

#### **Community Development Departmen** PO Box 2460 16345 Sixth Street La Pine, Oregon 97739

Phone: (541) 536-1432 Fax: (541) 536-1462 Email: info@lapineoregon.gov

## Lot Line Adjustment Application

PLEASE NOTE: INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

Fee \$500.00	File Number #
□ Adjustment □ Consolidation	
PLEASE NOTE: INCOMPL	ETE APPLICATIONS WILL NOT BE ACCEPTED
Property Owner: Kim and Kathy Russ	ell
Mailing Address: P.O. Box 2505, La P	ine, OR 97739 Phone: 541-420-9658
Subject Property Address:16350 2	2nd Street, La Pine, Oregon 97739
Applicant: Kim and Kathy Russell	
Address: P.O. Box 2505, La Pine, OF	R 97739 Phone: 541-420-9658
Email:krussell141@gmail.com	
Property Description: T-15 R-1 Sec	etion <u>22-10-15 AA</u> Tax Lots <u>903</u>
Reason for Adjustment: To consolidate lot of record	te Lots 8 and 9, Block 17, La Pine into one legal for the placement of a manufactured home
Adjoining Prope	erty involved in Lot Line Adjustment
Property Owner: Kim and Kathy F	Russell
	OR 97739 Phone: 541-420-9658
Email: krussell141@gmail.com	
Subject Property Address: 16350 2n	d Street
Property Description: T-15 R-13 Se	



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Applicant's Property - Tax Lot Lot 8	Adjoining Property - Tax Lot Lot 9
Present Zoning: TC - Traditional Commercial	TC - Traditional Commercial
Present Square footage:5,001 SF	5,001 SF
Sq. Ft. After Adjustment: 10,002 SF	0.00 SF
Applicant/Owner:   Signature	Date: <u>X 39-27</u>
Adjoining	
Property Owner: X Signature	Date: X3-8-27
If you are the authorized agent, please attach a	letter signed by the owner.
FOR OFFICE USE ONLY	
Date Received: 03/27/2023  Rec'd By: Amanda Metcalf  Date App. Complete:  Date of Notice:  Fee Paid: \$500.00	
Receipt #: _9.000447	



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#### LOT LINE ADJUSTMENT

#### WHAT IS A LOT LINE ADJUSTMENT?

A lot line adjustment is a change to a property boundary that only modifies existing lots and does not create a new parcel or lot.

#### WHAT ARE THE STANDARDS?

- A lot line adjustment cannot create a new parcel. Creation of a new parcel requires approval
  of a land division.
- o Following the lot line adjustment, all lots must comply with minimum lot size and dimensional standards of the applicable zone.
- If there are existing structures on the parcels, the lot line adjustment may not result in a setback violation.
- All lots must comply with access and frontage standards.

#### WHAT IS THE REVIEW PROCESS?

A lot line adjustment is subject to administrative review and decision. After approval, the lot line adjustment becomes effective only after a metes and bounds legal description of the adjusted lots is recorded by the applicant with the Deschutes County Clerks Office.

#### WHAT ARE SUBMITTAL REQUIREMENTS?

The following information and material must be submitted to the City by the applicant. Other information may be required in some cases.

Application and Fee. The application must be signed by the property owners of all lots affected by the application. Please see the attached fee schedule for the fee required by the City for the processing of a Lot Line Adjustment. Additionally, fees are required by Deschutes County for recording the lot line adjustment.



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	Preliminary Plan. Five (5) copies of the preliminary plan drawn to scale which must be folded
	individually, or in sets to 8 ½" X 11" in size and a copy of the plan on a CD.
	Title report or other documentation of ownership for <u>each</u> affected property.
	Location by Section, Township and Range, and a legal description sufficient to define the
	location and boundaries of the lot line adjustment.
	Names, addresses and phone numbers of the owner(s) of the property, designer of the
	preliminary plan, surveyor (if applicable) and the date of plan preparation.
	Streets, existing: Locations, names and right-of-way widths of all public and private streets
	adjacent to the subject tract.
	Access: Location and width of existing or proposed access points.
	Utilities: Location of existing public and private storm drains, sanitary sewer, water lines on or
	abutting the tract, and any irrigation ditches or easements.
	Lot Dimensions: All existing and proposed lot lines, their length (in feet) and bearing (in
	degrees, minutes and seconds).
	Lot size: All existing and proposed lot sizes in either square feet or acres.
	Easements: Locations, widths, and purposes of all existing and proposed easements on and
	abutting the tract(s).
	Existing Uses: Scaled location and present use of all structures.
-	E: Approval of a lot line adjustment expires within two years if not recorded with hutes County.]



# PO Box 2460 16345 Sixth Street La Pine, Oregon 97739

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## **Conditional Use Application**

PLEASE NOTE: INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED  Fee:See Current Fee Schedule File Number #				
PROPERTY OWNER AND APPLICANT INFORMATION				
Applicant Name Kim and Kathy Russell Phone 541-420-9658 Fax none				
Address P.O. Box 2505 City La Pine State OR Zip Code 97739				
Email krussell141@gmail.com				
Property Owner Kim and Kathy Russell Phone 541-420-6958 Fax none				
Address P.O. Box 2505 City La Pine State OR Zip Code 97739				
Emailkrussell141@gmail.com				
PROPERTY DESCRIPTION				
Property Location (address, intersection of cross street, general area)  Corner of 2nd Street and Salzer Street in the Southwest area of La Pine				
Legal Description – T-15 R-13 Section Tax Lot(s) 22-10-15 AA tax lot 903				
Present ZoningTC Total Land Area10,002 SF _(Square Ft.)0.23 AC _ (Acres)				
Present Land UseTemporary storage of mfg home				



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### PROJECT DESCRIPTION

Describe Project (explain in deta	ail your propos	al i.e. operat	ing characteristi	cs, hours of operation,
loading times, etc.):				
Applicant is seeking a control of the Property Line Adjustment on a property zoned TC	nt (consolidatio	n) to place a		
	PROFESS	g &		
Architect/Designer/Engineer	Surveying, Inc.	Phone	541-389-6959	_ Faxnone
Address 725 NW Hill Street			State OR	Zip Code <u>97703</u>
Email Pam Tennant; ptennar	nt@tyeenginee	ring.com		
FOR OFFICE USE ONLY				
Date Received: <u>03/27/2023</u>				
Rec'd By: <u>Amanda Metcalf</u>	_			
Fee Paid: <u>\$1500.00</u>	_			
Receipt #: 9.000447	_			



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#### SUBMITTAL REQUIREMENTS

#### REQUIRED ITEMS TO BE SUBMITTED FOR CONDITIONAL USE PERMIT REVIEW.

Note: additional information may be required depending on the actual project.

- o Application. The application must be completed and signed by the property owner and include information requested on the application form.
- o Title report or subdivision guarantee, including legal description of property.
- o Fee Paid
- Site plan, 7 copies, which must be folded individually, or in sets to 8 ½" X 11" in size, 1 reduced copy of site plan (8 ½ x 11 or 11x17)
- Burden of Proof written statement addressing applicable conditional use criteria, and the proposed use including hours of operation, number of employees, anticipated traffic generation and so forth.
- Electronic Copy of the Site Plan and Burden of Proof on a CD.

#### Other information may be required depending on the individual project request.

Burden of Proof Statement Criteria. Conditional use decisions are reviewed based in part on three criteria that the applicant must address, as follows:

- 1. The proposed use will be consistent with the Comprehensive Plan, the zoning ordinances and other applicable ordinances and standards of the City.
- 2. The location, size, design, and operating characteristics of the proposed use will have minimal adverse impact on the livability, value, or approximate development of abutting properties



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and the surrounding area.

- 3. The proposed use will not exceed operational capacity of City infrastructure including sewage system, water system or the transportation system.
- That the proposed use will not conflict with, diminish, or substantially adversely affect the 4. character and nature of the established neighborhood in which it is located.

By signing this application, the undersigned certifies that he / she has read and understands the submittal requirements stated above. Please note: submission of false or misleading information could lead to the denial of this application request.

Date: <u>/</u> 3-8- みろ Signature Date: / 3-8-27 Signature

Please note: additional information may be required by the Planning Division prior to the application being deemed complete. Additional information may include a Fire Flow Analysis prepared by a professional engineer, and a drainage plan, also prepared by a professional engineer.



397 SW Upper Terrace Dr., Bend, OR 97702 Phone: 541-389-2120 Fax: 541-389-2180

#### PAR

#### Issued by DESCHUTES COUNTY TITLE COMPANY (the Company)

Title Officer: Scott Graupensperger

Fee: \$300.00

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Effective Date: March 07, 2023

Order: DE19160

Re Your:

THIS REPORT IS BASED ON THE COMPANY'S PROPERTY RECORDS AND NO LIABILITY IS ASSUMED FOR ITEMS MISINDEXED OR NOT INDEXED IN THE PUBLIC RECORDS OR FOR MATTERS WHICH WOULD BE DISCLOSED BY AN INQUIRY OF PARTIES IN POSSESSION OR BY AN ACCURATE SURVEY OR INSPECTION OF THE PREMISES. THIS REPORT AND THE LEGAL DESCRIPTION GIVEN HEREIN ARE BASED UPON INFORMATION SUPPLIED BY THE APPLICANT AS TO THE LOCATION AND IDENTIFICATION OF THE PREMISE IN QUESTION, AND NO LIABILITY IS ASSUMED FOR ANY DISCREPANCIES RESULTING THEREFROM. THIS REPORT DOES NOT REPRESENT EITHER A COMMITMENT TO INSURE TITLE, AN EXAMINATION OF, OR OPINION AS TO, THE SUFFICIENCY OR EFFECT OF THE MATTERS SHOWN, OR AN OPINION AS TO THE MARKETABILITY OF TITLE TO THE SUBJECT PREMISES.

THE COMPANY'S LIABILITY IS LIMITED TO THE AMOUNT CHARGED FOR THIS REPORT.

Fee Simple Title to this Real Property referenced below is vested in:

#### KIM RUSSELL and KATHARINE J. RUSSELL

The land referred to in the Report is situated in the County of Deschutes, State of Oregon, and is more fully described as follows:

The South Half of Lot 4 and all of Lots 5, 6, 7, 8 and 9 in Block 17 of LA PINE, as recorded in Cabinet A of Plats, Page 55, Records of Deschutes County, Oregon.

