



CITY OF CARLTON
PLANNING COMMISSION AGENDA
MONDAY, NOVEMBER 13, 2023, 6:00 P.M.
VIA ZOOM AND 945 WEST GRANT STREET

The Mission of the City of Carlton is to sustain and enhance the viability of the community by providing essential services with professionalism and integrity.

	<u>Pages</u>
1. Call to Order – Roll Call	
A) Changes to the Agenda	
2. Minutes Approval – October 9, 2023	2
3. Citizen Comments <i>(Topics not on Agenda)</i>	
4. Discussion topics/Action Items	
A. JR Meadows 3 Phasing Addition – <i>continued from October 9, 2023</i>	3
B. 2024 Planning Commission meeting dates	5
5. Public Hearings	
A. Partition file# PAR 2023-01; Collier- 629 West Monroe Street	7
B. Subdivision file# SUB 2023-02; 751 South 2 nd Street	23
6. Commissioner comments	
7. Adjournment	

Due to spacing issues at City Hall, the public is encouraged to attend the meeting virtually. To attend or participate in the meeting, you can log in with a computer using the link below, or the phone option below:
<https://us02web.zoom.us/j/82151839904?pwd=cTZDRGIGa0FZSGFydW11N05JQ2hmUT09>

This meeting ID: 821 5183 9904

Passcode: 446773

Or you can call **1-253-215-8782**, input the meeting ID and password and enter the meeting using your phone.



Planning Commission Regular Session Minutes
October 9, 2023, 6:00 PM
Via Zoom and at 945 West Grant Street

1. CALL MEETING TO ORDER & ROLL CALL**6:00 PM**

Planning Commissioner Chair Anthony Stuart called the meeting to order at 6:00 PM.

Members Present: Anthony Stuart Susan Turrell
 Jennifer Nordstrom Annette Fernandez-Madrid
 Robin Geck

Members Absent: Noelle Amaya, Jim Bandy

Staff Present: Scott Whyte, City Planner Shannon Beaucaire, City Manager
 Aimee Amerson, City Recorder Morgan Shelton, Finance Specialist

Others: Jacki Herd of AKS Engineering, Nathan Ahrend, Darrel Smith, Lonnie Geck, and Marie Frugia.

2. MINUTES APPROVAL- August 14, 2023**6:02 PM**

MOTION Fernandez-Madrid/Turrell: to approve the Planning Commission minutes from August 14, 2023, as submitted. Motion carried. (5 Yes/0 No/2 Absent [Amaya, Bandy] /0 Abstain).

3. CITIZEN COMMENTS**6:03 PM**

None given.

4. ACTION / DISCUSSION ITEMS**A) JR Meadows 3 Phasing Proposal****6:03 PM**

Chair Anthony Stuart introduced City Planner Scott Whyte to present the JR Meadows 3 Subdivision phasing proposal. Whyte went over the memo and applicant submittal and discussed findings in the staff review included in the Planning Commission Packet.

Commissioners asked questions of the City Planner, the applicant Darrel Smith, and his representative Jacki Herd from AKS Engineering. The Commissioners requested that various topics be discussed with the City Attorney and City Engineer before making any decisions or moving forward with any voting on the proposed phasing.

B) Proposed Type II process- Draft Development Code update**6:34 PM**

City Planner Scott Whyte gave a presentation regarding the process and components surrounding the pending Development Code update. Commissioners asked questions and discussed throughout and at the end of the presentation.

5. COMMISSIONER COMMENTS**7:25 PM**

Commissioners discussed and brought attention to tree and landscaping problems in the South 7th Street planting strips, potential corrective action for items out of compliance, requested corrections to the current street trees list, Main Street road conditions, and grant funding secured for repairs.

6. ADJOURNMENT**7:51 PM**

The meeting adjourned at 7:51 PM.

ATTEST:

 Morgan Shelton, Finance Specialist

 Anthony Stuart, Planning Commissioner Chair



To: Members of the Planning Commission
From: Scott Whyte, Contract City Planner for the City of Carlton
Subject: Phasing for JR Meadows 3 Subdivision – non hearing item – continued
Date: November 6, 2023, for meeting of November 13, 2023

Background / Summary

Staff refer to the memorandum dated October 2, 2023 (attached) pertaining to JR Meadows 3 Subdivision and the request to phase construction / record two separate plats. This item (non-hearing) is continued from the October 9, 2023, Planning Commission meeting.

For the reasons identified in the staff memo of October 2, staff finds the applicant’s phasing proposal to conform substantially to the preliminary plan and to the conditions of approval as imposed. Staff and the City Attorney observe no substantive change. The City Attorney will be at the meeting on November 13 to answer questions. City Engineer will also be at the November 13 meeting to answer questions about interim grading.

Action Requested

Does the Planning Commission concur with the staff finding that the proposal to introduce phasing conforms substantially to the preliminary plan as approved by the city?

As explained in the staff memo of October 2, a code provision in CMC 17.176.05 (specific to final subdivision plat approval) requires staff to ascertain whether the final plat conforms substantially to the preliminary plan as approved. The Planning Commission Chair signs the final plat thereafter signifying Planning Commission approval. By concurring with the staff finding above, the Commission signifies accordingly (on the matter of phasing alone as proposed).

Exhibits

Staff memorandum dated October 2, 2023, and related exhibits from October 9 on this topic.

Exhibit A



BEND, OR
2777 NW Lolo Drive
Suite 150
Bend, OR 97703
(541) 317-8429
www.aks-eng.com

KEIZER, OR
3700 River Road N
Suite 1
Keizer, OR 97303
(503) 400-6028

THE DALLES, OR
3775 Crates Way
The Dalles, OR 97058
(541) 296-9177

TUALATIN, OR
12965 SW Herman Road
Suite 100
Tualatin, OR 97062
(503) 563-6151

VANCOUVER, WA
9600 NE 126th Avenue
Suite 2520
Vancouver, WA 98682
(360) 882-0419

WHITE SALMON, WA
107 W Jewett
Suite 100
White Salmon, WA 98672
(509) 281-3227

Date: 9/27/2023
To: Scott Whyte, City Planner, City of Carlton
From: Jacki Herb
Project Name: JR Meadows No. 3 - City Case File SUB 2023-01
AKS Job No.: 8632

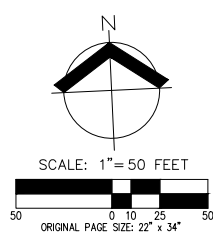
Subject: JR Meadows No. 3 Phasing

Chad E Davis Construction, LLC, Owner and Applicant of JR Meadows No. 3, would like to complete JR Meadows No. 3 in two separate phases. This will provide the builder with a sufficient number of finished lots to meet demand without exceeding the current market absorption rate.

The attached plan illustrates the planned subdivision phasing. As shown, additional changes to this project are not included or necessary to accommodate the planned phasing.

The Applicant is aware that the Conditions of Approval noted in the Notice of Decision (City Case File SUB 2023-01) will need to be met, and the final plats for each phase will need to be submitted to the City prior to the expiration date noted in Condition of Approval #5. Additionally, the Applicant is aware that some of the conditions of approval will need to be met within a specific phase and/or both of the phases. City staff has marked up the conditions of approval (attached) to address the applicable timing of each of the conditions as they relate to the planned phasing, and the Applicant agrees with the timing noted by staff.

Exhibit B



**PRELIMINARY PHASING PLAN
 JR MEADOWS NO. 3
 CARLTON, OREGON**

**PRELIMINARY
 NOT FOR
 CONSTRUCTION**

JOB NUMBER:	8632
DATE:	09/15/2023
DESIGNED BY:	NRA
DRAWN BY:	NRA
CHECKED BY:	CMS

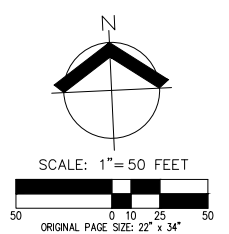
EXH-1



JR MEADOWS NO. 2
 (UNDER CONSTRUCTION)

PHASE 1

PHASE 2



PRELIMINARY PHASING PLAN WITH UTILITIES
JR MEADOWS NO. 3
CARLTON, OREGON

PRELIMINARY
NOT FOR
CONSTRUCTION

JOB NUMBER:	8632
DATE:	09/15/2023
DESIGNED BY:	NRA
DRAWN BY:	NRA
CHECKED BY:	CMS

CITY OF CARLTON
NOTICE OF DECISION
JR MEADOWS 3 SUBDIVISION
CITY CASE FILE SUB 2023-01

Staff marked Notice of Decision - 9-6-2023 S. Whyte.

Thoughts on which conditions of approval need to be completed as part of the 1st phase.

PLANNING COMMISSION DECISION: May 17, 2023
DATE OF NOTICE OF DECISION: May 22, 2023

APPLICANT / PROPERTY OWNER: Chad E. Davis Construction, LLC

APPLICANT REPRESENTATIVES: AKS Engineering & Forestry / Sherman, Sherman, Johnnie Hoyt, LLC

APPLICATION: Preliminary subdivision approval for 101 residential lots. 63 of these lots are intended for detached single-family homes and 38 of these lots are intended for attached single-family homes (townhomes).

SITE LOCATION: Tax Lot 1200 on Yamhill County Tax Assessor's Map 3-4-22CC, located south of Carlton Elementary School, bounded by 3rd Street to the west and S. 7th Street to the east.

- APPLICABLE STANDARDS/CRITERIA: Carlton Development Code
- Section 17.28 Residential Medium Density R-2 Zone
 - Section 17.60.030 Development and Design Standards
 - Section 17.64 Street Standards
 - Section 17.72 Storm Drainage
 - Section 17.76 Utility Lines and Facilities
 - Section 17.88 Development Standards for Land Divisions
 - Section 17.176 Subdivisions
 - Section 17.196 Public Hearings
 - Section 17.216 Performance Agreement
 - Section 17.176.030 B. Approval time and Extensions.

NOTICE IS HEREBY GIVEN that the City of Carlton Planning Commission voted to **approve** with conditions, the application for Preliminary Subdivision, case file SUB 2023-02, as described above.

The Planning Commission decision is based on findings of fact as contained in the staff reports dated March 13, 2023, and May 11, 2023, prepared in response to applicable Development Code standards and approval criteria.

The Planning Commission decision is also based on oral and written testimony received prior to and during the public hearing dates of March 20, 2023, and May 17, 2023.

- A** Condition applicable to the area shown for each phase. Improvements to be accomplished/completed prior to city approving final plat for each phase
- B** Condition applicable to Phase I. Improvements to be accomplished/completed prior to city approving final plat for phase I.
- The following conditions of approval for JR Meadows 3 Subdivision, city case file SUB 2023-01, shall apply.

