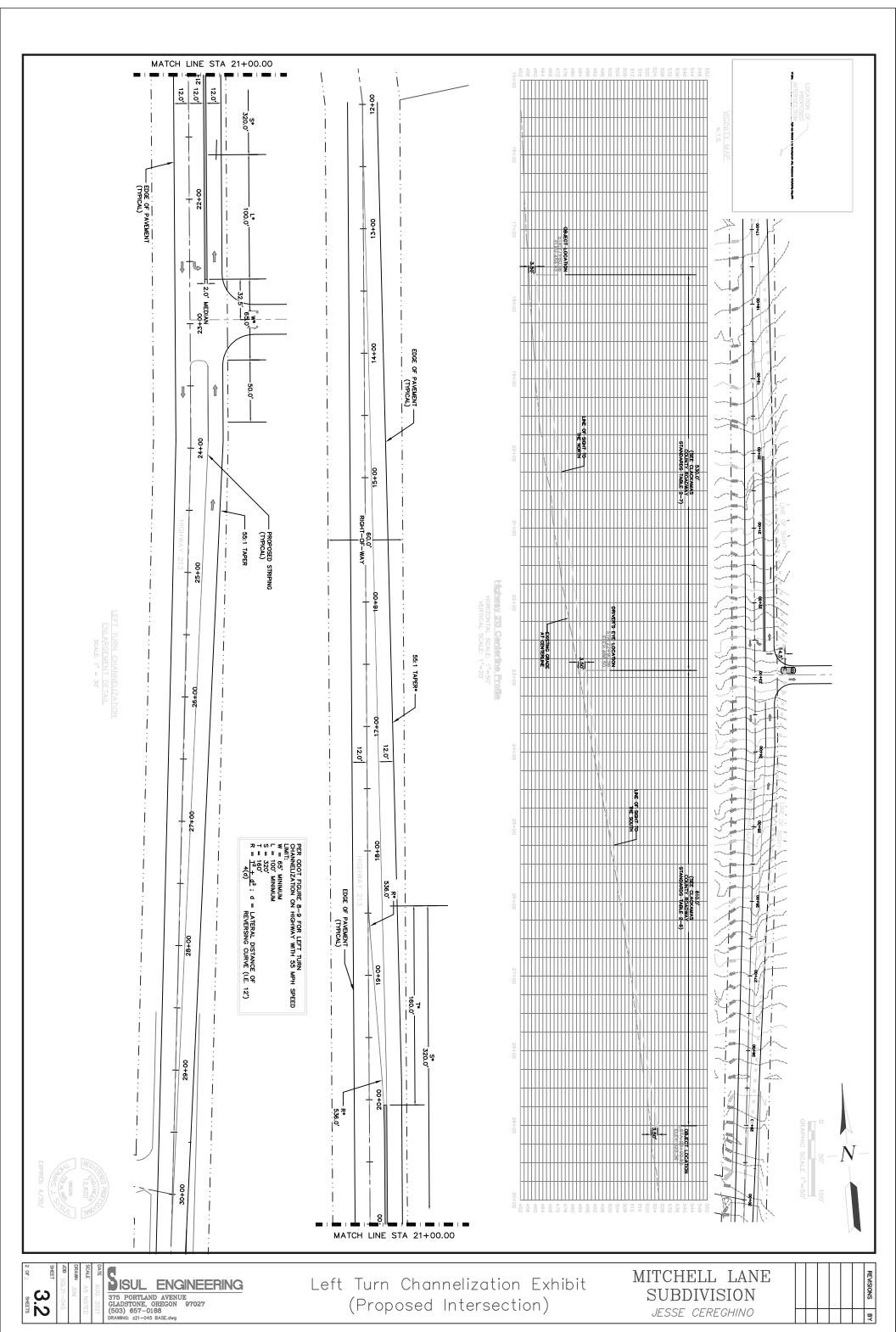
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Appendix N - South System Exh



October 13, 2021

To Whom it May Concern,

I have been engaged to conduct onsite septic feasibility and certification of Mr. Cereghino's property at Highway 213 and Mitchell Lane. I understand the application is for 53 lots. To this point, I have obtained 11 approved onsite wastewater disposal evaluations at locations throughout the property.