Said property is subject to the matters shown below, which items are not necessarily shown in the order of their priority. SPECIFIC MATTERS:

1. Real Property Taxes levied by Deschutes County, including interest, penalty and statutory foreclosure costs and special assessments, if any, after delinquency:

Year:

2022-2023

Full Amount:

\$1,554,70

Amount Owing:

\$1,554.70

Account No.:

201305

Map and Taxlot No.:

221015AA00900

Note: Inquiries may be directed to: Deschutes County Treasurer--541-388-6540

For further information please visit https://www.deschutes.org/finance/page/property-tax-collection

AFFECTS A PORTION OF LOT 4 AND ALL OF LOT 5

2. Real Property Taxes levied by Deschutes County, including interest, penalty and statutory foreclosure costs and special assessments, if any, after delinquency:

Year: 2022-2023 Full Amount: \$79.19 Amount Owing: \$79.19 Account No.: 252786

Map and Taxlot No.: 221015AA00901

Note: Inquiries may be directed to: Deschutes County Treasurer--541-388-6540

For further information please visit https://www.deschutes.org/finance/page/property-tax-collection

#### **AFFECTS LOT 6**

3. Real Property Taxes levied by Deschutes County, including interest, penalty and statutory foreclosure costs and special assessments, if any, after delinquency:

Year: 2022-2023 Full Amount: \$79.19 Amount Owing: \$79.19 Account No.: 252787

Map and Taxlot No.: 221015AA00902

Note: Inquiries may be directed to: Deschutes County Treasurer--541-388-6540

For further information please visit https://www.deschutes.org/finance/page/property-tax-collection

#### **AFFECTS LOT 7**

4. Real Property Taxes levied by Deschutes County, including interest, penalty and statutory foreclosure costs and special assessments, if any, after delinquency:

Year: 2022-2023 Full Amount: \$154.91 Amount Owing: \$154.91 Account No.: 252788

Map and Taxlot No.: 221015AA00903

Note: Inquiries may be directed to: Deschutes County Treasurer--541-388-6540

For further information please visit https://www.deschutes.org/finance/page/property-tax-collection

#### **AFFECTS LOTS 8 AND 9**

Grantor:

5. Any unpaid assessments or charges, and liability for future assessments or charges, by the CITY OF LA PINE. No inquiry has been made as to the status of said charges or assessments, if any. Investigation as to the status of assessments, if any can be made by faxing a request for information to the City of La Pine at 541-536-1462.

\*It is our understanding that charges, per request, may apply.

6. Deed of Trust Securing a Line of Credit and the terms and conditions thereof:

Kim Russell and Katharine J. Russell Trustee: Mid Oregon Credit Union

Mid Oregon Federal Credit Union Beneficiary:

Original Amount: \$160,000.00 Dated: September 15, 2022 Recorded: September 20, 2022

Book - Page: 2022-34964

NOTE: In order to remove the lien from the subject property, it must be paid in full and the line of credit closed out.

#### AFFECTS A PORTION OF LOT 4 AND ALL OF LOTS 5 AND 6

DE19160

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- 7. Regulations, including levies, assessments, water, and irrigation rights and easements for ditches and canals of LA PINE SPECIAL SEWER DISTRICT.
- 8. All covenants, conditions, restrictions, easements, or other servitudes, if any, as disclosed by the recorded plat of <u>LA PINE</u>.
- 9. Easement and the terms and conditions thereof:

Grantee: La Pine Special Sewer District

Purpose: Sewer system
Recorded: May 9, 1988
Book - Page: 163-1035

Area affected: Affects a portion of said premises

10. Easement and the terms and conditions thereof:

Grantee: Midstate Electric Cooperative, Inc.
Purpose: Electrical transmission and distribution

Recorded: May 30, 2001 Book - Page: 2001-25312

Area affected: Affects Lots 5 through 9

**END OF SPECIFIC MATTERS** 

SG:SL

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DE19160 3

#### NOTES:

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a. To view documents mentioned in this report, you can click on the blue hyperlink and the image of that document will appear. To view our Underwriter's Privacy Policy, please click on this link: <a href="http://www.deschutescountytitle.com/privacy-policy-2/">http://www.deschutescountytitle.com/privacy-policy-2/</a>

If for some reason the image is not available, or you do not have access to a computer, please request a copy from the Title Officer identified on the top left of the first page of this report.

b. According to the County Tax Assessor's records, the address of said property is:

16350 2nd Street, La Pine, OR 97739

**END OF NOTES** 

DESCHUTES COUNTY TITLE COMPANY

Authorized Signature

#### **NARRATIVE**

#### PROPERTY LINE ADJUSTMENT (CONSOLIDATION) AND

#### CONDITIONAL USE PERMIT FOR MANUFACTURED HOME IN TRADITIONAL COMMERCIAL ZONE

**DATE: MARCH 6 2023** 

OWNER AND APPLICANT: KIM & KATHY RUSSELL P.O. BOX 2505 LA PINE, OREGON 97739

**SURVEYING:** 

TYE ENGINEERING & SURVEYING, INC. 725 NW HILL STREET BEND, OREGON 97703

REQUEST: The applicant has submitted a permit for a manufactured home, file no. 247-22-005511-MD. The applicant is requesting approval to consolidate Lots 8 and 9, Block 17, La Pine and a Conditional use permit for a manufactured home in the traditional commercial zone to fulfill requirements for the manufactured home permit.

PROPERTY: The subject property is Lots 8 and 9, Block 17, La Pine and has been assigned tax lot 903 on tax assessors map 221015AA. The property is located at 16350 2nd Street, La Pine, Oregon, 97739.

ZONING: The subject property is currently zoned TC – Traditional Commercial Zone and also on the comprehensive plan.

#### **PROPERTY DESCRIPTION:**

The subject property is located at the corner of 2nd Street and Salzer Street in the Southwest area of the City of La Pine. Properties to the north, east and southeast are developed with residential homes. To the west is an area in the flood plain as shown on the attached FEMA firmette. Although a portion of the subject property is shown to be in the flood plain a flood survey was prepared by Tye Engineering in July 2006 showing the property is located outside of the flood plain. The study is included with this application.

LEGAL LOT OF RECORD: The subject property lots were legally created in the subdivision plat of La Pine.

#### **Chapter 15.22 – Commercial and Mixed-Use Zones**

15.22.100 Purpose

Chapter 15.22 regulates allowed land uses ("uses") and sets forth lot and development standards, including minimum dimensions, area, density, coverage, structure height, and other provisions that control the intensity, scale, and location of development in the commercial and mixed-use zones. The regulations of this chapter are intended to implement the City Comprehensive Plan.

#### 15.22.200 Characteristics of the Commercial and Mixed-Use Zones

Commercial zones accommodate a mix of commercial services, retail, and civic uses, along with residential uses permitted in some circumstances. Four commercial zones provide for the full range of commercial land uses within the city. The zoning district regulations are intended to promote the orderly development and improvement of walkable commercial areas; facilitate compatibility between dissimilar land uses; provide employment opportunities in proximity, and with direct connections, to housing; and to ensure efficient use of land and public facilities.

A. Traditional Commercial Zone (C). The C zone allows the widest range of commercial uses and limits residential uses in order to preserve land for commercial needs and maintain compatibility between adjacent uses. A portion of the C zone is located in the Downtown La Pine Overlay Zone. The overlay zone restricts some uses and establishes additional design standards to facilitate the development of a pedestrian-oriented downtown area.

RESPONSE: The applicant is seeking approval for the placement of a residential use manufactured home in the Traditional Commercial zone. The adjacent properties to the north, south and east are developed with single family residences. Several new residential duplexes have been constructed in 2021 northeast of the subject property. The applicants request is consistent with the adjacent uses.

#### 15.22.300 Regulations

Uses may be designated as Permitted, Limited, Conditional, or Prohibited in the commercial and mixed-use zones. As noted in Table 15.22-1, a use may also be subject to Special Use Standards of Article 6.

C. Conditional Uses (CU). Uses which are allowed if approved through the conditional use review process are listed in Table 15.22-1 with a "CU". These uses are allowed provided they comply with the conditional use requirements of Chapter 15.316, Conditional Uses. Uses listed with a "CU" that also have a footnote number in the table are subject to the regulations cited in the footnote. City of La Pine Development Code (LPDC) Draft 2 Last Update: 092518 Article 3. Zoning Regulations 3-13

RESPONSE: As noted in Table 15.22-1, a manufactured residential dwelling is permitted with an approved conditional use permit in the traditional commercial zone.

#### 15.22.400 Development Standards

A. Purpose. The development standards for commercial and mixed-use zones allow development flexibility, within parameters, that supports the intended characteristics of the specific zone. In addition, the regulations provide guidance to property owners, developers, and neighbors about the limits of what is allowed

B. Development Standards. The development standards for commercial and mixed-use zones are presented in Table 15.22-2. Development standards may be modified as provided by Chapter 15.320, Variances. Additional standards may apply to specific zones or uses, see Section 15.22.500.

RESPONSE: Table 15.22-2 notes the traditional commercial zone has no minimum lot width, a front yard setback of 20 feet, no side yard or rear yard setbacks, maximum building height of 70 feet and 80% maximum lot coverage. The proposed manufactured home will setback just over 21 feet from Salzer Street meeting the front setback criteria. The proposed manufactured home has a proposed height of 14 feet well within the maximum 70 foot building height. The proposed manufactured home will cover 11% of the lot meeting the maximum lot coverage of 80%.

#### **CHAPTER 15.316. - CONDITIONAL USES**

#### Sec. 15.316.010. - Applicability.

Conditional uses may be permitted, enlarged or otherwise altered when authorized in accordance with the standards and procedures set forth in this chapter. In the case of a use listed as conditional existing prior to the effective date of this Development Code, a change in use, enlargement or alteration of such use shall conform with the provisions of a conditional use if so classified. Any new or transferred owner or assign is required to abide by the authorized permit. An application for a conditional use permit may be approved, modified, approved with conditions or denied by the city.

RESPONSE: The applicant is requesting a conditional use to place a new residential manufactured home on property zoned TC- traditional commercial which is permitted with a conditional use application and is not a prior use.