1. **Prior to final plat approval**, detailed design drawings and specifications for all water, sanitary sewer, storm drainage, street improvements, grading and erosion control, property and street centerline monuments and subdivision benchmarks shall be prepared by a registered professional engineer and submitted to the City Engineer for approval prior to constructions of any improvements.
 - a. All utility easements shall be shown on the final plat and at a minimum shall conform to the requirements of Development Code Section 17.76. **A**
 - b. The installation of street name signs and traffic control signs is required at locations determined by the City and shall be of a type required by City standards. **A**
 - c. The installation of underground electric service, light standards, wiring, and lamps for streetlights of a type required by City standards following the making of necessary arrangements with the serving electric. **A**
 - d. Curb cuts and driveway installations by the developer shall be according to the City standards. **A**
 - e. An 11-foot PUE shall be shown on the final plat on the side of Wilson Street containing the water line. **B**
 - f. There shall be no-parking signs provided on both sides of 3rd Street, and the 3rd Street shoulder shall be one-foot in width comprised of crushed rock. The shoulder shall also provide accommodations for storm drainage on the west side of the street as determined by the City Engineer. **B**
 - g. The sanitary sewer on Third St. shall be extended to the South end of the development, and North to the intersection with Cleveland St. **B**
 - h. The storm system will need to be modified to avoid surcharges unless the applicant can provide justification approved by the City Engineer on the deeper pipelines. This may require detention. **A**
 - i. The drainage tiles through the subdivision will need to be removed or filled to prevent settlement. The applicant shall provide a drainage path/facilities for any tile that is upstream of the development for approval by the City Engineer. **B**
 - j. The Applicant shall provide an easement, in a form acceptable to Applicant and the City, requiring a minimum separation of 20 feet between the front of garage and outside edge of the sidewalk on all lots shown to border Wilson Street, 3rd Street, and Cleveland Street where a sidewalk easement is proposed in-lieu of public right-of-way. The easement shall be structured so that the required separation of the garages from the sidewalks is reflected on the plat. The city shall be the beneficiary of this easement and if the Yamhill County Surveyor does not accept the agreed upon easement, the applicant and city shall agree on a means to reflect the restriction on the plat acceptable to the County Surveyor. **A**
 - k. Upon completion of street improvements, centerline monuments shall be established and protected in monument boxes at every street intersection at all points of curvature, points of tangency of street center lines, and other points required by state law. **A**

- l. Elevation benchmarks shall be set at intervals established by the City Engineer. The benchmarks shall consist of a brass cap set in a curb or other immovable structure. A
 - m. Compliance with the access spacing requirements of Section 17.100.030 intersections shall be shown on the final construction plans. A
 - n. The applicant shall obtain a City of Carlton access permit for all new curb cuts within the subdivision. A
 - o. Compliance with vision clearance standards shall be demonstrated in the final construction plans. A
 - p. Street stubs shall be provided for Taylor, Wilson, and 5th Streets where these streets dead-end at the perimeter of the subject property. For protecting off-site trees, construction of underground utilities and street improvements to the eastern stub of Taylor Street may stop short of the site perimeter as shown in the applicant's supplemental plan (Exhibit B-6 of the staff report dated May 10, 2023). Temporary protective fencing, to location shown in Exhibit B-6, is to be in place prior to commencing grading and construction activity. The final plat is to show Taylor Street right-of-way abutting the project site boundary. A B A
 - q. The applicant shall dedicate Tract A to the City of Carlton as needed for stormwater detention or landscape purposes. A minimum of three street trees shall be planted within the Tract. B A As phase 2 area might be used for const. staging.
 - r. Street trees planted in landscape strips shall be listed on the City Carlton Street Tree list. A
 - s. E. Cleveland Street is to be constructed consistent with the applicant's supplemental plan (Exhibit B-13 of the staff report dated May 10, 2023). The sidewalk on the north side of E. Cleveland Street and to that portion of S. 3rd Street (off-site) is to be constructed as part of site improvements and completed prior to final plat approval and prior to issuing building permits for home construction. B
 - t. Bike lanes to Wilson Street and 3rd Street shall be painted to six-feet in width and two minimum 10-foot travel lanes, consistent with city street design standards and the applicant's supplemental plan (Exhibit B-3 of the staff report dated May 10, 2023). B
2. **Prior to issuance of building permits:** N/A for final plat per phase consideration
- a. A Site Design Review application shall be submitted and approved by the City for the block containing lots intended for single-family attached homes.
 - b. The applicant shall demonstrate that no driveways exceed 20 feet in width at the time of Site Design Review for all attached dwellings and at building permit submittal for all detached dwellings.
 - c. The applicant shall demonstrate compliance with the landscaping standards of Section 17.84 at the time of Site Design Review for all attached dwellings and at building permit submittal for all detached dwellings. B

*N/A for final plat
per phase
consider*

- d. All dwellings shall comply with the dimensional and development standards listed in CDC Sections 17.22.040 and 17.22.050.
- e. All dwellings shall comply with the design standards of Section 17.106.030 A Residential Design Standards as illustrated on the approved elevations, at the time of building permit submittal.
- f. All lots fronting on multiple streets shall take access from the street with the lower classification unless the lot configuration does not allow for it.

3. Additional

a. The City's WWTP system must have the biological capacity needed to accommodate the homes in this subdivision before building permits can be issued for the construction of homes or connection to the City's sanitary sewer system. The final plat may be recorded upon completion of the subdivision public improvements (or execution of an appropriate deferred construction agreement and posting of a performance bond) and recordation of covenants prohibiting the sale or offering of lots or homes for sale, negotiations for sale of homes or any form of marketing of lots or homes in the subdivision. Upon satisfaction of one of the two following conditions, as determined by the City Engineer, building permits may be issued and the covenant preventing marketing or sale of homes or lots will be terminated:

B

- 1. The WWTP facility is connected to three phase power, and the biological capacity improvements are substantially complete and operational.
- 2. The study analyzing the capacity of the WWTP facility demonstrating that the facility has biological capacity to accommodate the homes in this subdivision is completed at Applicant's expense. The scope would be approved by the City, and the study would be reviewed and approved by the City. The applicant shall also pay for the cost of staff time. *

4. **Security Guarantee:** If the developer requests approval to record the final plat before all required improvements have been constructed and all conditions of approval have been met by the developer and accepted by the City, the developer shall provide a security guarantee in accordance with Section 17.216 Performance Agreement and satisfactory to the City that all improvements will be constructed in conformance with all City standards and ordinances and all conditions of approval will be satisfied.

A

5. **Final Plat Submittal / Extension:** The Planning Commission grants a 12-month extension to the 18-month approval period for this subdivision. The expiration date of this subdivision is thereby 2.5 years from the effective date of approval. Prior to expiration, the applicant shall submit three (3) identical reproducible copies of the final plat for signature. The final plat shall be submitted to the City in a form and with information consistent with Development Code Section 17.176.050 including monuments, benchmarks and other County survey and map standards, and State laws including ORS Chapter 92 for plats of record.

* Advisory Note: While cost of staff time was not made clear as part of the motion / decision, staff anticipates the cost of staff time (under Condition 3.a.2, above) to include: 1) development and approval of the scope of work, 2) assistance during the study, and 3) review and approval of the study.


*As phasing plan was not
part of the record, all
improvements for both
phases must be completed
2.5 years from
May 22, 2023*

APPEAL: Appeal procedures are described in Chapter 17.204 of the Carlton Development Code. The Planning Commission decision to approve with conditions of approval hereto, may be appealed to the Carlton City Council (by persons with standing) within 10 days of the date of this Notice of Decision by submitting a "Land Use Appeal" form and the appeal fee.

Appeal of this decision must be received by the City of Carlton (with fee) prior to **5:00 p.m. on June 1, 2023**. If no appeal, the decision for SUB 2023-01 becomes the city's final written decision, effective June 2, 2023.

If you have questions or comments regarding this notice, please contact Scott Whyte, City Contract Planner for the City of Carlton at (503) 540-1623 or via email at swhyte@mwvcog.org

SIGNED:


Shannon Beaucaire, City Manager

5/22/23
date



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To: The members of the Planning Commission
From: Aimee Amerson, City Recorder
Subject: 2024 Planning Commission meeting dates
Date: November 13, 2023

Recommendation

It is recommended that Planning Commission adjust the following 2024 meeting dates to Monday, October 21st and Monday, November 18th to avoid conflicting with holidays.

Background

The current and proposed meeting Planning Commission 2024 dates are as follows:

Month	Council (first Tuesday)	Planning Commission (second Monday)
January	Jan. 2 – Proposed 1/09	Jan. 8
February	Feb. 6	Feb. 12
March	Mar. 5	Mar. 11
April	Apr. 2	Apr. 8
May	May 7	May 13
June	June 4	June 10
July	July 2	July 8
August	Aug. 6 (NNO) Proposed 8/13	Aug. 12
September	Sept. 3	Sept. 9
October	Oct. 1	Oct. 14 (Columbus Day) 10/21 Proposed
November	Nov. 5 (Election Day) Proposed 11/12	Nov. 11 – (Veterans Day) 11/18 Proposed
December	Dec. 3	Dec. 9

City Council dates are included for Commissioner's reference.

Alternatives

Choose alternative dates other than the proposal above to meet.

Fiscal Impact

None

Exhibits

None



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**CITY OF CARLTON
PLANNING COMMISSION
STAFF REPORT**

SUBJECT: Public Hearing for Collier Two-Parcel Partition

REPORT / HEARING DATE: November 6, 2023 / November 13, 2023

APPLICANT Frances J. Collier / Steve Sampson

APPLICANT REPRESENTATIVE: Leland MacDonald, Surveyor

PROPERTY OWNER: Frances J. Collier

FILE NUMBER: PAR 2023-01

REQUEST: A two parcel partition of a 5.91 acre parcel

SITE LOCATION: 620 W. Monroe Street; Yamhill County Tax Assessor' Lot 2400 on Map 3421AC

SITE SIZE: 5.91 acres

PLAN MAP DESIGNATION: Agricultural Holding (AH)

ZONING: Agricultural Holding (AH)

CRITERIA: Carlton Development Code (CDC) Sections:

- Public notice and hearing procedures: 17.192 - 196
- AH Zone Standards: 17.48
- General Development Standards: 17.60 - 17.140
- Partitions: 17.192
- Type II Application Processing Type: 17.144.030

EXHIBITS: **Exhibit A** by City Staff / Agency:
Exhibit A-1 – Comments from the Department of State Lands

Exhibit B by Applicant:
Exhibit B-1 – Preliminary Plat for Frances J. Collier, dated 9-14-2023, with Shadow / Master Plan concept plat.

Exhibit C by Others: - none received as of the date of this report.

I. REQUEST

The applicant proposes to divide a 5.91-acre parcel into two (2) parcels. Exhibit B-1 is the applicant's Preliminary Partition Plat, showing proposed Parcel 1 at 3.92 acres in size, and proposed Parcel 2 at 1.99 acres in size. Parcel 2 is shown to retain the existing dwelling and two accessory (barn) structures. Parcel 2 is also shown to front the existing street right-of-way of W. Monroe Street (running east-west) and N. Scott Street (running north-south). Parcel 1 is not shown to abut/front existing street right-of-way. The applicant's preliminary plat includes notes that describe the proposal to record a 30-foot-wide easement over the area of Parcel 2. The 30-foot easement is intended for vehicle access and utility extension and is intended to benefit the owner of Parcel 1.

II. PROCEDURE

Partitions are subject to the Type II process as described CDC Section 17.188.020. As such, a public hearing (quasi-judicial, described in CDC Section 17.196) is required before the Carlton Planning Commission. Key dates are:

- August 7, 2023 – City received application, plans, materials, and fee.
- September 1, 2023 - City deemed application package incomplete.
- September 27, 2023 – Applicant resubmitted attached plans / materials (Exhibit B-1) to city.
- October 3, 2023 – City deemed application complete as of date received / start of 120-day clock.
- October 20, 2023 - City mailed require notice to property owners in 100 feet.

All plans / materials received were forwarded to agency representatives at the Oregon Department of Transportation (ODOT), the Department of State Lands (DSL), Yamhill County and applicable private utility companies. The city also forwarded plans / materials to the City Engineer, the City Public Works Director and the Carlton Fire District Chief. Comments from the City Engineer are shown within this report. Comments from the Department of State Lands are shown to Exhibit A-1. As of the date of this report, the city has received no other agency comments.