I have over 10 years of on-site wastewater permitting and design experience. It is evident to me that onsite septic systems are feasible to serve at least 53 lots. A septic system typically requires 4500 sq. ft. of drain-field area. This can be further reduced with alternative treatment technology to roughly 1200 sq. ft. The soil morphology is uniform throughout and identified as Jory soil. As such, 42 lots can be easily accommodated with the current approved areas, within each of the proposed lots, and a series of easements if need be. Although new test pits will be required for the additional onsite evaluations, the uniformity of the soil, the size of the lots, and the slope of the property indicate that individual onsite disposal systems will be permissible for each lot. I see no reasonable way that the necessary septic system approvals couldn't be obtained under current regulations located in OAR 340-071 and 340-073.

Warm regard, Edgard Diaz Registered Environmental Health Specialist.

Edgar Diaz, REHS Cellphone# 503-989-5059

Page 515 of 200 graphs 1984

VanArsdel, Ltd.

Taylor Phillips 5678 Main St New York, NY 90210

September 16, 20XX

Dear Taylor Phillips,

Write the body of your letter here. To update any of the letter's information, select the text, and start typing.

Want to change fonts? Go to the Home tab and choose Fonts. You can use a built-in font combination or select one of your own.

You can also change the colors of the template to match your personal taste. Go to the Design tab and choose a color palette from the Colors menu. Hovering over the different palettes will show you what your document would look like with the new palette.

To change the color or font formatting back to the original settings, go to the Design tab, and select the Theme menu. From there, choose the option to reset the original template theme.

Warm Regards,

Jordan Mitchell

CEO

5678 Main St. New York, NY 90210 212-555-0199

www.vanarsdelltd.com | jordan@vanarsdelltd.com



5678 Main St. New York, NY 90210 212-555-0199

Taylor Phillips 5678 Main St New York, NY 90210

September 16, 20XX

Dear Taylor Phillips,

Write the body of your letter here. To update any of the letter's information, select the text, and start typing.

Want to change fonts? Go to the Home tab and choose Fonts. You can use a built-in font combination or select one of your own.

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To change the color or font formatting back to the original settings, go to the Design tab, and select the Theme menu. From there, choose the option to reset the original template theme.

Warm Regards,

Jordan Mitchell CEO



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April 19, 2022

Garrett H. Stephenson

Admitted in Oregon T: 503-796-2893 C: 503-320-3715 gstephenson@schwabe.com

VIA E-MAIL

Ms. Melissa Ahrens Mr. Ben Blessing Clackamas County Planning and Zoning Development Services Building 150 Beavercreek Road Oregon City, Oregon 97045

RE: County File Nos. Z0232-21-ZAP; Applicant's Transportation Planning Rule Response

Dear Mr. Blessing and Ms. Ahrens:

This office represents Jessey Cereghino (the "Applicant") in the above-referenced casefile, for a proposed zone change of property located at the intersection of Highway 213 and Mitchell Street. The purpose of this letter is to provide additional information and evidence demonstrating how the Application satisfies the transportation planning rule (the "TPR") set forth in OAR 660-012-0050.

1. The Applicant's significant effect can be mitigated with a left-turn lane on Highway 213.

In essence, the TPR requires local governments to determine whether a proposed plan, zone, or text amendment would have "significant effect" on the existing or planned transportation system. As explained in the Applicant's completeness response dated November 15, 2021, the Application could have a significant effect on the existing or planned transportation system (Highway 213) by 2036, but it can be adequately mitigated with a left-turn lane on Highway 213. Mike Ard, the Applicant's transportation engineer, offered the following conclusions on this point in his May 20, 2021 traffic impact study:

"In this instance, the southbound approach on Highway 213 is projected to operate with a v/c ratio of 0.78 during the evening peak hour at the 2036 planning horizon. This is above the v/c ratio target of 0.75 established in the Oregon Highway Plan. Accordingly, the intersection is projected not to meet the performance standard identified in the state's Transportation System Plan. Absent appropriate mitigation, the proposed zone change would result in further

Ms. Melissa Ahrens Mr. Ben Blessing April 19, 2022 Page 2

degradation of performance of this approach. Accordingly, the proposed zone change is projected to significantly affect an existing transportation facility.