### Sec. 15.316.020. - Procedure type.

Applications for conditional use approval are subject to Type II review in accordance with the procedures in <u>article 7</u> unless elevated by the city planning official to a Type III review.

RESPONSE: The applicant requests that this conditional use approval be reviewed as a type II review.

### Sec. 15.316.030. - Submittal requirements.

Applications for conditional use approval, if not submitted concurrently with an application for site plan review, shall, at a minimum, include the materials required for a Type II review as specified in <a href="article7">article 7</a> as well as a site analysis diagram (see 15.312.040.B) and a site development plan (see 15.312.040.D). An application for a conditional use permit shall also contain a narrative report or letter responding to the applicable approval criteria in <a href="section 15.316.040">section 15.316.040</a>. The city may require studies or exhibits prepared by qualified professionals to address specific site features or project impacts (e.g., traffic, noise, environmental features, natural hazards, etc.), as necessary to determine a proposal's conformance with this Development Code.

RESPONSE: The applicant has included with this narrative, an application map depicting the location for the manufactured home, dimensions to property lines, existing and proposed utilities and other features as noted in this section for a Type II review.

#### Sec. 15.316.040. - Approval criteria.

In determining whether or not a conditional use proposal shall be approved or denied, it shall be determined that the following criteria are either met or can be met through compliance with specific conditions of approval:

- A. The proposal is in compliance with the requirements set forth by the applicable primary zone, by any applicable overlay zone, and other provisions set forth by this Development Code that are determined applicable to the subject use.
- B. That, for a proposal requiring approvals or permits from other local, state and/or federal agencies, evidence of the approval or permit compliance is established or can be assured prior to final approval.
- C. The proposal is in compliance with specific standards, conditions and limitations set forth for the subject use in the applicable zone, this section and this Development Code.
- D. That no approval be granted for any use which is or [is] expected to be found to exceed resource or public facility carrying capacities, including, but not limited to, transportation water, sewer, and utility systems.
- E. For any use which is found to require compliance with air, water, land, solid waste and/or noise pollution standards, that the compliance be a condition of approval and compliance therewith shall be a continuing condition.

RESPONSE: This application for the placement of a residential manufactuted home is an approved use with a conditional use application. This proposal meets the requirements set forth in the traditional commercial zone and development codes. The applicant understands that any additional approvals or permits may be made a condition of approval. The new manufactured home will not exceed the capacity for utilities. There is an existing 6" waterline in Salzer Street and in 2nd Street. The applicant proposes to connect to the existing 6" waterline in Salzer. There is also a sewer main located in the alley approximately 107 feet north of the property. Salzer and 2nd Street are unimproved roads. Access will be via existing dirt road from Salzer but also may access via dirt road off of 2nd Street.

### Sec. 15.316.050. - Permit and improvements assurance.

An applicant for a conditional use permit may be required to furnish the city with a performance bond or other form of assurance in an amount equal to the estimated value of required improvements and other aspects of a proposed use as deemed necessary to guarantee development in compliance with the standards and conditions set forth in the approval of a conditional use.

RESPONSE: This application understands the it may be required to furnish the city with a performance bond or similar if deemed necessary for the development to be in compliance with applicable codes.

#### Sec. 15.204.020. - Type II procedure (administrative review with notice).

The planning official performs administrative staff reviews through the Type II procedure. Type II decisions are made by the planning official with public notice and an opportunity for appeal to the planning commission. Alternatively, the planning official may refer a Type II application to the planning commission for its review and decision in a public meeting.

#### A. Application requirements.

- 1. Application forms. Applications for projects requiring administrative review shall be made on forms provided by the planning official.
- 2. Submittal information. The planning official shall advise the applicant on application submittal requirements. At a minimum, the application shall include all of the following information:
  - a. The information requested on the application form;
  - b. Plans and exhibits required for the specific approval(s) being sought;
- c. A written statement or letter explaining how the application satisfies each and all of the relevant criteria and standards in sufficient detail;
- d. Information demonstrating compliance with prior decision(s) and conditions of approval for the subject site, as applicable; and
  - e. The required fee.

# RESPONSE: This applicant has submitted the above described materials along with the required fee.

- B. Notice of pending administrative decision (notice of application).
  - 1. The purpose of the notice of pending administrative decision is to give nearby property owners and other interested people and agencies the opportunity to submit written comments on the application before the planning official issues the decision. Within ten days of receipt of a complete application for a Type II land use action, the planning official shall mail notice of a pending Type II decision to the individuals and agencies [listed in paragraph 3 of this subsection B].
  - 2. The comment period shall be at least 14 days duration from the date notice was mailed or a longer [period] as specified in the notice. The deadline for submitting written comments must be at least 14 days prior to the scheduled decision date or, as applicable, the scheduled planning commission meeting date where an application is referred to the commission for review.
  - 3. All of the following individuals and agencies shall be notified. However, the failure of a property owner to receive mailed notice shall not invalidate any land use approval if the planning official can show by affidavit that such notice was given.
  - a. The applicant;
- b. Owners of record of property as shown on the most recent property tax assessment roll of property located within 100 feet of the property that is the subject of the notice where any part of the subject property is within an urban growth boundary;

- c. The owner of a public use airport if the airport is located within 10,000 feet of the subject property;
- e. [d.] The planning commission;
- f. [e.] Any neighborhood or community organization formally recognized by the city council, whose boundaries include the site;
- g. [f.] Any person who submits a written request to receive a notice; and
- h. [g.] Any governmental agency that is entitled to notice under an intergovernmental agreement entered into with the city and any other affected agencies. At a minimum, the city planning official shall notify the road authority if different than the City of La Pine. The failure of another agency to respond with written comments on a pending application shall not invalidate an action or permit approval made by the city under this Development Code.

RESPONSE: This applicant understands the proposed Type II application will be sent to the above noted entities and that if any comments are submitted it shall be done within the comment period.

- 3. [4.] The notice of pending administrative decision, at a minimum, shall contain all of the following information:
  - a. The deadline for submitting written comments, which must be at least 14 days prior to the scheduled decision date or, as applicable, the scheduled planning commission meeting date where an application is referred to the commission for review;
  - b. A summary of the proposal and the relevant approval criteria in sufficient detail to help the public identify and locate applicable Development Code requirements;
  - The address and city contact person for submitting written comments; and the date, time, and location the city planning official or planning commission, as applicable, is scheduled to make a decision on the application;
  - d. The street address or other easily understandable reference to the location of the proposed use or development;
  - e. Disclosure statement indicating that if any person fails to address the relevant approval criteria with enough detail, he or she may not be able to appeal to the land use board of appeals or circuit court on that issue, and that only comments on the relevant approval criteria are considered relevant evidence;
  - f. Statement that all evidence relied upon by the city planning official or planning commission, as applicable, to make its decision is in the record and is available for public review. Copies of this evidence can be obtained at a reasonable cost from the city; and
  - g. Statement that after the comment period closes, the city will issue its decision and the decision shall be mailed to the applicant and to anyone else who submitted written comments or who is otherwise legally entitled to notice.

RESPONSE: This applicant understands that any pending administrative decision shall contain the above information.

#### C. Decision.

1. At the conclusion of the comment period, the city planning official shall review the comments received and prepare a decision notice approving, approving with conditions, or denying the application based on the applicable Development Code criteria. Alternatively, the city planning official may transmit all written comments received, if any, along with a copy of

the application to the planning commission for review and decision at its next regularly scheduled meeting.

2. Where the city planning official refers an application subject to administrative review to the planning commission, the planning commission shall approve, approve with conditions, or deny the application through the Type II procedure based on the applicable Development Code criteria. The planning commission may continue its review to the next meeting to allow the applicant time to respond to questions, provided that the commission makes a final decision within the time period prescribed under state law (ORS 227.178) and as described in section 15.202.020 of this Development Code. Alternatively, the applicant may voluntarily waive his or her right to a final decision within the required timeframe and the commission may decide to accept oral and written testimony in a public hearing review of the application, pursuant to section 15.204.030; in which case, a new public notice must be mailed to those who received the original notice indicating the change to a quasi-judicial (public hearing) review procedure.

# RESPONSE: This applicant understands the above decision process and conditions and shall make a response to any questions or additional information needed.

- D. Notice of decision.
  - 1. Within seven days of a Type II decision, the city planning official shall prepare a notice of decision and mail it to the applicant, property owner (if different), the building official, those who provided written comments on the proposal, and those who requested a copy of the decision. If the decision is not a limited land use decision as defined in ORS 197.015(12), notice shall also be sent to all persons entitled to notice under subsection B.
  - 2. The city planning official shall cause an affidavit of mailing the notice to be prepared and made a part of the file. The affidavit shall show the date the notice was mailed and shall demonstrate that the notice was mailed to the parties above and was mailed within the time required by law.
  - 3. The administrative notice of decision shall contain all of the following information:
    - a. A description of the applicant's proposal and the city's decision on the proposal, which may be a summary, provided it references the specifics of the proposal and conditions of approval in the record;
    - b. The address or other geographic description of the property proposed for development, including a map of the property in relation to the surrounding area (a copy of assessor's map may be used);
    - c. A statement of where the city's decision can be obtained;
    - d. The date the decision shall become final, unless appealed; and
    - e. A statement that all persons entitled to notice may appeal the decision to city council pursuant to subsection F.

- E. Effective date of decision. Unless the conditions of approval specify otherwise, an administrative decision becomes effective 12 days after the city mails the decision notice, unless the decision is appealed pursuant to subsection F or the decision is called up for review by the city council pursuant to subsection G. No building permit shall be issued until a decision is final. Appeal of a final decision to LUBA does not affect the finality of a decision at the local level for purposes of issuing building permits.
- F. Appeal of Type II (administrative) decision.
- 1. Who may appeal. The following people have legal standing to appeal a Type II administrative decision:
  - a. The applicant or owner of the subject property;
  - b. Any person who was entitled to written notice of the Type II decision; and
  - c. Any other person who participated in the proceeding by submitting written comments on the application to the city by the specified deadline.
  - 2. Appeal filing procedure. Appeals shall be filed in accordance with chapter 15.212.