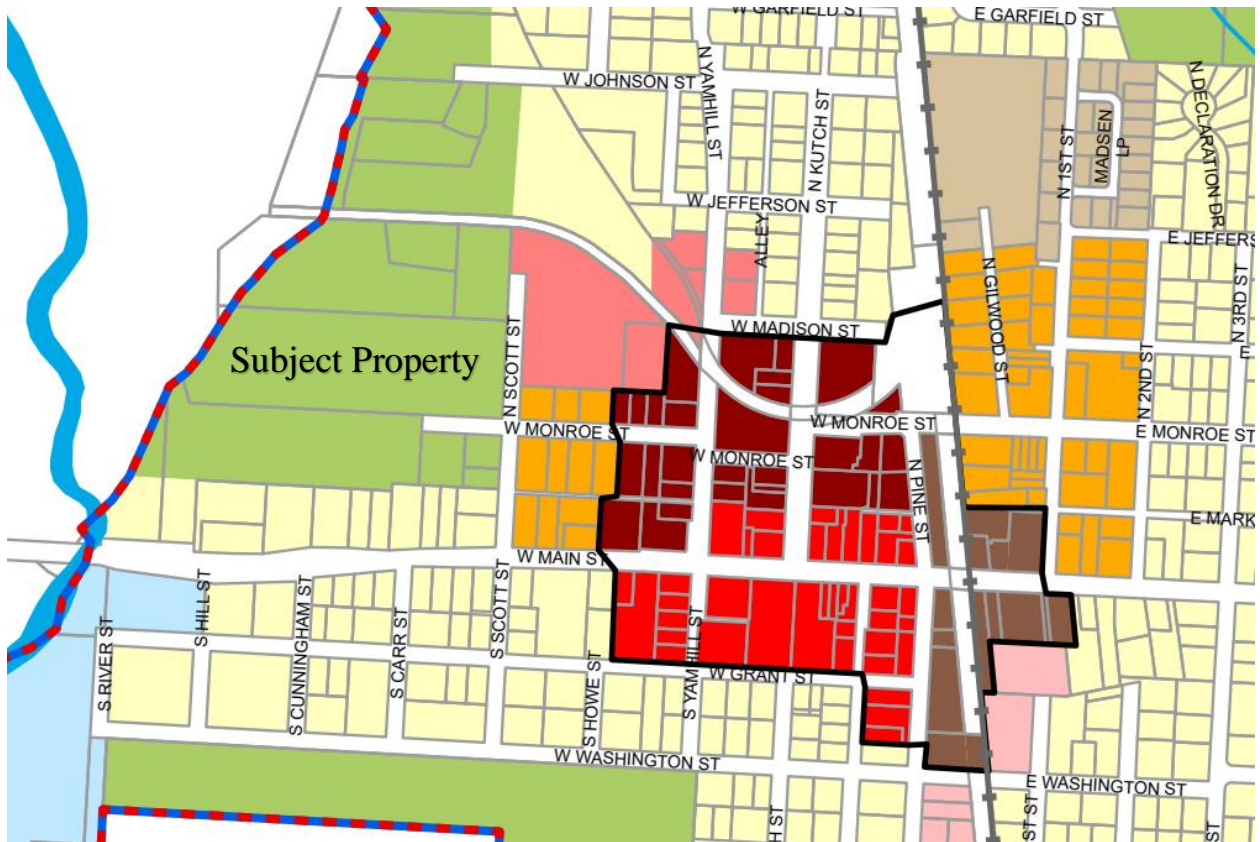
III. APPEAL

Appeals are governed by the Carlton Development Code, CDC Section 17.204. An appeal of the Commission's decision shall be made, in writing, to the City Council within 10 days of the Planning Commission's final written decision.

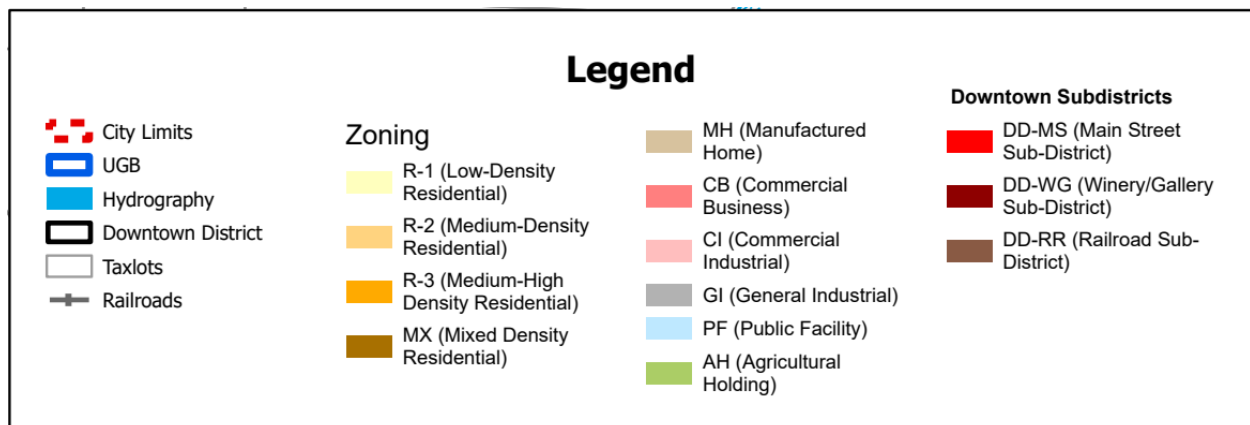
IV. SITE AND SURROUNDINGS

The subject property contains one single-family dwelling and accessory buildings. A small portion of the property (northwest corner) is encumbered by the 100-year floodplain of Yamhill River. Primary vehicle access to the existing dwelling / site is from N. Scott Street. The applicant's Preliminary Partition Plat (Exhibit B-1) shows the location of an existing gravel driveway serving the site. Shown to the same plan are other existing site conditions, including existing fence and the location of all wet utility lines (sanitary sewer, water and storm drainage lines). Right-of-ways of W. Monroe Street and N. Scott Street are unimproved along respective frontage (mostly gravel, no curb sidewalk or gutter). To the north and south of subject property are other properties zoned AH that also contain single-family dwellings and accessory structures. On the opposite side of N. Scott Street are properties zoned Commercial-Business (C-B) and properties zoned Medium High Density Residential (R-3). A portion of the Carlton Zoning Map is shown below.

Below is a portion of the current City Zoning Map, specific to the area of Partition consideration.



North is top



V. CRITERIA AND FINDINGS:

Criteria for Partitions approval are found in Section 17.172 of the Carlton Development Code. Applicable subsections are described (*italics*) below

Section 17.172.010 Applicability

A partition is required for any land division that creates two or three parcels in a calendar year. The parcels shall meet the Development Standards for a Land Division of Section 17.88, other applicable development standards and the following additional requirements:

A. Each parcel shall satisfy the dimensional standards of the applicable zoning district, unless a variance from these standards is approved.

B. Adequate public facilities shall be available to serve the existing and newly created parcels.

Findings: In response A above, the subject property is zoned Agricultural Holding (AH) and is subject to the zone-based standards described in CDC Section 17.48.050. The AH zone requires that all single-family dwelling lots have a minimum lot area of 7,500 square feet. Proposed lot sizes for Parcels 1 and 2 are shown to exceed the minimum size. The AH zone does not describe a standard for minimum lot width and depth. Building setbacks for the AH zone include 20 feet from a street and front property line, 15 feet from a rear line and five feet from a side property line. In the AH zone, maximum building height is 45 feet. Staff observe an existing accessory structure on Parcel 2 shown 12 feet from the new property line as proposed. Minimum setback from this line (a side) would be five feet.

Staff finds each proposed parcel to satisfy the zone-based standards of the AH zone.

Findings: In response B above, below are comments provided by the City Engineer:

Currently the property has water, sewer and access to public ROW.

- There is a 6" water line on W. Monroe St.
- There is a 16" sanitary sewer line on W. Monroe St.
- There is ROW along the frontage of parcel 2 on W Monroe St. and Scott St.
- They have proposed a 30' wide easement for access and utilities to parcel 1 across parcel 2. So service can be brought to parcel.

The water and sewer service lines should be constructed for parcel 1 connecting to the City pipes and constructed through the easement area.

Staff refer again to the applicant's Site Plan (Exhibit B-1) that depicts the location of existing public utilities serving the subject property and properties in the vicinity. The existing sanitary sewer line on W. Monroe Street is shown to be extended west past the existing right-of-way (where a manhole is show). The manhole is observed to be located within existing public utility easement at this location.

Staff observe each parcel to remain of sufficient size to operate agricultural uses identified in CDC 17.48.020, and that the applicant's materials / plans do not show intent for creating a new residential lot.

Below is the use description shown under AH zone permitted uses (17.48.020) specific to residential.

- C. One-single family dwelling or a single-manufactured home subject to Chapter 17.116 for owners, operators, or help required to carry-out a use specified in subsection A of this section, contingent upon the availability of sewer and water services.*

In review of C (above) if residential were introduced to Parcel 1 in the future, the current AH zone is shown to limit the number to one and the dwelling must be associated with an allowed agricultural use, also identified by this zone. In part, staff observe how the AH zone purpose statement (described in 17.48.010) explains how conversion of AH property to a non-agricultural use requires a zone change in accordance with Chapter 17.180.

In review of the applicant's plans to create two large parcels with the city AH zone, and with restrictions and limits of the AH zone in place, staff is unable to make findings to support of right-of-way dedication (e.g., potential west extension of W. Monroe Street) and street improvements along respective street frontages (inclusive of curbs, sidewalk and gutter). Staff acknowledge the "rough proportionality" test as described in the U.S. Supreme Court case of *Dolan v. City of Tigard* (1994). A key ruling of this case places the burden on municipalities to make "some sort of individualized determination that the required dedication is related both in nature and extent to the impact of the proposed development." In review of the applicant's partition proposal, staff observe how the zone AH limits the number of dwellings per lot (to one) which is the extent of impact.

Staff acknowledge how the subject property may be subject to future a zoning map amendment and potential future land division or other future development proposal. A separate staff report will be prepared in that event and standards related to streets and utilities will be evaluated. For the current Partition, the City Engineer recommends water and sewer service lines to be constructed / provided for Parcel 1 connecting to the City pipes through the easement area. Staff has proposed a condition of approval accordingly.

17.172.020 General provisions.

- A. Partition approval is valid in perpetuity, upon recording of the final surveyed plan.*

Findings: Staff proposes a condition of approval that requires a final plat, subject to review by the city and to be recorded by Yamhill County. According to CDC 17.172.05.A, within eighteen months of the final decision approving a preliminary plat, a final survey of the approved plat shall be recorded.

- B. No parcel within an approved partition may be redivided within the same calendar year in which it was recorded, except through the subdivision process.*

Findings: Staff finds the subject property has not divided earlier this calendar year.

- C. A master plan for development is required for any application that leaves a portion of the subject property capable of replatting.*

Findings: As both proposed parcels are shown to exceed the AH zone minimum lot standard of 7,500 square feet, staff finds a master (concept) plan is applicable. Staff refer to Exhibit B-1, which includes the

applicant's master / shadow plat. Additional findings in response to the master / shadow plan are explained herein.

Section 17.172.030 Process

Preliminary plats for partitions shall be reviewed in accordance with the Type II review procedures.

Findings: Staff refer to page 2 of this report (describing process).

***** [Subsections 17.172.040 – to 17.172.050 speak to application submittal requirement and final pat approval (within 18 months of preliminary partition approval)]

17.88 Development Standards for Land Divisions

Below are standards of Development Code found in Section 17.88, applicable to this request. According to Section 17.88.020 (scope) *The provisions of this chapter shall apply to all subdivisions, planned unit developments and partitions within the City of Carlton.*

Section 17.88.030 Standards for Lots or Parcels

A. *Minimum lot area: Minimum lot area shall conform to the requirements of the zoning district in which the parcel is located.*

Findings: As described above, the proposed two parcels comply with the minimum AH Zone lot size (minimum of 7,500 square feet).