"As demonstrated in the operational analysis, installation of a southbound left-turn lane on Highway 213 at Mitchell Lane is more than sufficient to offset the impacts of the proposed zone change. This improvement is projected to result in improved operation of the intersection as compared to background traffic conditions at the planning horizon. Accordingly, if this improvement is required as a condition of development the significant affect of the proposed zone change will be fully addressed, and the Transportation Planning Rule will be satisfied. Since the southbound left-turn lane will be warranted under year 2023 traffic conditions, it is recommended that the turn lane be installed prior to occupancy of the proposed residential development. No other mitigation is recommended in conjunction with the proposed zone change."

In addition to the above conclusion, the Oregon Department of Transportation ("ODOT") requested the following:

"In order to comply with the Transportation Planning Rule, the applicant will need to demonstrate constructability of the proposed installation of the left turn lane. As such, the applicant will need to show that the left turn lane can be constructed within the existing public right of way. If additional right of way is needed, the applicant should be required to acquire it as part of the land use decision for the zone change. Therefore, as part of the completeness review ODOT is requesting the County require the applicant to prepare a conceptual design layout of the proposed southbound left turn lane on OR 213 consistent with ODOT's Highway Design Manual. The conceptual layout should clearly identify the existing right of way."

In response to ODOT's request, this letter encloses two concepts. **Exhibit 1** shows a concept left turn channelization at Mitchell Lane. **Exhibit 2** shows a concept channelization at the new access point located north of Mitchell Lane, if additional right-of-way for Mitchell Lane cannot be acquired. Regardless, the enclosed concept plans demonstrate how a left turn lane and intersection meeting ODOT's design standards can be constructed.

OAR 660-012-0065 is not applicable to the Application and the proposed left turn lane on Highway 213. Specifically, OAR 660-012-0065(3)(a)-(o) allows certain transportation improvements on land zoned exclusive farm use that would ordinarily require exceptions to Statewide Planning Goals 3, 4, and 11. See Sepulvado v. Douglas County, 60 Or LUBA 365, 365 (2010); see also Friends of Yamhill County v. Yamhill County, 39 Or LUBA 478, 482 (2001). In addition, OAR-012-0065(5) requires compliance with the requirements of ORS 215.296, which again only applies in exclusive farm use zones. Because the Application includes a request to rezone the subject property from the RR-10 zoning district to the RR-2 zoning district (i.e. not an exclusive farm use zone) without a Goal 14 exception, the requirements of OAR-012-0065 are

Ms. Melissa Ahrens Mr. Ben Blessing April 19, 2022 Page 3

not applicable to the left lane proposed as mitigation. *See Oregon Shores Conservation Coalition v. Curry County*, LUBA Nos. 2006-218 and 2006-219 (2007) (application of such existing zones to other rural areas is not itself subject to a Goal 14 exception requirement).

For the above reasons, the County can find that OAR-012-0065 is not applicable and the Application satisfies the TPR through the process set forth in OAR 660-012-0060(2)(d).