#### G. Review by council.

- 1. Review of an administrative action or a planning commission decision may be initiated by the city council. The council shall consider calling up for review any administrative decision that a majority of the planning commission recommends be reviewed.
- 2. Review by the council shall be initiated by council order within 12 days of the date of the mailing of the final written decision of the planning official or planning commission.
- 3. Review shall be conducted in the same manner provided for in appeals, except that an appeal fee and transcript shall not be required. Any council order calling up for review a decision shall specify whether the council will review the decision called up on the record or de novo, and whether it intends to limit the issues on review to certain specified issues.

RESPONSE: This applicant understands the notice of decision shall be mailed out to the various owners and agencies and that in shall include the above noted materials and information. It is also understood that people listed above have the right to appeal and that the review may be initiated by the city council.

### Sec. 15.414.020. Boundary line adjustments.

A. Submission requirements. All applications for boundary line adjustment shall be made on forms provided by the city and shall include information required for a Type I review, pursuant to article 7. The application shall include a preliminary lot line map drawn to scale identifying all existing and proposed lot lines and dimensions, footprints and dimensions of existing structures (including accessory structures), location and dimensions of driveways and public and private streets within or abutting the subject lots, location of lands subject to the flood plain overlay or other overlay zones, existing fences and walls, and any other information deemed necessary by the planning official for ensuring compliance with city codes. The application shall be signed by all of the owners as appearing on the deeds of the subject lots.

RESPONSE: the applicant is submitting with this narrative the necessary forms for the property line adjustment (consolidation), map with various features and dimensions and necessary fee.

- B. Approval criteria. The planning official shall approve or deny a request for a property line adjustment in writing, based on all of the following criteria:
  - 1. Parcel creation. No additional parcel or lot is created by the lot line adjustment;
  - 2. Lot standards. All lots and parcels conform to the applicable lot standards of the zoning district (article 3), including lot area, dimensions, setbacks, and coverage. As applicable, all lots and parcels shall conform the flood plain overlay or other applicable overlay zones (article 4); and
  - 3. Access and road authority standards. All lots and parcels conform to the standards or requirements of article 5 [chapter 15.88], access and circulation, and all applicable road authority requirements are met. If a lot is non-conforming to any city or road authority standard, it shall not be made less conforming by the boundary line adjustment.

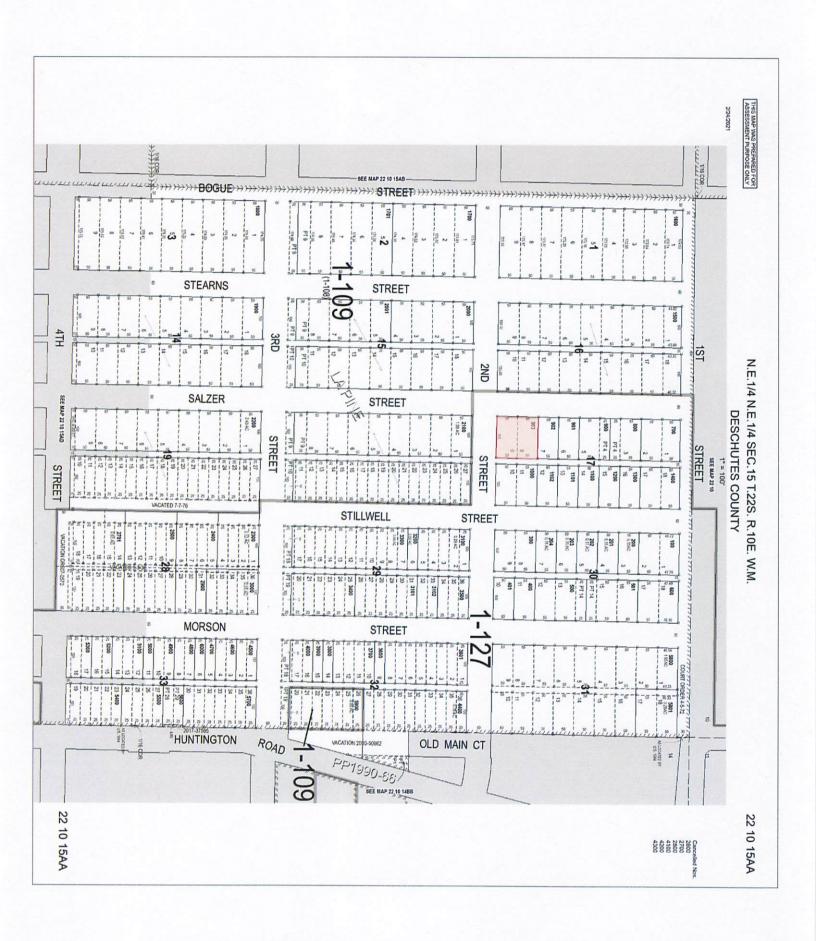
RESPONSE: This applicant is proposing to consolidate Lots 8 and 9, Block 17, La Pine into one legal lot of record. No additional parcel is being created. The consolidated parcel will meet the standards for the existing zone and conforms to the standards and requirements of this chapter.

#### Sec. 15.414.030. Final map recordation - boundary line adjustment.

- A. The final map for a boundary line adjustment survey shall comply with the requirements of ORS 92 and 209. The original plat shall be prepared at a scale and in a format as specified on the application form.
- B. The original plat and an exact copy shall be submitted to and approved by the planning official. The approval shall be evidenced by signature on both the original and exact copy.
- C. The original plat and exact copy shall be submitted along with the appropriate recording fee to the county surveyor for recording into the county survey records.
- D. The original plat and exact copy shall then be submitted along with the appropriate recording fee to the county clerk for recording into the county clerk's records.
- E. After recording information is placed on the exact copy by the county clerk, the exact copy and the required number of points, a minimum of six copies, unless otherwise specified by the county surveyor at the time of survey recording, shall then be submitted to the county surveyor to complete the recording process.
- F. After recording information is placed on the exact copy, a minimum of three copies shall then be submitted to the planning official, together with an electronic copy in a format approved by the City of La Pine.

RESPONSE: Upon approval from the City of La Pine a survey of the subject parcels will be submitted and recorded with the Deschutes County surveyor's office and a new deed perfecting the consolidation will be recorded with the Deschutes County clerks office.

The recorded map and deed will contain the information and requirements as noted in the section and copies of the final documents will be submitted to the City of La Pine.



### National Flood Hazard Layer FIRMette

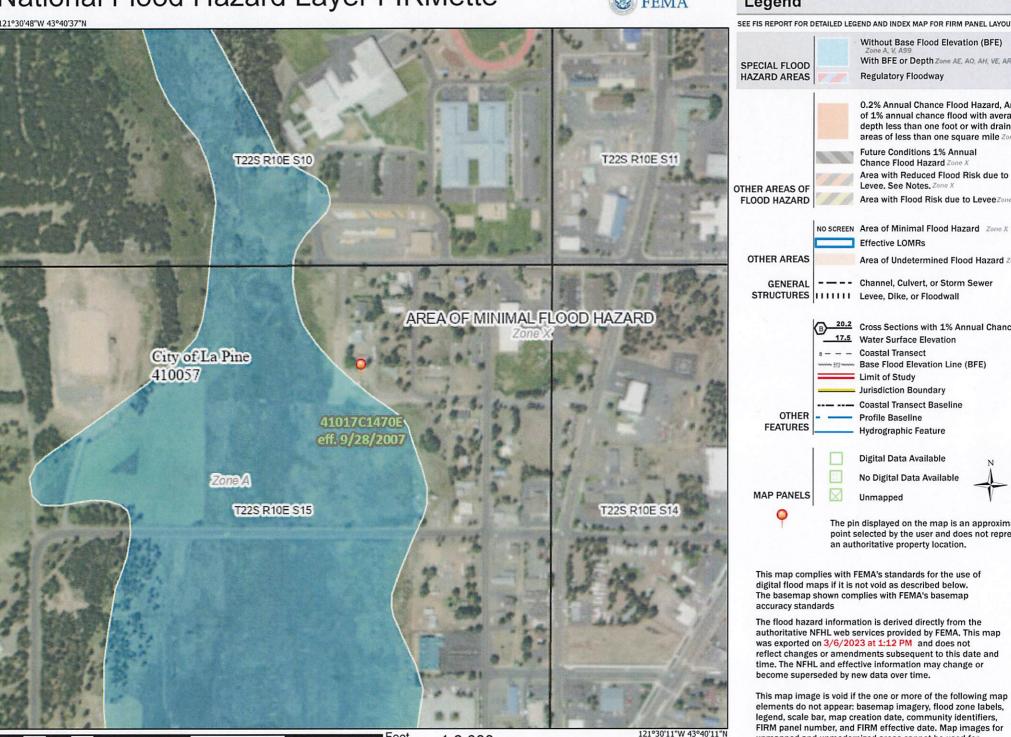
250

500

1,000

1,500





Feet

2,000

1:6,000

#### Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

With BFE or Depth Zone AE, AO, AH, VE, AR Regulatory Floodway 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone > **Future Conditions 1% Annual** Chance Flood Hazard Zone X

Area with Flood Risk due to LeveeZone D

Area of Undetermined Flood Hazard Zone

- - - Channel, Culvert, or Storm Sewer

Cross Sections with 1% Annual Chance 17.5 Water Surface Elevation Base Flood Elevation Line (BFE) Jurisdiction Boundary **Coastal Transect Baseline** Hydrographic Feature

No Digital Data Available

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/6/2023 at 1:12 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



### TYE ENGINEERING & SURVEYING, INC.

725 NW Hill, Bend, Oregon 97701 • (541) 389-6959 • Fax (541) 385-1341 email: tyeengr@bendcable.com webpage: tyeengineering.com

## DOCUMENTATION OF THE BASE FLOOD ELEVATION

AT 51572 SALZER STREET

LA PINE, OREGON

**JULY 2006** 

Tye Engineering and Surveying, Inc. Project No. 1499

Using the Federal Emergency Management Agency Guidance Document – Engineering Methods for estimating Base Flood Elevations

Tye Engineering & Surveying Inc. M:\MSWord\1499\bfe Title Page.doc

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## BASE FLOOD ELEVATION AT 51572 SALZER STREET, LA PINE, OREGON JUNE 2006

#### **LOT DESCRIPTION**

The lot is situated in the NE ¼ of the NE ¼ of Section 15, Township 22 South, Range 10 East of the Willamette Meridian in Deschutes County Oregon. The lot is 10,000 square feet or 0.23 acres and is further described as Lot 9, Block 17, La Pine Subdivision, Deschutes County, Oregon. The Lot is in THE La Pine Residential Zone and Zoned RM. The intended use of the site is for Multi-Family Dwelling Units.