B. *Maximum lot area: When single family residential use is proposed for a lot with an area double or greater than the minimum density of the underlying zone the Planning Commission may take into consideration the potential for further division of the lot at a future date.*

Findings: The proposed parcels 1 and 2 are both large enough to support further subdivision. Staff refer to the applicant's preliminary concept plan / shadow plat where one further land division scenario is shown. Staff observe how the master plan has been designed to satisfy the standard in A of CDC 17.172.020 (*General provisions*, above). The concept plan has not been evaluated for consistency with development standards (AH or other zones).

C. *Lot Width and Depth. The depth of a lot or parcel shall not be more than three times the width of the parcel, with the following exceptions:*

1. *Parcels created for public utility uses or in zones where there is no minimum lot area requirement shall be exempt from width to depth ratio provisions.*
2. *Lots within residential zones where the permitted minimum lot width is less than forty (40) feet may be permitted to have a width-depth ratio of no greater than 5:1*

Findings: Proposed width shown for Parcel 1 is 289.49 feet and proposed lot depth is approximately 607 feet (an average). Accordingly, lot depth of proposed Parcel 1 is not shown more than three times the

width as the standard in C describes. The proposed width of Parcel 2 (corner lot) is 300 feet wide and 289 feet in depth. Accordingly, lot depth for Parcel 2 is not more than three times the width.

D. Access. All lots and parcels created after the effective date of the ordinance codified in this title shall provide a minimum frontage, on an existing or proposed public street, equal to twenty (20) feet. An exception shall apply when residential lots or parcels and planned unit developments, may be accessed via a private street or easement developed in accordance with the provisions of Chapter 17.64 or when the city finds that public street access is:

- 1. Infeasible due to parcel shape, terrain, or location of existing structures; and*
- 2. Not necessary to provide for the future development of adjoining property.*

Findings: As previously mentioned, proposed Parcel 1 is not shown to front W. Monroe Street or N. Scott Street. Accordingly, applicant's plan includes an easement over Parcel 2, to benefit Parcel 1, primarily for vehicle access purposes. Staff refer to the applicant's plan set that shows the the location of this proposed easement (at 30 feet in width) localized in the southwest corner of Parcel 2. Staff also incorporate the findings in response to Chapter 17.64 (stated herein).

While lots shown to the concept / shadow plat are not subject to consideration via this Partition, staff finds the configuration and width of the proposed access easement (at 30-feet) to be insufficient for accommodating safe travel and circulation for several vehicles if the concept plan were subject to preliminary subdivision consideration. Staff refer to the earlier part of this report, explaining how conversion of AH property to a non-agricultural use requires a zone change in accordance with Chapter 17.180. Currently, staff finds a public street frontage (of 20-feet) on the applicant's property to be unnecessary for providing future development of the adjoining property (also zoned AH) as the adjoining property is shown to have the stub of W. Monroe Street right-of-way. Staff also observe how the boundary line shown between proposed Parcels 1 and 2 could be adjusted to make the 20-foot frontage. The building setback distance of the AH zone (five feet) would need to be met, as measured from the adjusted line to the existing dwelling on Parcel 2.

E. Flag Lots. If a flag-lot is permitted, the following standards shall be met:

- 1. The access strip shall not be less than twenty (20) feet wide. The access strip shall be improved with minimum twelve (12) foot wide paved driveways that meet applicable city standards. If said access strip is over two hundred (200) feet in length, the driveway shall terminate in a turn-around capable of accommodating emergency fire vehicles;*
- 2. The access strip shall not be included in the calculation of lot area for purposes of determining compliance with any minimum lot size provision of this title.*

Findings: No flag lots are proposed. Staff finds Criterion E is not applicable. Staff observe flag lots shown to the concept master / shadow plat and incorporate the findings stated above (explain how lots in concept plan are not subject to review of standards).

F. Through Lots. Through lots shall be avoided except where essential to provide separation of residential development from major traffic arteries, adjacent nonresidential activities, or to

overcome specific disadvantages of topography and orientation. A ten (10) foot wide screening or buffering easement, pursuant to the provision of chapter 17.84, may be required by the city during the review of the land division request.

Findings: No through lots are proposed within the proposed subdivision. Staff finds Criterion F is not applicable.

G. Lot Side Lines. The side lines of lots, as far as practicable, shall run at right angles to the right-of-way line of the street upon which the lots face.

Findings: Side lot lines are shown to run at right angles to the street upon which the lots face to the degree practicable. Staff finds the standard is met. Staff also observe how the proposed lot line shown to divide Parcels 1 and 2 might not run at a right angle to the street (W. Monroe) if the line is adjusted to meet the 20-foot frontage standard as explained in D above.

H. Lot Grading. The minimum elevation at which a structure may be erected, taking into consideration the topography of the lot, the surrounding area, drainage patterns and other pertinent data, shall be established by the building inspector.

Findings: Lot grading is not proposed as part of this partition. Existing / finished grades of proposed lots is appropriate for future land division consideration.

I. Utility Easements. Utility easements shall be provided on lot areas where necessary to accommodate public utilities. Such easements shall have a minimum total width as specified in Section 17.76.020.

Findings: Water service is provided in W. Monroe Street and the City Engineer has determined that an easement width of 30 feet is sufficient. There is also existing public utility easement beyond the stub of W. Monroe Street (not shown to the applicant's plan) available for sanitary sewer access.

Section 17.88.050 Improvement requirements.

Staff observe several code provisions under Section 17.88.050 that would be subject to consideration in review of a different application. For PAR 2023-01, the proposal entails a two-parcel land division within the city AH zone, and with use restrictions and limits in place. For reasons explain herein, staff is unable to make supportive findings for requiring right-of-way dedication and street improvements along respective street frontages.

17.64.070 - Access easements.

A private access easement created as the result of an approved partitioning shall conform to the following:

A. Partition access easements shall only be allowed where the applicable criteria of Section 17.88.030(D) are satisfied. The easement shall comply with the following standards:

1. Minimum width: twenty (20) feet;

2. *Minimum paved or curb to curb width: twenty (20) feet;*
 3. *Maximum length: two hundred fifty (250) feet;*
 4. *No more than three dwelling units shall have sole access to the easement.*
- B. *Unless otherwise specified in the Standard Specifications for Public Works Construction in the City of Carlton, all private streets serving more than two dwelling units shall be constructed to the same pavement section specifications required for public streets. Provision for the maintenance of the street shall be provided in the form of a maintenance agreement, homeowners association, or other instrument acceptable to the city attorney.*
- C. *A turn-around shall be required for any access easement which has only one outlet and which is in excess of two hundred (200) feet long or which serves more than two residences. Turn-arounds shall be either a circular turn-around with a minimum paved radius of thirty-five (35) feet, or a "tee" or "hammerhead" turn-around with a minimum paved dimension across the "tee" of seventy (70) feet and a twenty (20) foot width with appropriate radius at the corners.*
- D. *All private access easements serving more than two residences shall be designated as fire lanes and signed for no parking.*

Findings: Staff incorporate the findings as stated above. A private access easement will be created as a result of partitioning, and the easement will provide for vehicle and utility access purposes.

VI. CONCLUSIONS AND RECOMMENDATION

Staff recommends approval of the Preliminary Plan for Partition 2023-01, subject to the following conditions:

1. Prior to final plat approval, design drawings and specifications for water and sewer lines for service to Parcel 1 (connecting to the City pipes and constructed through the easement area) are to be submitted to the city prior to constructing any improvements. These service lines are to be subsequently constructed after city approval. Other items, identified below, shall be accomplished prior to final plat approval.
2. The easement description for vehicle and utility access, benefiting the owner of Parcel 1 shall be reviewed and approved by the City Attorney and recorded with the partition final plat, with access width and location also shown to the recorded final plat.
3. Final Plat: Prior to expiration, the applicant shall submit three (3) identical reproducible copies of the final plat for signature. The final plat shall be submitted to the City in a form and with information consistent with Development Code Section 17.176.050 including monuments, benchmarks and other County survey and map standards, and State laws including ORS Chapter 92 for plats of record.

VII. PLANNING COMMISSION ACTION - MOTION OPTIONS

- A. To approve the Preliminary Partition 2023-01, based on findings as stated in the staff report and subject to conditions of approval therein, or
- B. To approve the Preliminary Partition 2023-01, based on findings as stated in the staff report and subject to conditions of approval therein, as amended by the Commission (describe amend).
- C. To deny the Preliminary Partition Plan 2021-01 stating how the application does not meet the required / applicable standards.
- D. To continue the hearing to a time certain *

*Considering the 120-day decision time limit on applications.



Wetland Land Use Notice Response

Exhibit A-1

Response Page

Department of State Lands (DSL) WN# *

WN2023-0689

Responsible Jurisdiction

Staff Contact	Jurisdiction Type	Municipality
Aimee Amerson	City	Carlton
Local case file #	County	
PAR 2023-01	Yamhill	

Activity Location

Township	Range	Section	QQ section	Tax Lot(s)
03S	04W	21	C	2400

Street Address

629 West Monroe St

Address Line 2

City

Carlton

Postal / Zip Code

97111

State / Province / Region

OR

Country

Yamhill

Latitude

45.295760

Longitude

-123.183348

Wetland/Waterway/Other Water Features

- There are/may be wetlands, waterways or other water features on the property that are subject to the State Removal-Fill Law based upon a review of wetland maps, the county soil survey and other available information.

Your Activity

- A state permit will not be required for the proposed project because, based on the submitted site plan, the project avoids impacts to jurisdictional wetlands, waterways, or other waters.

Applicable Oregon Removal-Fill Permit Requirement(s)

- A state permit is required for 50 cubic yards or more of fill removal or other ground alteration in wetlands, below ordinary high water of waterways, within other waters of the state, or below highest measured tide.

Closing Information

Additional Comments

A partition per se requires no removal and fill. Therefore, no state permit needed.

This is a preliminary jurisdictional determination and is advisory only.

This report is for the State Removal-Fill law only. City or County permits may be required for the proposed activity.

Contact Information

- For information on permitting, use of a state-owned water, wetland determination or delineation report requirements please contact the respective DSL Aquatic Resource, Proprietary or Jurisdiction Coordinator for the site county. The current list is found at: <http://www.oregon.gov/dsl/ww/pages/wwstaff.aspx>
- The current Removal-Fill permit and/or Wetland Delineation report fee schedule is found at: <https://www.oregon.gov/dsl/WW/Documents/Removal-FillFees.pdf>

Response Date

9/25/2023

Response by:

Matthew Unitis

Response Phone:

503-986-5262

Preliminary Partition Plat for: Frances J. Collier Revocable Living Trust

Location: NE 1/4 Section 21, Township 3 South, Range 4 West of the Willamette Meridian
City of Carlton, Yamhill County, Oregon

Tax Lot: 3421AC - 2400

Date: 27 September 2023

TAX LOT: 3421AC - 2300
HARROUN
INST. NO. 200513905

TAX LOT: 3421AC - 2200
PATTERSON
INST. NO. 201912066

TAX LOT: 3421 - 700
HILTON/MESKILL/BURNS
INST. NO. 201207914

TAX LOT: 3421AC - 2400
**FRANCES J. COLLIER
REVOCABLE LIVING TRUST**
INST. NO. 200316905

PARCEL 1
3.92 Acres ±

PARCEL 2
1.99 Acres ±

TAX LOT: 3421DB - 1800
**FRANCES J. COLLIER
REVOCABLE LIVING TRUST**
INST. NO. 200316904

OWNER:
FRANCES J. COLLIER REVOCABLE LIVING TRUST
2662 NW PINEHURST DRIVE
MCMINNVILLE, OR 97128

CONTACT:
STEVE SAMPSON
971-241-2820

SITE ADDRESS:
629 W. MONROE STREET
CARLTON, OR 97111

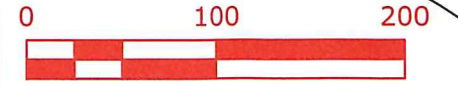
ZONING: AGRICULTURAL HOLDING (AH)