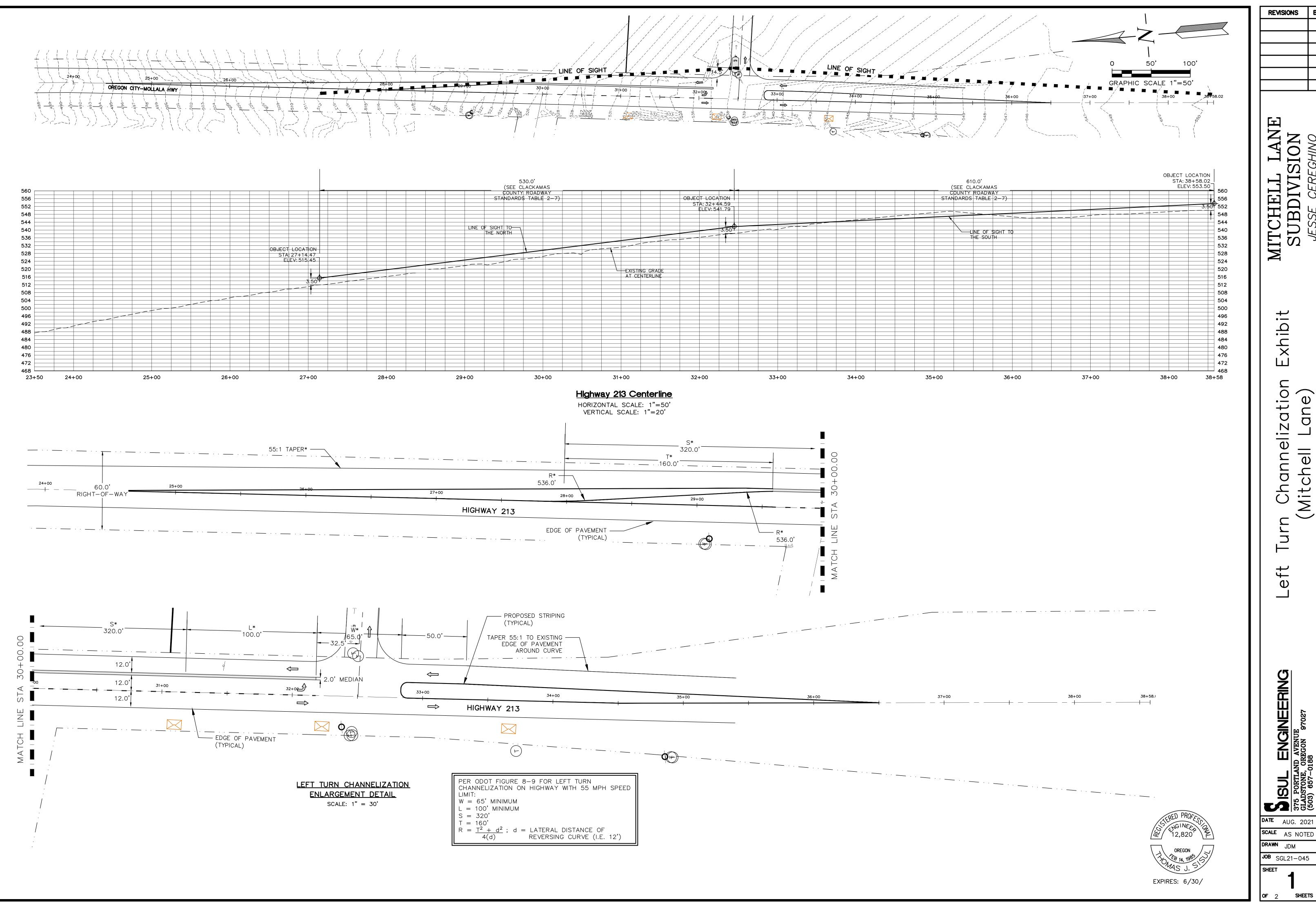
Best regards,

Garrett H. Stephenson

GST/jmhi Enclosures

cc: Mr. Jessey Cereghino (via email) (w/enclosures)