#### CALCULATION OF DISCHARGE

The procedure used to calculate discharge was use of the most recent flood flow frequency analysis developed by the United States Geological Survey (USGS) Water Resource Investigations Report 94-4002 using Regression Equations. This document is attached in Appendix A.

The appropriate calculation based on the flood frequency region map is as follows:

$$Q100 = 0.00863 * A^0.69 * P^0.35 * TI^2.86$$

Where:

Q100 = the 100-year discharge
A= The Drainage Area in Square Miles
^ = Raised to the power (or exponent)
P = the Mean Annual Precipitation in Inches
TI = the temperature index, the mean minimum January air Temperature

Based on a drainage area of 448.5 square miles, the mean minimum January temperature of 13 degrees Fahrenheit, and a mean annual precipitation of 20" the equation becomes:

$$Q100 = 0.00863 *(448.5)^0.69 *(20)^0.35 * (13)^2.86 = 2552.5 cfs$$

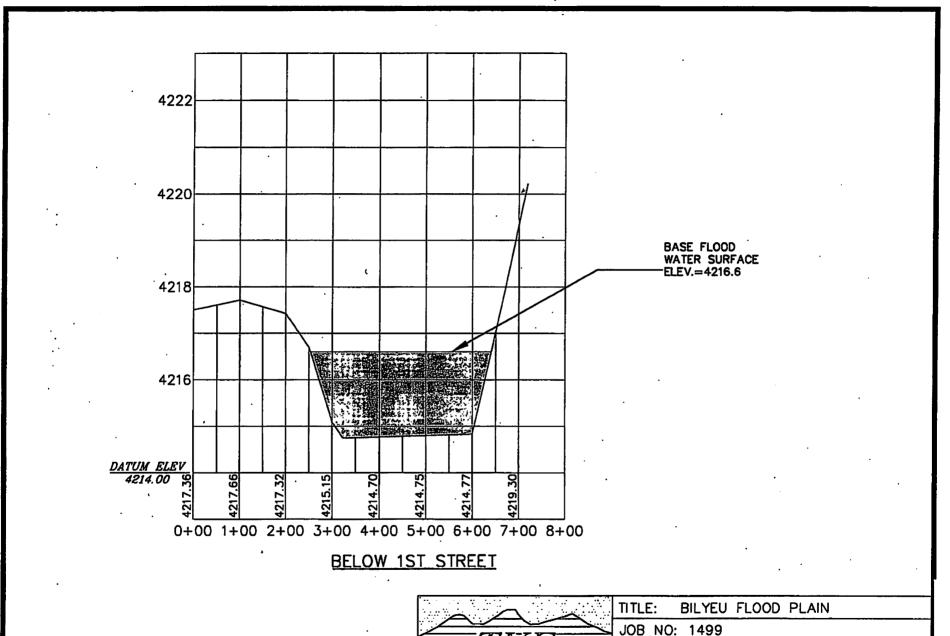
This same flow calculation is verified by using the USDA Spreadsheet program-, which uses the same equation – it is included in Appendix B.

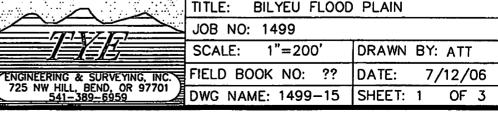
We compared the flow results to streams with similar drainage area provided in the latest flood insurance study to verify the likelihood of this discharge. The Little Deschutes at the Klamath County Line has a drainage area of 620 square miles with an estimated peak 100-year discharge of 1810 cfs. The main Deschutes upstream of Fall River has a drainage area of 538 square miles and a 100-year peak discharge of 2480 cfs.

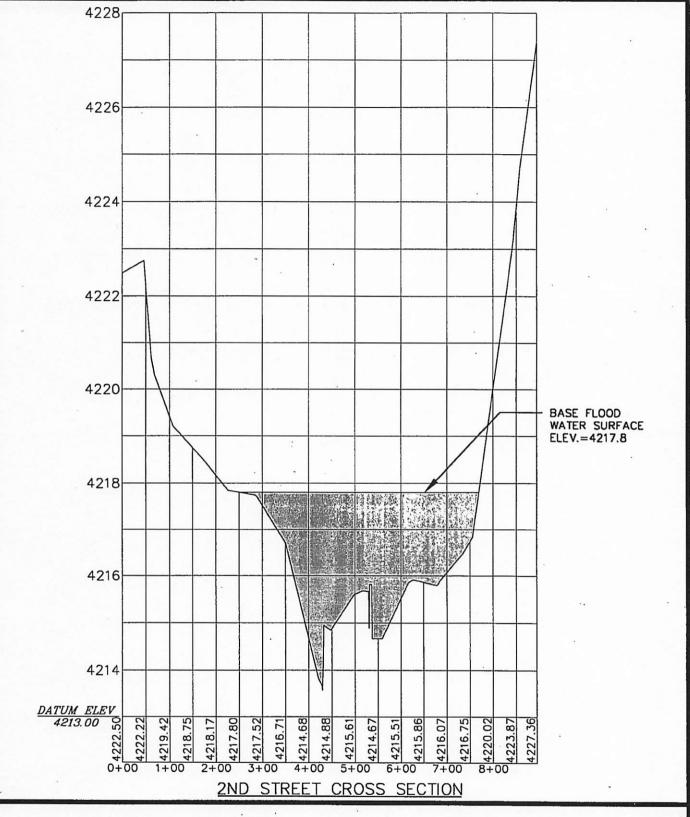
#### PLOT OF THE CROSS SECTION

John Lulich, Professional Engineer, performed a field visit to identify the controlling hydraulics. He directed the surveying for (4) cross sections to be taken: 2 downstream, 1 at the site and one upstream of the site. The floodplain at the site and upstream is wide. A low, flat roadway, 3<sup>rd</sup> Street crossed the floodplain approximately 500 feet upstream of the subject property. Downstream of the site the floodplain constricts at it passes near first street and constricts even further beyond 1<sup>st</sup> street. 2 cross sections were taken downstream due to the constricting nature of the floodplain. All survey information was tied into the National Geodetic Vertical Datum of 1929 (NGVD 29)

The following pages are scaled drawings of those four cross sections.







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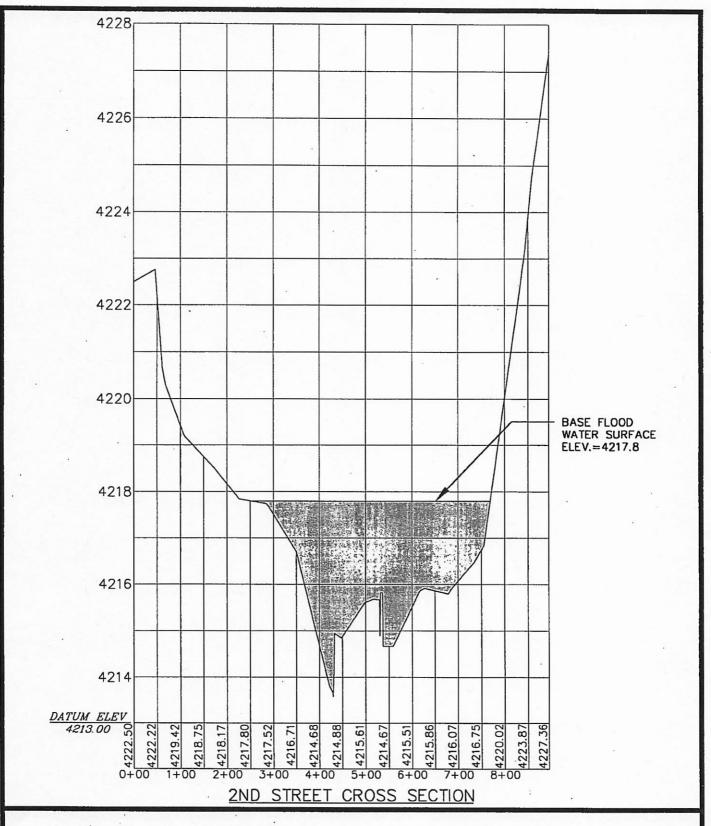
DATE: 5/8/06

SCALE: 1"=200'

DRAWN BY: ATT

DWG #:

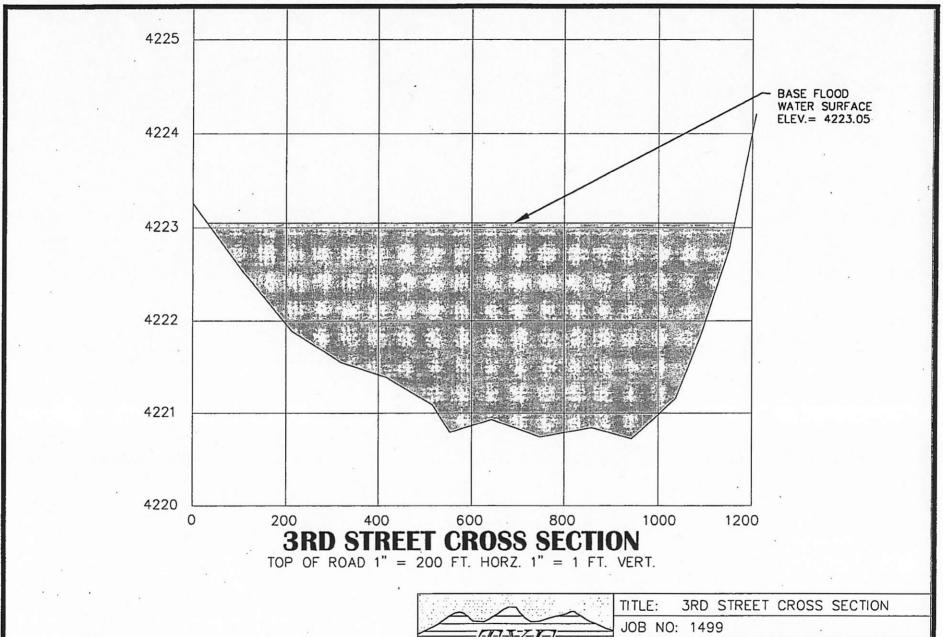
1499-15



# TYE ENGINEERING, INC.

725 NW HILL, BEND, OREGON 97701 (541) 389-6959

DATE: 5/8/06 SCALE: 1"=200' DRAWN BY: ATT DWG #: 1499-15



	TITLE: 3RD STREET (	CROSS SECTION
	JOB NO: 1499	
	SCALE: $1" = 200$	DRAWN BY: JPL
ENGINEERING & SURVEYING, INC.	FIELD BOOK NO: NA	DATE: 7/12/2006
725 NW HILL, BEND, OR 97701 541-389-6959	DWG NAME: 1499-15	SHEET: OF