BY : LELAND MACDONALD & ASSOC., LLC
FORMERLY DBA MATT DUNCKEL & ASSOC.
3885 RIVERSIDE DRIVE
MCMINNVILLE, OREGON 97128
PHONE : 503-472-7904
FAX: 503-472-0367
EMAIL: LEE@MACDONALDSURVEYING.COM

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
January 16, 2002
LELAND A. MACDONALD
53226

Renews 31 December 2024
#9877

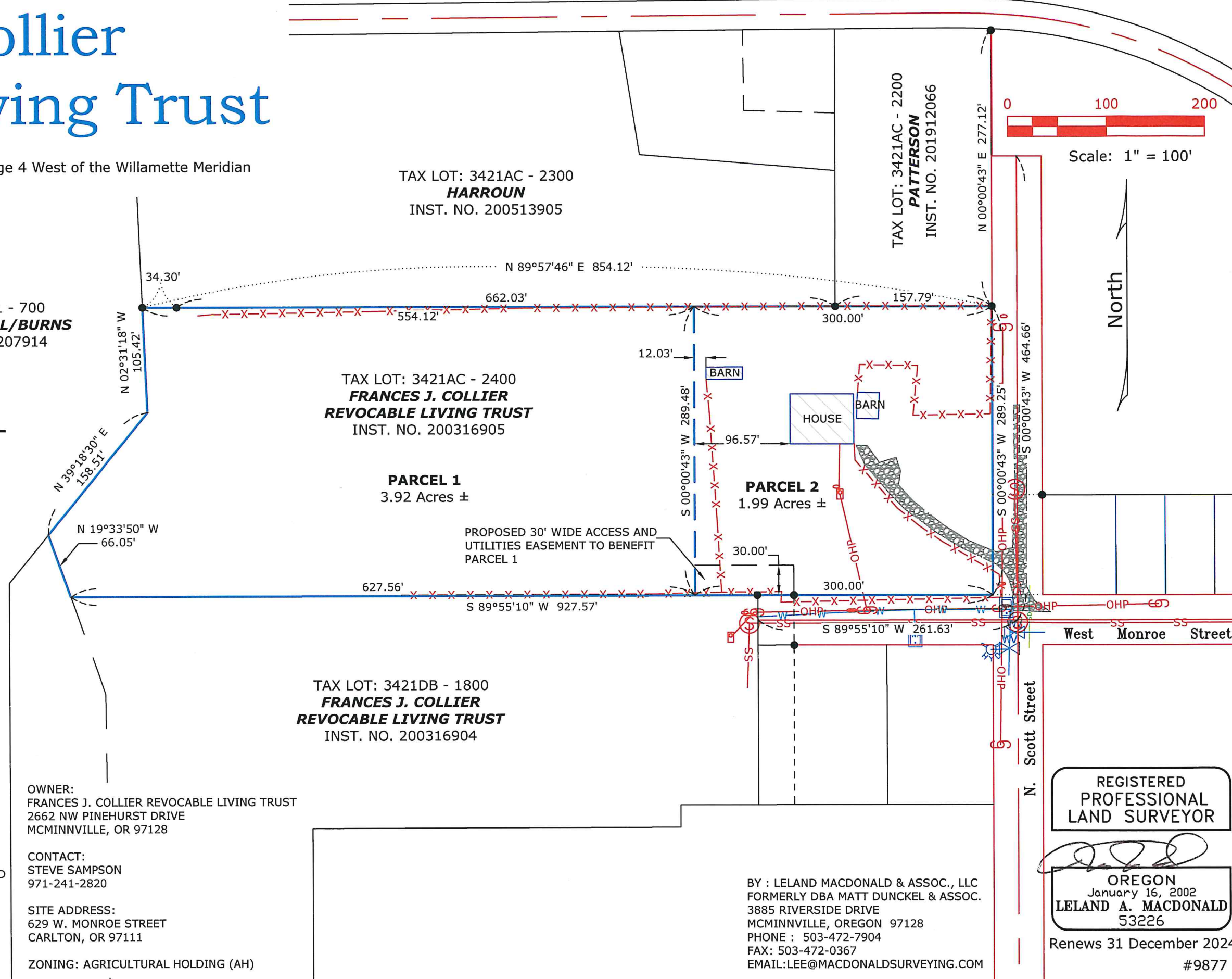


Scale: 1" = 100'



Legend

- = MONUMENT FOUND
- = WATER VALVE
- = WATER METER
- = FIRE HYDRANT
- = POWER METER
- = POWER POLE
- = GUY ANCHOR
- = SANITARY SEWER MANHOLE
- = PROPERTY LINE
- = PARTITION LINE
- = PROPOSED EASEMENT
- = OVERHEAD POWER
- = UNDERGROUND POWER
- = EDGE OF ROCK
- = SANITARY SEWER LINE
- = STORM DRAIN LINE
- = WATER LINE
- = CENTERLINE OF PUBLIC ROAD
- = FENCE
- = GRAVEL
- = BUILDING



Shadow Plat for: Frances J. Collier Revocable Living Trust

Location: NE 1/4 Section 21, Township 3 South, Range 4 West of the Willamette Meridian
City of Carlton, Yamhill County, Oregon

Tax Lot: 3421AC - 2400

Date: 27 September 2023

TAX LOT: 3421 - 700
HILTON/MESKILL/BURNS
INST. NO. 201207914

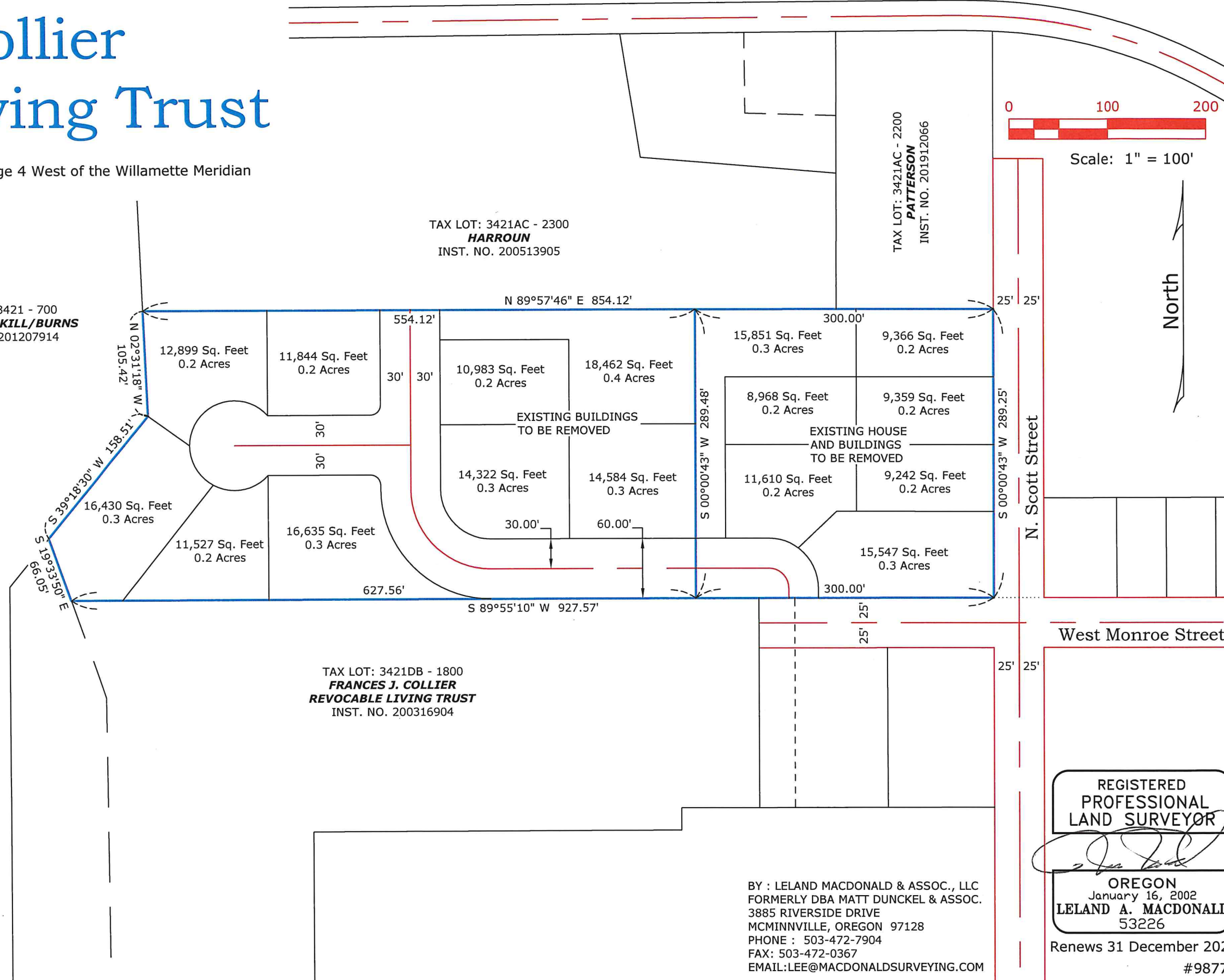
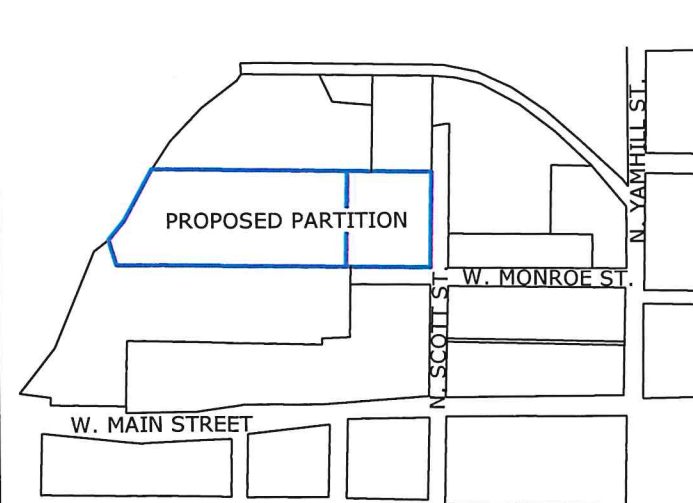
OWNER:
FRANCES J. COLLIER REVOCABLE LIVING TRUST
2662 NW PINEHURST DRIVE
MCMINNVILLE, OR 97128

CONTACT:
STEVE SAMPSON
971-241-2820

SITE ADDRESS:
629 W. MONROE STREET
CARLTON, OR 97111

ZONING: AGRICULTURAL HOLDING (AH)

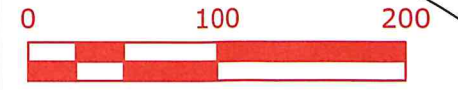
VACINITY MAP



TAX LOT: 3421AC - 2300
HARROUN
INST. NO. 200513905

TAX LOT: 3421AC - 2200
PATTERSON
INST. NO. 201912066

TAX LOT: 3421DB - 1800
**FRANCES J. COLLIER
REVOCABLE LIVING TRUST**
INST. NO. 200316904



Scale: 1" = 100'



BY : LELAND MACDONALD & ASSOC., LLC
FORMERLY DBA MATT DUNCKEL & ASSOC.
3885 RIVERSIDE DRIVE
MCMINNVILLE, OREGON 97128
PHONE : 503-472-7904
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City of Carlton, Yamhill County, Oregon

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PATTERSON
INST. NO. 201912066