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Appendix N - South System

Exhibit 5 Exhibits Page 527 ALANDA PROPERTY PORT

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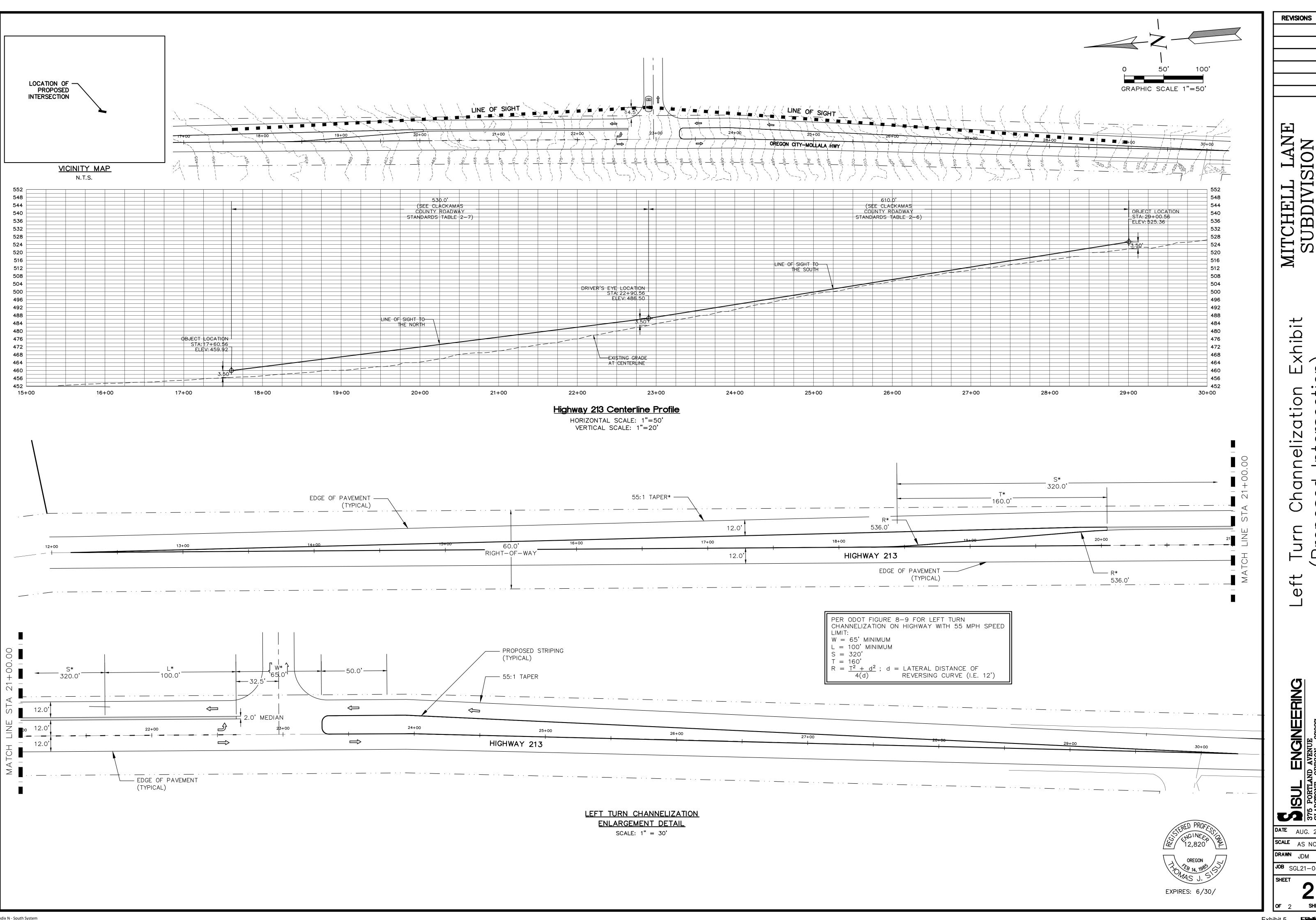


Exhibit 5 Exhibit 5

Page 528 01.20 Page 528 P 6 1 4

ITCHELL LANE SUBDIVISION JESSE CEREGHINO

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L ENGINEERING
TAND AVENUE
E, OREGON 97027

DATE AUG. 2021 SCALE AS NOTED

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