#### HYDRUALIC CALCULATIONS

The controlling Hydraulics were open channel flow, which utilize the Manning Equation:

$$Q = (1.49/n)*A*R^{(2/3)}*SQRT(S)$$

Where Q is the flowrate (cfs), n is the Channel Roughness (unitless), A is the cross sectional Area (square feet), R is the wetted perimeter (feet), and S is the channel slope (ft/ft)

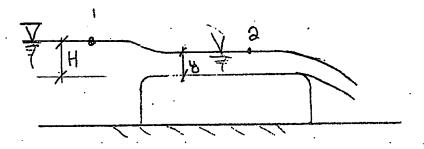
The results of this calculation are tabulated in the Table Below

Location	Q100 (cfs)	n	A (sq. feet)	R (feet)	S (ft./ft.)	Water Surface Elevation NGVD
Downstream of First Street	2485	.035	697	395	.00355	4216.6
At First Srteet (Downstream)	2485	.035	690.2	- 426.5	:00355	4217.2
At Site (2 <sup>nd</sup> Street	2485	.035	979.2	566.3	.00176	4217.8

At approximately 500 feet upstream of the subject property, 3<sup>rd</sup> street crosses the floodplain. It is long and flat and resembles a broad crested weir. There are a few small culverts under the roadway, but their combined capacity would be far less than 100 cfs – so these are ignored in the hydraulic calculations.

The hydraulic equations for a broad crested weir are below.

$$V 2 = SQRT(2*g*(H-y))$$
 
$$Q = V2*A$$
 ELEVATION UPSTREAM = BOTT. OF WEIR ELEV. +H



#### Where:

Q = the 100-year peak discharge developed in first part of this report in cubic ft./sec.

V2 = The Velocity over the broad crested weir (ft/sec)

SQRT= The Square Root of

g =the acceleration due to gravity (32.2 ft/sec^2)

H = the Head (height of water surface elevation upstream above the weir) in feet
A = cross sectional area

Y = water surface height at the weir in feet

WATER SURF. UPSTREAM OF 3RD = ELEV. AT Y + H (NGVD 29)

Using a flow of 2552 cfs over the roadway, a headloss over the weir of 0.05 feet (H-y), the velocity (V2) calculates to be is 1.79 ft/sec. And the Cross sectional area required is 1422.5 square feet. This results in a water surface elevation 4223.00f e cross sectional area provided for is 1408 square feet at elevation 4223.05 The Calculations are shown below

$$V = SQRT(2*(32.2)*(0.05)) = 1.794 \text{ ft/sec}$$

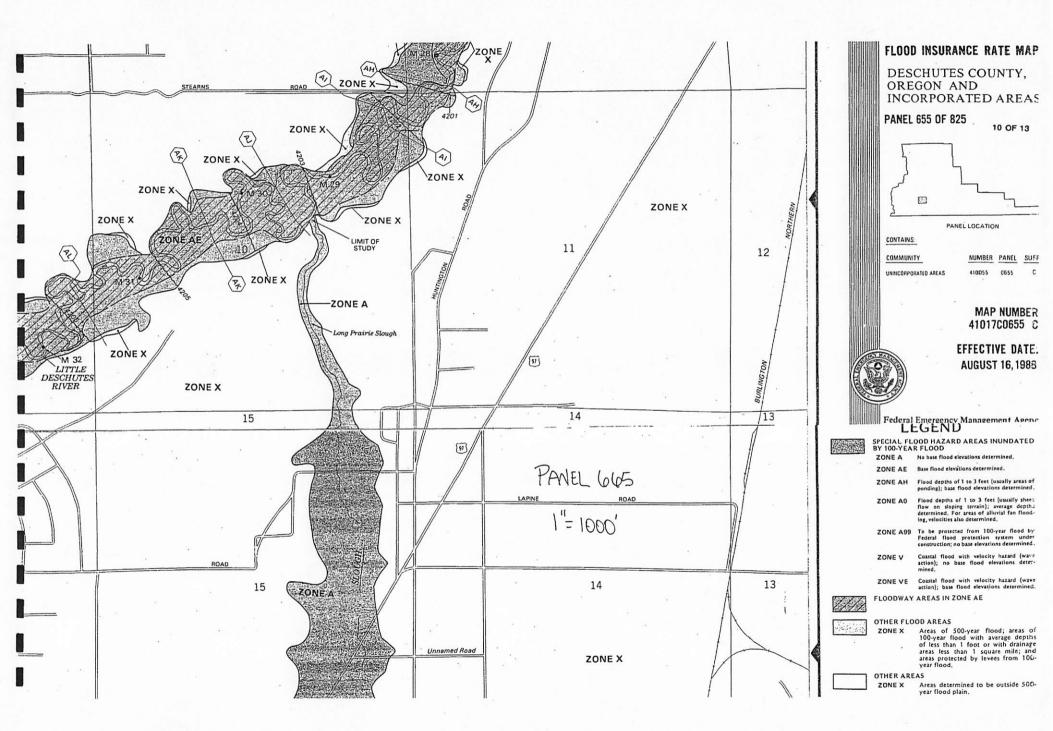
(2552) = 1.794\*A therefore A = 1422.5 square feet.

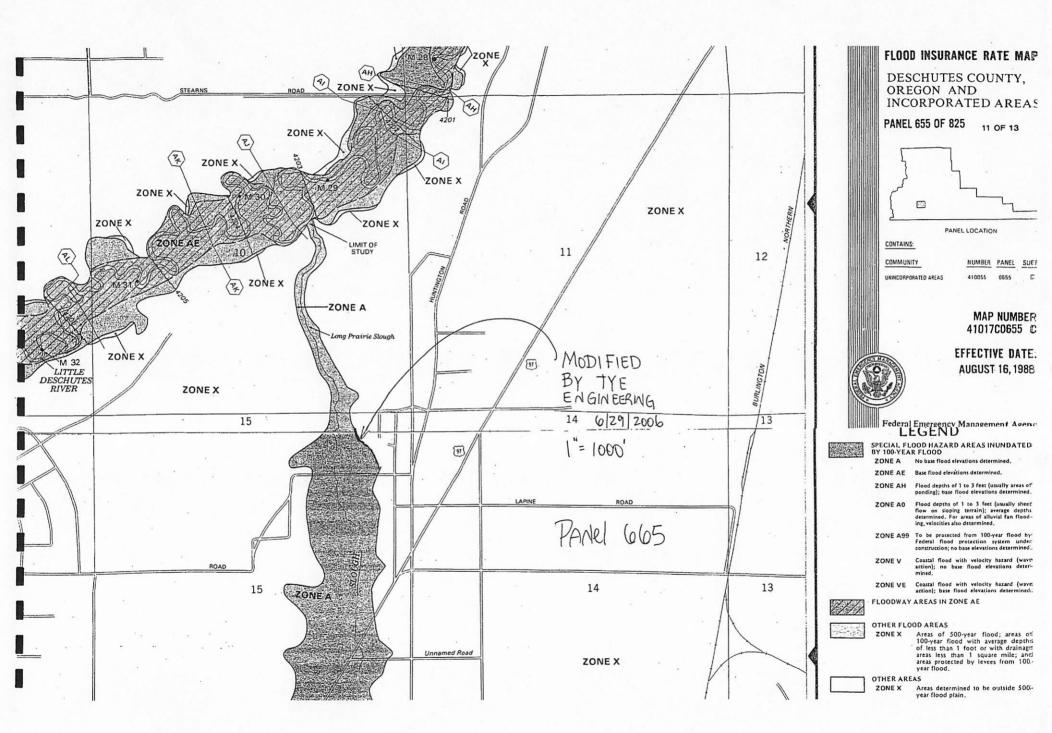
using surveyed cross section water surface elev. Y = 4223.0

ELEVATION UPSTREAM = 4223.0 + 0.05 = 4223.05

### COPY OF MODIFIED FLOOD BOUNDARY MAP

There are two existing structures on the lot. Attached are two maps: a modified FEMA floodplain map, and a more detailed map of the subject lot developed by Tye Engineering.







The following documentation was taken from:

Appendix A

U.S. Geological Survey Water-Resources Investigations Report 94-4002: Nationwide summary of U.S. Geological Survey regional regression equations for estimating magnitude and frequency of floods for ungaged sites, 1993

## **OREGON**

### **WESTERN OREGON**

### Summary

Western Oregon is divided into four hydrologic regions (fig. 1). The regression equations developed for these regions are for estimating peak discharges (QT) having recurrence intervals T that range from 2 to 100 years. The explanatory basin variables used in the equations are drainage area (A), in square miles; percentage of basin area in lakes or ponds (ST); precipitation (I), in inches, defined as the annual maximum 24-hour rainfall with a recurrence interval of 2 years (fig. 2); and forest cover (F), the percentage of the drainage area covered by forest as indicated on recent topographic maps. The constant 1 is added to ST in the computer application of the regression equations. The user should enter the actual value of ST. The precipitation variable can be obtained from figure 2, taken from NOAA Atlas 2 for Oregon (Miller and others, 1973); other variables can be measured from topographic maps. The regression equations were developed from peak-discharge records for 230 stations in Oregon and 9 in adjacent States and are applicable to all streams whose flows from 90 percent or more of the drainage area are uncontrolled. The standard errors of estimate of the regression equations by region range from 34 to 60 percent. The report by Harris and others (1979) includes maximum discharges and flood characteristics at gaging stations used in the analysis.

### Procedure

Topographic maps, the hydrologic regions map (fig. 1), the 2-year 24-hour precipitation map (fig. 2), and the following equations are used to estimate the needed peak discharges QT, in cubic feet per second, having selected recurrence intervals T.