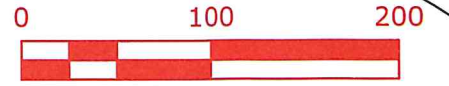
TAX LOT: 3421DB - 1800
**FRANCES J. COLLIER
REVOCABLE LIVING TRUST**
INST. NO. 200316904

OWNER:
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971-241-2820

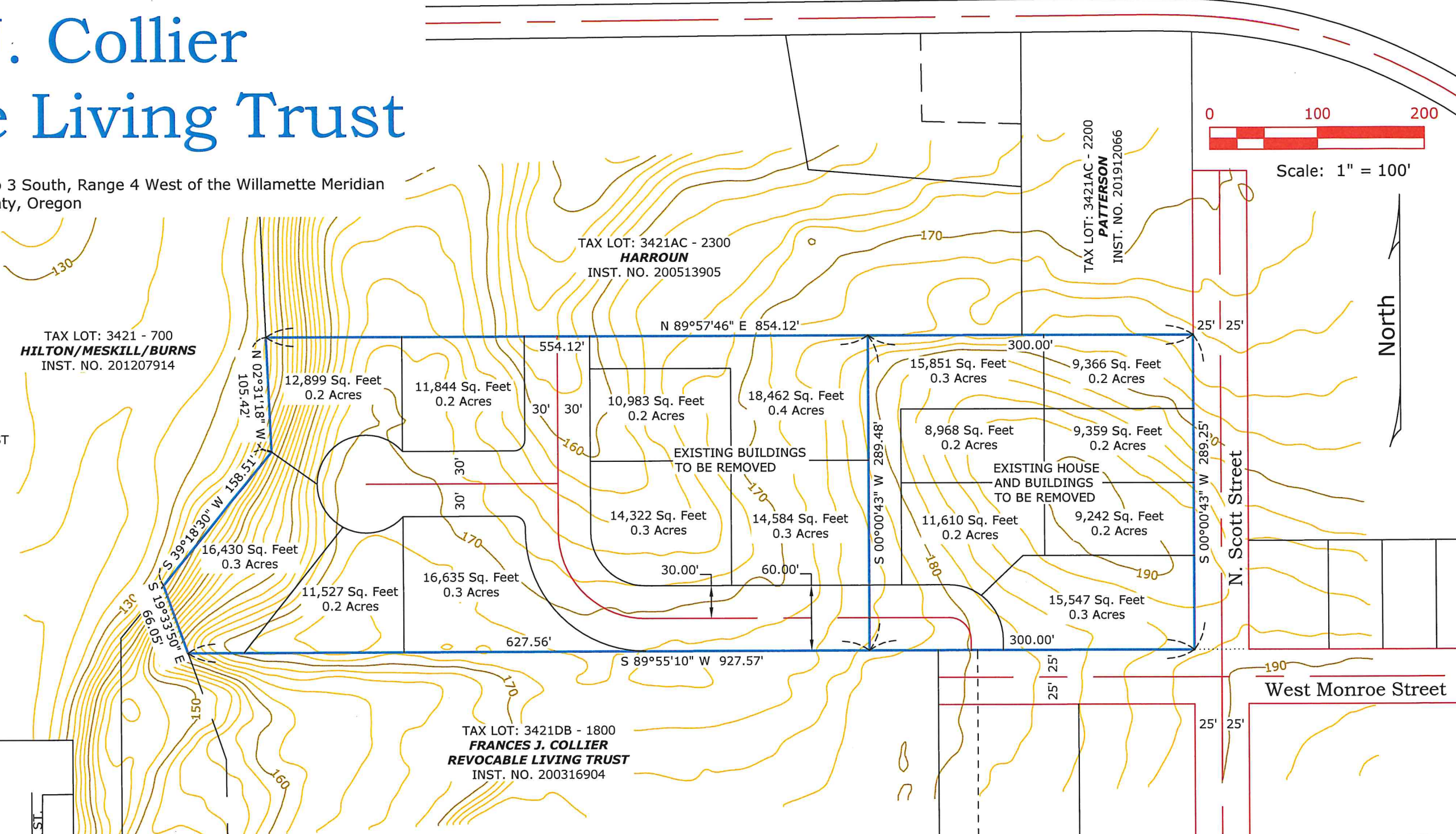
SITE ADDRESS:
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ZONING: AGRICULTURAL HOLDING (AH)

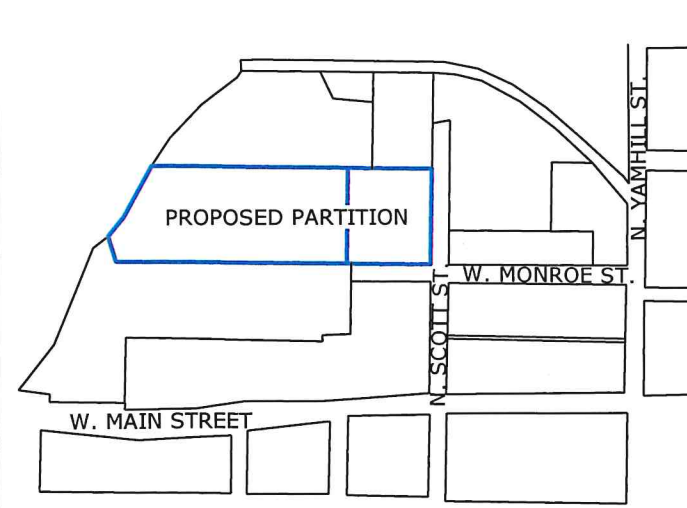


Scale: 1" = 100'

North



VACINITY MAP



BY : LELAND MACDONALD & ASSOC., LLC
FORMERLY DBA MATT DUNCKEL & ASSOC.
3885 RIVERSIDE DRIVE
MCMINNVILLE, OREGON 97128
PHONE : 503-472-7904
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January 16, 2002
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Renews 31 December 2024

#9877



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**CITY OF CARLTON
PLANNING COMMISSION
STAFF REPORT**

SUBJECT: Public Hearing for 2nd Street Preliminary Subdivision

REPORT / HEARING DATE: November 6, 2023 / November 13, 2023

APPLICANT: Max and Janette Nardoni

APPLICANT REPRESENTATIVE: AKS Engineering & Forestry, LLC

PROPERTY OWNER: Entrust Group Inc., Jannette Nardoni

FILE NUMBER: SUB 2023-02

REQUEST: Preliminary subdivision approval for 39 residential lots intended for attached and detached dwellings.

SITE LOCATION: Addressed at 751 S. 2nd Street, also shown as Tax Lot 1100 on Yamhill County Tax Assessor’s Map 3-4-22CC. Generally located south of E. Cleveland Street, east of the former Southern Pacific Railroad Right-of-way and Highway 47, and west of the JR Meadows 3 subdivision site.

SITE SIZE: 4.87 acres

PLAN MAP DESIGNATION: Residential (R)

ZONING: Mixed Density Residential (MX)

CRITERIA: Carlton Development Code (CDC) Sections

- Public notice and hearing procedures: 17.192 - 196
- Mixed Density Residential Standards: 17.52
- General Development Standards: 17.60 - 17.140
- Subdivisions: 17.176 – 17.176.050
- Type II Application Processing Type: 17.144.030

EXHIBITS: **Exhibit A by City Staff / Government Agency:**
 Exhibit A-1 – City Engineer’s Comments / Conditions
 Exhibit A-2 – Comments from ODOT Region 2

Exhibit B by Applicant:
 Exhibit B-1 – Applicant response to applicable standards / criteria, updated October 2023 (includes all plans and studies listed as Exhibits A through M under “Contents” page)
 Exhibit B-2 – Traffic Impact Study by Lancaster Mobley

Exhibit C by Others: - One, received late 11-6-2023 (Exhibit C-1)

I. REQUEST

AKS Engineering & Forestry, on behalf of Max and Janette Nardoni, applicant, request preliminary subdivision approval for 39 residential lots. 25 of these lots are intended for future detached single-family dwellings and 14 lots are intended for future attached single-family dwellings. Along the eastern boundary of the subject property, the subdivision proposal includes street frontage improvements to S. 3rd Street, after extension and 3/4 street improvements to S. 3rd Street are completed via the JR Meadows 3 subdivision. The applicant's proposal for 2nd Street Subdivision also includes extension of right-of-way and improvements intended for E. Wilson Street and E. Taylor Street through the property, consistent with the location where these street improvements are shown within JR Meadows 3. Right-of-way and improvements for E. Wilson Street and E. Taylor Street are proposed to be stubbed to the western boundary of the subject property, shown to abut the former Southern Pacific Railroad Right-of-way (S.P.R.R.) currently under control of Yamhill County.

In the north portion of the subject property, the applicant's subdivision proposal identifies extension of S. 2nd Street where currently stubbed for connection with E. Taylor Street within the proposed subdivision. As the applicant's written narrative explains, off-site paving is proposed to that portion of 2nd Street, north of the subdivision, south of E. Cleveland Street to the north. The applicant's proposal also creates one tract of land (identified as Tract A) intended for open space.

II. PROCEDURE

Preliminary Subdivisions are subject to the Type II process as described CDC Section 17.188.020. As such, a public hearing (quasi-judicial, described in CDC Section 17.196) is required before the Carlton Planning Commission. Key dates are:

- June 1, 2023 – City received application, plans, materials, and fee.
- June 22, 2023 - City deemed application package incomplete.
- October 10, 2023 – Applicant resubmitted attached plans / materials (Exhibit B-1) to the city.
- October 10, 2023 – City deemed application complete as of date received / start of 120-day clock.
- October 20, 2023 - City mailed required notice to property owners in 100 feet.

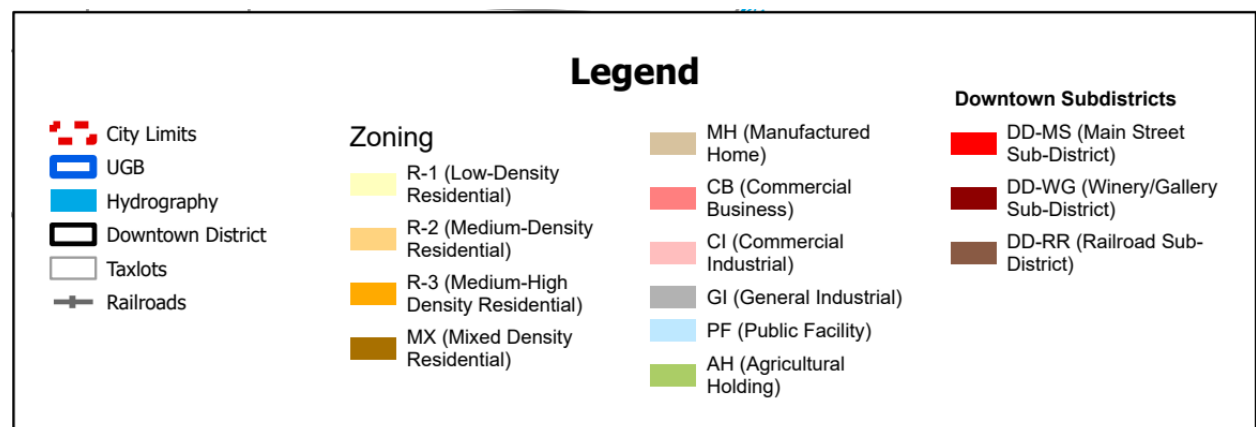
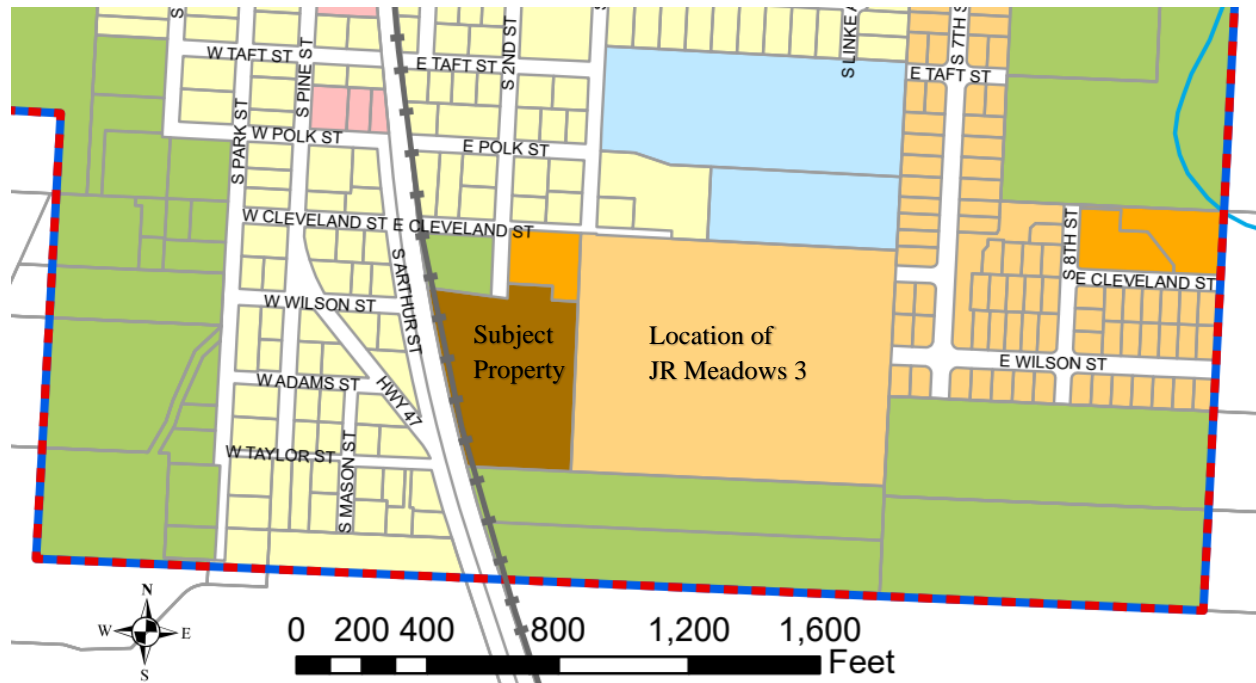
All plans / materials received were forwarded to agency representatives at the Oregon Department of Transportation (ODOT), the Department of State Lands (DSL), Yamhill County and applicable private utility companies. The city also forwarded plans / materials to the City Engineer, the City Public Works Director and the Carlton Fire District Chief. Comments from the City Engineer are shown to Exhibit A-1. Comments from ODOT Region 2 are shown to Exhibit A-2. Yamhill County Public Works responded with an observation: "It appears to me there is no development happening in the County ROW or S.P.R.R ROW, therefore, the County Public Works has no comments." (e-mail of October 12, 2023). As of the date of this report, the city has received no other agency comments.

III. APPEAL

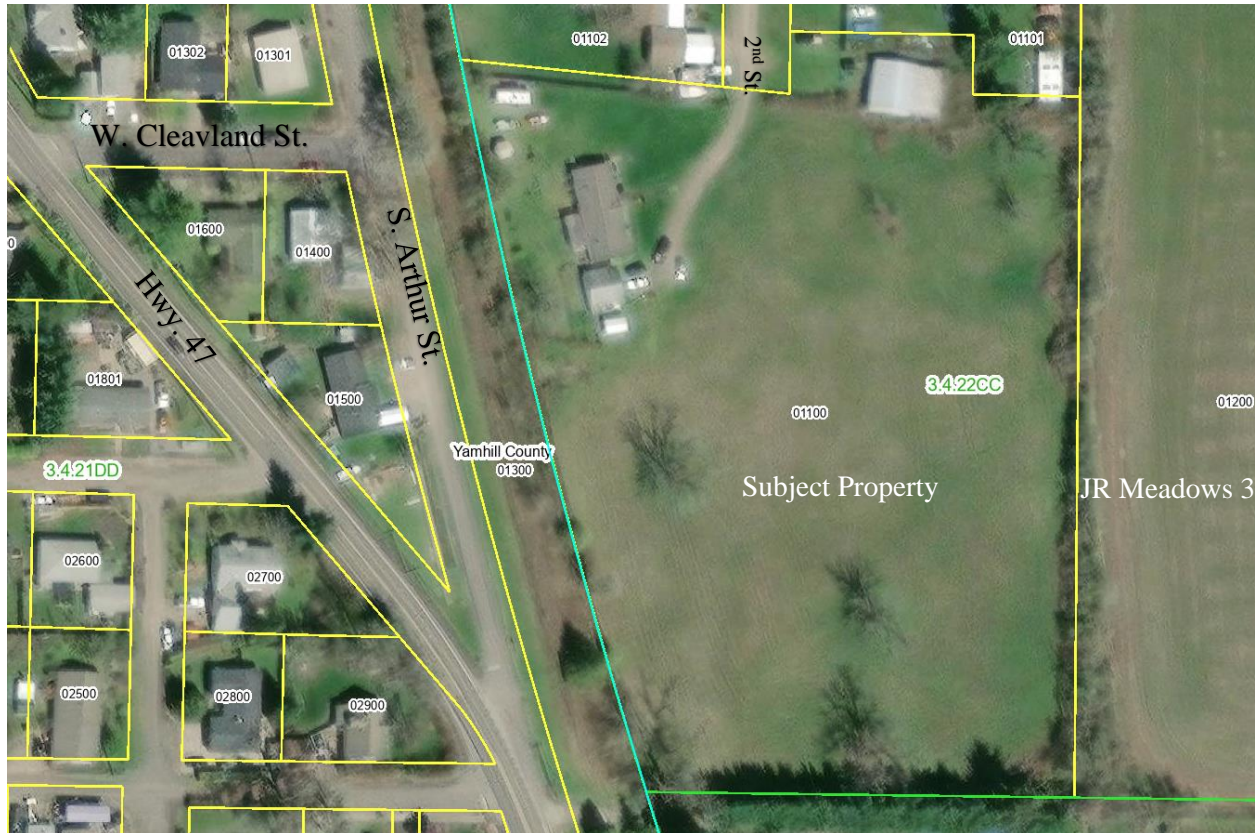
Appeals are governed by the Carlton Development Code CDC Section 17.204. An appeal of the Commission's decision shall be made, in writing, to the City Council within 10 days of the Planning Commission's final written decision.

IV. SITE AND SURROUNDINGS:

Page 3 of the applicant’s written statement (Exhibit B-1) describes the site and surrounding conditions. The subject property contains an existing single-family dwelling and associated outbuildings, all to be removed. Properties to the north are zoned Residential Medium-High Density (R-3) and Agricultural Holdings (AH). These properties also contain existing single-family dwellings. Properties to the south are also zoned AH and contain existing single-family dwellings. To the west is the now abandoned Southern Pacific Railroad (SPRR) right-of-way and to the east is the property subject to recent Preliminary Subdivision approval in May of 2023 (JR Meadows 3) zoned Residential Medium Density (R-2). Below is a portion of the current City Zoning Map, specific to the area of Preliminary Subdivision consideration.



Below is an aerial photo of the subject property, showing location of existing streets - north and west.



V. CRITERIA AND FINDINGS:

Staff also incorporate the applicant's written response provided to applicable development standards of the city MX zone, and the code provisions identified above (in pages 3 through 49, Exhibit B-1).

Below are applicable code provisions specific to the Mixed Density Residential (MX) District (CDC Chapter 17.52)

17.52.020 - Residential density.

To achieve balance and integration of a range of housing types, sizes, and densities, the mixed density residential (MX) zone relies on three (3) criteria.

- A. *The intent of the MX zone is to achieve an overall density of nine (9) dwelling units per net acre of residential land.*
- B. *To reflect the demand for rental and higher-density housing within the region, at least twenty-five (25) percent of the units must be either in multi-family or attached single-family structures, e.g., townhomes or duplexes.*

- C. *To meet the continuing demand for single-family housing while reducing land costs, the majority of residential land in each neighborhood should be for higher-density single-family housing, either detached (generally between six (6) to nine (9) dwellings per net acre) or attached (generally between nine (9) to twelve (12) dwellings per net acre).*

Findings: In part, the applicant's written response to the above refers to the definition of "density" as described under *Definitions* of CDC Section 17.12.020, and how the definition specifically refers to "per gross acre" (not net acre). Additionally, the applicant responds to this topic via cover letter response to the city's application status letter dated June 22, 2023. In part, the applicant refers to a Comprehensive Goal specific to the MX zone that does not describe gross or net. The applicant also refers to past action by the city in response to a different subdivision, located on other property, elsewhere in the city, also zoned MX and how "gross" density was applied in review of that case, roughly two years ago.

Staff observe A (above) to identify "net acre" and observe how the Development Code does not include a definition of "net acre" or codified methodology to help clarify what portions of the gross site area are subtracted to determine the net. Staff also observe a portion of the code provision in C (above) to apply a different / higher minimum density ratio for attached single-family (at 12 dwellings per net acre). The applicant's response to 17.52.020 includes a table (page 4 of written statement) identifying the gross acreage of the site (at 4.87 acres) and multiplies by 9 to show 43 units (indicating maximum). Given that C identifies a higher density for attached (at twelve dwellings per net acre) staff also finds that the applicant could have provided proportional calculations to yield a higher minimum / maximum density range. As "net" is unclear, staff finds in support of A and C above. Given the lack of clarity on this topic, staff has earmarked for future code amendment consideration.

With respect to item B above (*...at least twenty-five (25) percent of the units must be either in multi-family or attached single-family structures, e.g., townhomes or duplexes*) the applicant explains how 14 attached units are proposed which exceeds the minimum of 25% (i.e., shown at 36% of the of total lots proposed at 39). Staff concur and conclude that the applicant's proposal meets the standard for density.

17.52.030 - Permitted uses.

Within any MX zone, no structure shall be used, constructed, erected, or altered, and no lot shall be used or occupied for any purposes except the following:

- A. *Residential dwellings, including single-family, manufactured homes, and multifamily structures.*
- B. *Open space uses.*
- C. *Licensed residential care homes and facilities as defined by ORS 197.660. All residential care homes and residential care facilities shall be duly licensed by the State of Oregon prior to occupancy.*
- D. *Child care facilities, as defined by this title, with ORS 657A.030 and 657A.250 to 657A.450.*
- E. *A single-family vacation rental dwelling unit, when such dwelling obtains a vacation rental dwelling permit in accordance with the vacation rental dwelling conditional use standards and procedures set forth in Chapter 17.125.*

Findings: Staff incorporate the applicant’s written response to the above. In summary, the applicant explains how lots are intended to accommodate residential dwellings. Staff concur.

17.52.040 - Conditional uses.

Findings: No conditional uses have been identified.

17.52.050 - Building setbacks.

A minimum of five (5) foot setback is required from all alleys. For residential uses, a minimum of ten (10) foot setback is required for a front yard (street side) setback. Open covered and uncovered porches may extend within the front setback to within five (5) feet of the front property line. Except as may otherwise be required with the MX zone, there shall be no other minimum building setbacks.

Findings: The applicant’s written response to the above explains how setback standards can be met. The applicant also explains how a Site Design Review application is not subject to review (currently). Staff concur with the applicant’s statement and find that setback standards of the MX zone are achievable.

17.52.060 - Lot requirements.

A. *There are no minimum lot-size requirements, except as lot size is controlled by overall MX zone density and lot coverage requirements.*

Findings: In response to A, the applicant refers to the explanation provided to the density standard.