### Coast Region

 $Q2 = 4.59 A^{0.96} (ST+1)^{-0.45} I^{1.91}$ 

 $Q5 = 6.27A^{0.95}(ST+1)^{-0.45}I^{1.95}$ 

Q10 =  $7.32A^{0.94}(ST+1)^{-0.45}I^{1.97}$ Q25 =  $8.71A^{0.93}(ST+1)^{-0.45}I^{1.99}$ Q50 =  $9.73A^{0.93}(ST+1)^{-0.44}I^{2.01}$ Q100 =  $10.7A^{0.92}(ST+1)^{-0.44}I^{2.02}$  Appendix A

### Willamette Region

 $Q2 = 8.70A^{0.87}I^{1.71}$   $Q5 = 15.6A^{0.88}I^{1.55}$   $Q10 = 21.5A^{0.88}I^{1.46}$   $Q25 = 30.3A^{0.88}I^{1.37}$   $Q50 = 38.0A^{0.88}I^{1.31}$   $Q100 = 46.9A^{0.88}I^{1.25}$ 

### Rogue-Umpqua Region

Q2 =  $24.2A^{0.86}(ST+1)^{-1.16}I^{1.15}$ Q5 =  $36.0A^{0.88}(ST+1)^{-1.25}I^{1.15}$ Q10 =  $44.8A^{0.88}(ST+1)^{-1.28}I^{1.14}$ Q25 =  $56.9A^{0.89}(ST+1)^{-1.31}I^{1.12}$ Q50 =  $66.7A^{0.90}(ST+1)^{-1.33}I^{1.10}$ Q100 =  $773.A^{0.90}(ST+1)^{-1.34}I^{1.08}$ 

### High Cascades Region

 $\begin{array}{rcl} Q2 & = & 4.75 A^{0.90} (ST+1)^{-0.62} (101-F)^{0.11} I^{1.17} \\ Q5 & = & 8.36 A^{0.86} (ST+1)^{-0.81} (101-F)^{0.08} I^{1.30} \\ Q10 & = & 11.3 A^{0.85} (ST+1)^{-0.92} (101-F)^{0.07} I^{1.37} \\ Q25 & = & 15.4 A^{0.83} (ST+1)^{-1.03} (101-F)^{0.05} I^{1.46} \\ Q50 & = & 18.8 A^{0.82} (ST+1)^{-1.10} (101-F)^{0.04} I^{1.52} \\ Q100 & = & 22.6 A^{0.81} (ST+1)^{-1.17} (101-F)^{0.03} I^{1.57} \end{array}$ 

### References

Harris, D.D., Hubbard, L.L., and Hubbard, L.E., 1979, Magnitude and frequency of floods in western Oregon: U.S. Geological Survey Open-File Report 79-553, 35 p.

Miller, J.F., Frederick, R.H., and Tracey, R.J., 1973, Precipitation-frequency atlas of the western United States: NOAA Atlas 2 Volume IV- Oregon, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, Silver Spring, MD.

# **EASTERN OREGON**

Summary

Eastern Oregon is divided into four hydrologic regions (fig. 1). The regression equations developed for these regions are for estimating peak discharges (QT) having recurrence intervals ranging from 2 to 100 years. The explanatory basin characteristics used in the equations are drainage area (A), in square miles; percentage of drainage area covered by forest (F) as shown on recent topographic maps; main channel length (L), in miles; a temperature index (Ti), which is the mean minimum January air temperature, in degrees Fahrenheit (fig. 3); and mean annual precipitation (P), in inches (fig. 4). The constant 1 is added to F in the computer application of the regression equations. The user should enter the actual value of F. The variable Ti can be obtained from figure 3, modified from Sternes (1960); P can be obtained from figure 4, modified from U.S. Weather Bureau (1964); and the other variables can be measured from topographic maps. The equations were developed from peak-discharge records available as of 1979 for 148 stations in Oregon and 14 stations in adjacent States. The equations are applicable to ungaged streams whose flow from more than 90 percent of the drainage area is unregulated. The average standard errors of estimate, by region, range from 45 to 51 percent. The report by Harris and Hubbard (1983) includes basin characteristics, flood characteristics, and maximum floods at gaging stations used in the analysis.

### **Procedure**

Topographic maps, the hydrologic regions map (fig. 1), the minimum January temperature map (fig. 3), the mean annual precipitation map (fig. 4), and the following equations are used to estimate the needed peak discharges QT, in cubic feet per second, having selected recurrence intervals T.

### North Central Region

 $\begin{array}{rcl} Q2 & = & 0.00013 \, A^{0.80} P^{1.24} T_1^{2.53} \\ Q5 & = & .00068 \, A^{0.76} P^{0.90} T_1^{2.64} \\ Q10 & = & .00134 A^{0.74} P^{0.73} T_1^{2.73} \\ Q25 & = & .00325 A^{0.72} P^{0.55} T_1^{2.78} \\ Q50 & = & .00533 A^{0.70} P^{0.44} T_1^{2.83} \\ Q100 & = & .00863 A^{0.69} P^{0.35} T_1^{2.86} \end{array}$ 

### Eastern Cascades Region

 $\begin{array}{rcl} Q2 & = & 0.017L^{1.72}P^{1.32}\\ Q5 & = & .118L^{1.59}P^{1.01}\\ Q10 & = & .319L^{1.53}P^{0.85}\\ Q25 & = & .881L^{1.46}P^{0.68}\\ Q50 & = & 1.67L^{1.42}P^{0.58}\\ Q100 & = & 2.92L^{1.39}P^{0.49} \end{array}$ 

### Southeast Region

Appendix A

 $\begin{array}{rcl} Q2 & = & 0.105 A^{0.79} Ti^{1.67} \\ Q5 & = & .328 A^{0.77} Ti^{1.52} \\ Q10 & = & .509 A^{0.77} Ti^{1.50} \\ Q25 & = & .723 A^{0.75} Ti^{1.52} \\ Q50 & = & .872 A^{0.76} Ti^{1.52} \\ Q100 & = & .960 A^{0.75} Ti^{1.57} \end{array}$ 

### Northeast Region

Q2 =  $0.508A^{0.82}P^{1.36}(1+F)^{-.27}$ Q5 =  $2.44A^{0.79}P^{1.09}(1+F)^{-.30}$ Q10 =  $5.28A^{0.78}P^{0.96}(1+F)^{-.32}$ Q25 =  $11.8A^{0.77}P^{0.83}(1+F)^{-.35}$ Q50 =  $19.8A^{0.76}P^{0.75}(1+F)^{-.36}$ Q100 =  $30.7A^{0.76}P^{0.68}(1+F)^{-.38}$ 

### References

Harris, D.D., and Hubbard, L.E., 1983, Magnitude and frequency of floods in eastern Oregon: U.S. Geological Survey Water-Resources Investigations Report 824078, 39 p.

Sternes, G.L., 1960, Climates of the States, Oregon, in Climatography of the United States: U.S. Weather Bureau, no. 60-35, p. 17.

U.S. Weather Bureau, 1964, Mean annual precipitation, 1930-57, State of Oregon: U.S. Soil Conservation Service map m-4161, Portland, Oregon.

# PORTLAND-VANCOUVER, WASHINGTON URBAN

### Summary

The regression equations developed for the Portland area are for estimating urban peak discharges (QT) having recurrence intervals T that range from 2 to 100 years. The explanatory basin variables used in the equations are drainage area (DA), in square miles; a land-use index (LU12); length of street gutters, in miles per square mile (GUTR); and storage (ST), the area where water can be stored during a storm event as a percentage of the total drainage area. The variables DA and ST can be measured from topographic maps, but land-use inventory maps are needed to estimate LU12. Information on gutter installation must be obtained locally. The equations were developed from peak-discharge records at 25 gaged

sites, derived by synthesizing discharge from historical rainfall data. The average standard error of estimate of the regression equations is about 23 percent.

### Procedure

Topographic and land-use maps, information on gutter installation and the following equations are used to estimate the needed peak discharges QT, in cubic feet per second, having selected recurrence intervals T.

Q2 = 
$$79 \text{ DA}^{0.93} \text{ LU12}^{-0.12} (\text{GUTR} + 0.1)^{0.05}$$
  
(ST+0.1)<sup>-0.27</sup>  
Q5 =  $127 \text{ DA}^{0.93} \text{ LU12}^{-0.14} (\text{GUTR} + 0.1)^{0.06}$   
(ST+0.1)<sup>-0.26</sup>

Q10 = 
$$162 \text{ DA}^{0.94} \text{ LU12}^{-0.16} (\text{GUTR}+0.1)^{0.06}$$
  
(ST+0.1)<sup>-0.25</sup>  
Q25 =  $214 \text{ DA}^{0.94} \text{ LU12}^{-0.17} (\text{GUTR}+0.1)^{0.07}$   
(ST+0.1)<sup>-0.24</sup>  
Q50 =  $256 \text{ DA}^{0.93} \text{ LU12}^{-0.18} (\text{GUTR}+0.1)^{0.07}$   
(ST+0.1)<sup>-0.23</sup>  
Q100 =  $303 \text{ DA}^{0.94} \text{ LU12}^{-0.19} (\text{GUTR}+0.1)^{0.08}$   
(ST+0.1)<sup>-0.22</sup>

### Reference

Laenen, A., 1980, Storm runoff as related to urbanization in the Portland, Oregon-Vancouver, Washington area: U.S. Geological Survey Open-File Report 80-689, 71 p.



Figure 1. Flood-frequency region map for Oregon. (PostScript file of Figure 1.)



Figure 2. The 2-year 24-hour rainfall in western Oregon. (PostScript file of Figure 2.)





Figure 3. Mean daily minimum January temperature in eastern Oregon. (PostScript file of Figure 3.)



Figure 4. Mean

annual precipitation in eastern Oregon. (PostScript file of Figure 4.)

# Back to NFF main page

USGS Surface-Water Software Page

U.S. Department of the Interior, U.S. Geological Survey

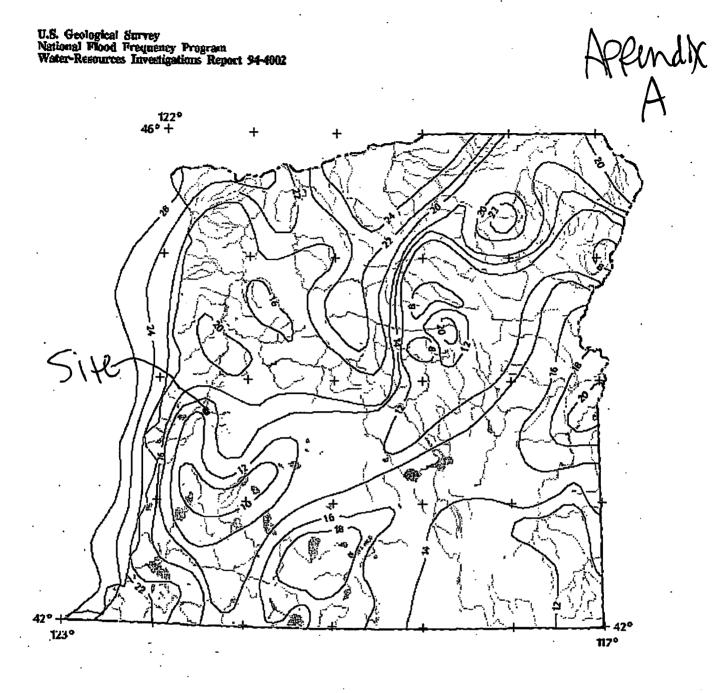
Maintainer: gcomfort@usgs.gov

Last update: 09:55:14 Wed 13 Nov 2002

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URL: http://water.usgs.gov/software/nff\_manual/or/





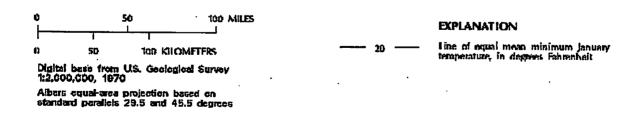
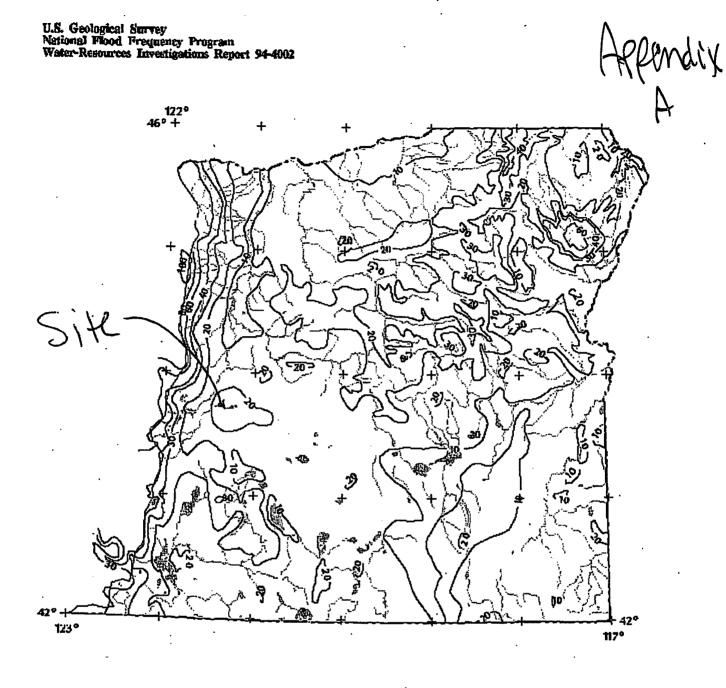


Figure 3. Mean daily minimum January temperature in eastern Oregon.



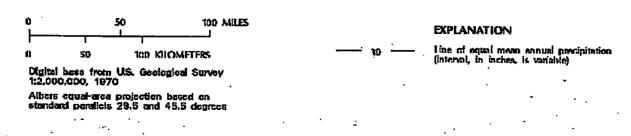


Figure 4. Mean annual precipitation in eastern Oregon.

U.S. Geological Survey National Flood Frequency Program Water-Resources Investigations Report 94-4002

Appendix A

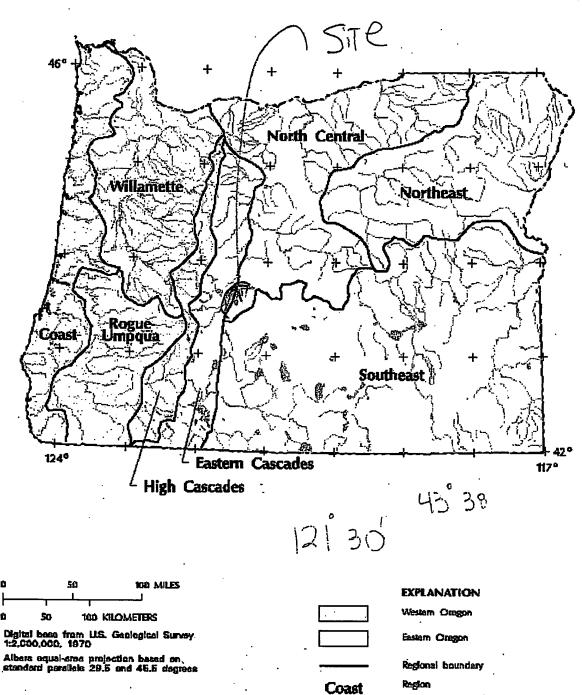


Figure 1. Flood-frequency region map for Oregon.

### USDA - NATURAL RESOURCES CONSERVATION SERVICE BEND TECHNICAL SERVICE CENTER 04/06/2005

APPENDIX B

NOTE: NRCS uses EFM-2 for up to 2,000 acres and TR-55 for larger watersheds. The USGS procedure should be used as a check against results from NRCS methods

**USDA-NRCS HYDROLOGY CHECK** 

BY:

John Lulich

AREA:

NORTH CENTRAL REGION

PROJECT: Long Prarie Slough

A =	448.50	SQ.MI. O	F DRAINAG	E AREA								
P =	20.00	INCHES; MEAN ANNUAL PRECIPITATION										
Ti =	13.00	DEGREES F; MEAN MINIMUM JANUARY AIR TEMPERATURE										
			Standard e	high error	low error							
			log units	% plus	% minus	cfs	cfs					
Q2=	464.42	CFS	0.343	120%	55%	557	255					
Q5=	911.14	CFS	0.279	<sup></sup> 90%	47%	820	428					
Q10=	1202.89	CFS	0.281	_ 91%	48%	1095	· 577					
Q25=	1711.91	CFS	0.293	∷96%	49%	1643	839					
Q50=	2031.77	CFS	0.315	107%	52%	2174	1057					
Q100=	2552.50	CFS	0.34	119%	54%	3037	1378					

CALCULATIONS PER U.S.G.S. REPORT 94-4002

NATIONWIDE SUMMARY OF U.S.G.S REGIONAL REGRESSION EQUATIONS
FOR ESTIMATING MAGNITUDE AND FREQUENCY OF FLOODS FOR UNGAGED
SITES FILE NAME: USGS-FLO.XLS

Appendix C

TABLE 2. SUMMARY OF DISCHARGES

Flooding Source and Location	River Mile	Drainage Area (square <u>miles)</u>	(cu <u>10-Year</u>	bic feet	scharges per second 100-Year 50	1) 00-Year			
Deschutes River									
Vicinity of Tumalo (Downstream of									
Tumalo Creek)	154.0	1000							
Vicinity of City	156.0	1990	2050	2630	2890	3450			
of Bend									
(Downstream of									
Diversion Dam)	164.4	1899	1920	2460	2605	2000			
Vicinity of Sunriver	20414	1077	1320	2400	2685	3200			
(Downstream of Little									
Deschutes)	192.5	1660	3070	3320	3400	3560			
(Upstream of Little					<u> </u>				
Deschutes)	192.5	(640)	2400	2550	2600	2720			
Vicinity of Deschutes									
River Recreation Homesites			••						
(Downstream of Fall River)	001 7				7	•			
(Upstream of Fall	204.7	(595)	2400	2550	( 2600 )	2720			
River)	204.7	538	2200	0400					
	204.7		2200	2400	( 2480 )	2620			
Little Deschutes River									
Mouth	0.0	1020	1330	2110	2620	4100			
Upstream of					2020	4100			
Paulina Creek	15.4	974	1290	2030	2530	3960			
USGS Station No.						,			
14063000(Near									
LaPine) At Deschutes-Klamath	28.1	859	1170	1850	<sub>.</sub> 2300	3600			
County Line	45.2								
Squaw Creek	43.2	(620)	920	1450	(1810)	2830			
At Deschutes-Jefferson	ı								
County Line	9.3	106	2120	2740	4620	7100			
. Downstream of Indian	7.5	100	2130	3740	4630	7100			
Ford Creek	20.8	93	1930	3390	4200	6440			
Upstream of Indian		75	1,50	3370	4200	0440			
Ford Creek	20.8	51	1140	2000	2480	3800			
USGS Station No.					_ · <del>•</del> •				
14075000 (Near				•					
Sisters)	26.6	. 44	1020	1790	2210	3390			

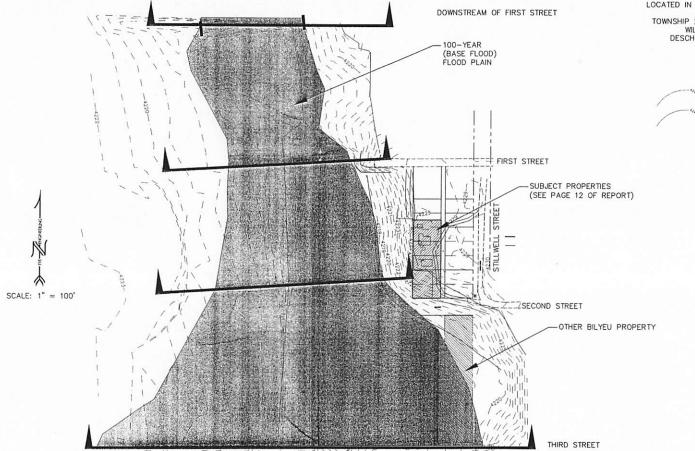


(CROSS SECTIONS COORESPOND WITH THOSE IN JULY BASE FLOOD ELEVATION 2006 REPORT FOR 51572 SALZER STREET)

LOCATED IN THE NE 1/4 OF THE NE 1/4 SECTION 15,
TOWNSHIP 22 SOUTH, RANGE 10 EAST,
WILLAMETTE MERIDIAN,
DESCHUTES COUNTY, OREGON

### **LEGEND**





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