B. *Lot Frontage. Lots within the MX zone shall have the following street frontage requirements:*

	<i>Maximum</i>	<i>Minimum</i>
<i>Single-Family Residential</i>	<i>100 feet</i>	<i>25 feet</i>
<i>Multifamily Residential</i>	<i>30 feet/unit</i>	<i>6 feet/unit, min. 24 feet</i>

C. *Lot Coverage in the MX Zone. The total lot coverage including area covered by buildings, roofed structures, and impervious paved surfaces, shall not exceed seventy-five (75) percent.*

Findings: Staff incorporate the applicant’s written response to the above for findings in support of B and C. In review of B, the applicant explains how the subdivision is intended for future single-family dwellings and how each lot is shown to have at least 25 feet of street frontage. In response to C, the applicant refers to a future site design review application intended to address / show compliance with the lot coverage standard. Staff observe how the lot coverage standard (at 75%) is achievable and concur for findings in support.

17.52.070 - Building height.

No building height shall exceed three (3) stories or thirty-five (35) feet in height.

Findings: According to the applicant, dwelling units are not part of application scope. The applicant refers to a future site design review application and building permit applications that will show compliance with the height standard. Staff observe how the height standard is achievable and concur for support.

17.52.080 - Building and site design.

All residential structures shall conform to the design standards of Chapter 17.106.

Findings: As previously mentioned, building and site design requirements are addressed through a separate Site Design Review application (for the attached single-family dwellings) and at the building permit application stage for detached single-family dwellings (exempt from Site Design Review). A Site Design Review application is not sought concurrently with this Preliminary Subdivision application. A proposed condition of approval acknowledges future need for Site Design Review application.

General Development Standards – Division III, SDC Chapter 17.60

Staff observe additional development standards for subdivision are found in CDC Chapter 17.60. The applicant’s written statement also responds to these standards (starting on page 7). In part, standards of CDC 17.60 (subsection 17.60.30) identify public facility improvement requirements specific to the type of application (subdivision in this case). These requirements are summarized to a table (portion below).

	Fire Hydrant	Streets	Water Hookup	Sewer Hookup	Storm Drain	Street Lights
Partition, Subdivisions, PUD, or Manufactured Home Park	C-1	Yes	Yes	Yes	Yes	Yes

Yes = Required.

C-1 Fire Hydrants for Commercial, Industrial Expansions, or Residential Uses: One or more fire hydrants are required as per the Uniform Building Code and Uniform Fire Code or if adequate fire flows are not available to the site. If the existing water lines are insufficient to provide adequate fire flows, water lines shall be upgraded to provide sufficient capacity at the developer's expense.

Findings: Staff incorporate the applicant’s written response. The applicant refers to the plan set as submitted, including a preliminary utility plan. The applicant also explains how a streetlight plan will be created in conjunction with Portland General Electric (PGE) and submitted to the city as appropriate, consistent with specifications shown in Carlton’s Design and Construction Standards.

Staff refer to Exhibit A-1, identifying the comments and proposed conditions received from the City Engineer. In part, the City Engineer explains how public facility improvements identified to 2nd Street Subdivision are predicated upon construction of improvements identified for JR Meadows 3 Subdivision and how essential road / utility improvements are not otherwise available. The City Engineer also observes how the JR Meadows 3 development provides major transportation access for lots identified within 2nd Street Subdivision, and the secondary access as required by the Oregon Fire Code.

At the end of this report, staff proposes several conditions of approval. One proposed condition identifies completion of all improvements in JR Meadows 3 prior final plat approval for 2nd Street Subdivision.

Staff acknowledge how a recent phasing proposal introduced for JR Meadows 3 (via different applicant but same representative) shows improvement for Phase 1 thereof to include extension of 3rd Street along the full eastern boundary of 2nd Street Subdivision. Staff acknowledge how the extension of 3rd Street in JR Meadow 3 (via Phase 1 as introduced) would provide the main vehicle access. A single access via 2nd Street to the north (without accesses to S. 3rd Street as proposed) would not satisfy secondary access per the Oregon Fire Code.

17.64- Street Standards

17.64.030 General Provisions

- A. *The location, width, and grade of streets shall be considered in their relation to existing and planned streets, to topographical conditions, to public convenience and safety, and to the proposed use of the land to be served by the streets.*

Findings: In part, the applicant's written response to A, refers to JR Meadows 3. The applicant also explains how the plan for 2nd Street subdivision will extend E. Wilson Street, E. Taylor Street consistent where approved / shown in JR Meadows 3. The applicant further explains how S. 3rd Street is planned (via JR Meadows No. 3 approval) to be improved with a three-quarter street improvement. The applicant refers to the Preliminary Plans prepared for 2nd Street Subdivision and explains how this project includes completing the remaining quarter street improvement for S. 3rd Street.

Staff concur with applicant's statement and confirm that proposed street improvement to the east are shown to align with improvements shown in JR Meadows 3. As previously mentioned, staff also finds in favor of a condition of Preliminary Approval that ensures street improvements of JR Meadows 3 to be completed, before approving the final plat for 2nd Street Subdivision. Currently, no right-of-way or street improvements are present in the area approved for JR Meadows 3.

- B. *Development proposals shall provide for the continuation, and connection to, all streets, bikeways and pedestrian facilities within the development and to existing streets, bikeways and pedestrian facilities outside the development.*

Findings: Staff incorporate the applicant's written response to the above. According to the applicant, this project includes extensions of E. Wilson Street, E. Taylor Street, and S. 2nd Street, as well as improvements to S. 3rd Street. The applicant further explains how proposed street extensions also include pedestrian facilities that connect to existing streets, bikeways, and pedestrian facilities outside the site, as appropriate. The applicant also explains how proposed streets are extended to the boundaries of the site to facilitate future street connections upon development of adjacent properties.

- C. *Alignment. All streets other than minor streets or cul-de-sac, as far as practical, shall be in alignment with existing streets by continuation of the centerline thereof. The staggering of street alignments resulting in "T" intersections shall leave a minimum distance recommended by the city engineer.*

Findings: According to the applicant, this project includes the extension of three public streets (E. Wilson Street, E. Taylor Street, and S. 2nd Street as mentioned). The applicant also states that based on the

existing street patterns surrounding the site, these extensions are in alignment with existing streets. The applicant also states that staggered street alignments are not included in the project.

Staff observe E. Taylor Street within the proposed subdivision to be aligned with what has been approved for E. Taylor Street to the east (or as shown for JR Meadows 3). However, to the west, the proposal to stub E. Taylor Street where shown does not align with existing E. Taylor Street where it connects on the west side of Pine Street / Highway 47. As explained in the findings shown to D (below) staff observe the applicant’s plan set to include two potential/concept future off-site maps (identified as Options 1 and 2). One of these concept plans shows realignment potential for E. Taylor Street (existing to proposed). The other concept plan shows future continuation of E. Taylor Street to Pine Street / Highway 47, resulting in a “T” intersection.

For reasons explained above and in response to D (below) staff is unable to find in support of the standard C. of 17.64.030 - *Alignment*.

D. Future Extension of Streets. In order to promote the development of an efficient network of city streets and connections to state and county roads, development shall provide future street extensions as shown on the Future Street Plan found in the Carlton Transportation System Plan.

Findings: Staff incorporate the applicant’s written response. In part, the applicant refers to the Future Street Plan of the Carlton Transportation Systems Plan (TSP) and explains how the project includes the extension of streets, consistent with this plan. The applicant also explains how bikeways and pedestrian facilities will be extended to the boundaries of the site and how the project scope does not include reserve strips or street plugs. For reference, a portion of the Future Street Plan (Figure 5-4 of the Carlton TSP, 2009) is shown below. Here, E. Taylor Street, classified as a Proposed Local Street (in yellow) is shown to connect with Highway 47 and to align with existing Taylor Street, located on the west side of Highway 47.



As previously mentioned, the applicant’s proposal to stub E. Taylor Street to the western boundary (where shown) does not align with existing Taylor Street where it connects on west side of Highway 47.

Staff also incorporate the City Engineer's comments (Exhibit A-1) referring, in part, to the standard in D of 17.64.030, and the observation on how the applicant's proposal does not align with Taylor Street on the west side of Pine Street / Highway 47. The City Engineer estimates the off-set (measured curb to curb) to be approximately 75-feet.

Two potential/concept future off-site maps (west of the subject property) are included as part of the applicant's materials (Exhibit B-1 of this report / Exhibit L of the applicant's plans). These future off-site concept maps (titled Options 1 and 2) include notes about a street closure.

As shown to the concept map identified as Option 1, the applicant's notes explain how E. Taylor Street (where proposed for stub in 2nd Street Subdivision) can be extended to S. Pine Street / Hwy 47 (i.e., constructed in the future). Option 1 also shows possible future closure of S. Arthur Street, W. Adam Street, and W. Taylor Street in proximity to S. Pine / Highway 47.

As shown to the concept map identified as Option 2, the applicant's notes explain how E. Taylor Street (where proposed for stub in 2nd Street Subdivision) can be extended to S. Pine Street / Hwy 47. Option 1 also shows possible future closure of S. Arthur Street and W. Adam Street but shows realignment of existing E. Taylor Street (in proximity to S. Pine / Highway 47) for potential alignment / connection with proposed E. Taylor Street within the subdivision.

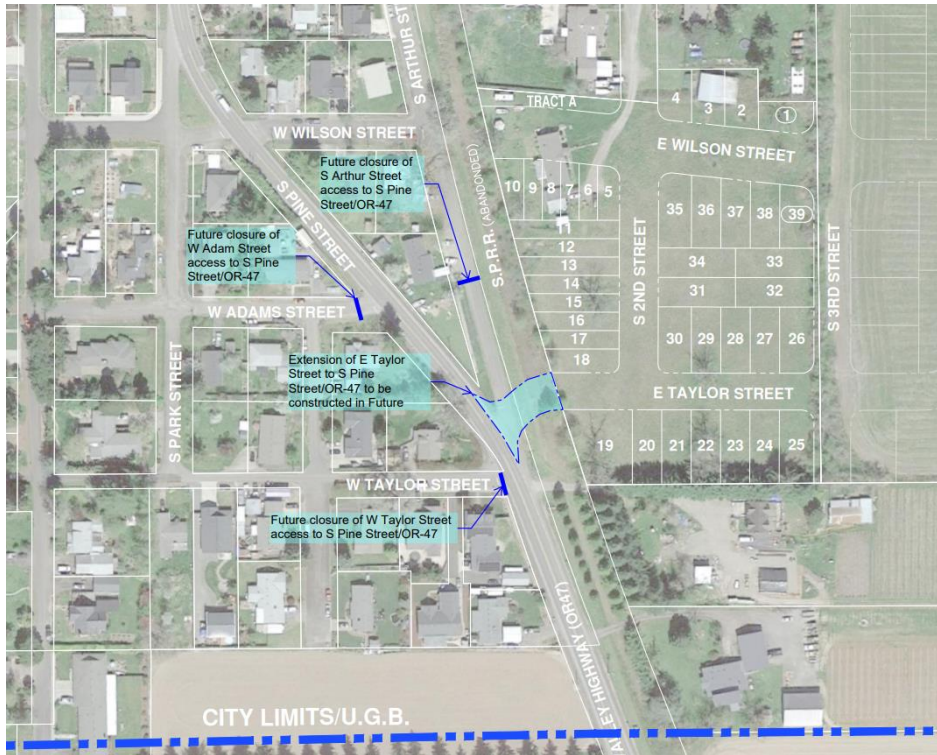
Staff also incorporate the comments from ODOT Region 2 (Exhibit A-2). Options 1 and 2 were reviewed by Casey Knecht, ODOT Region 2. Below are comments received from Mr. Knecht, via email of October 30, 2023, specific to these options:

...Here are some additional comments to help guide the city's decision.

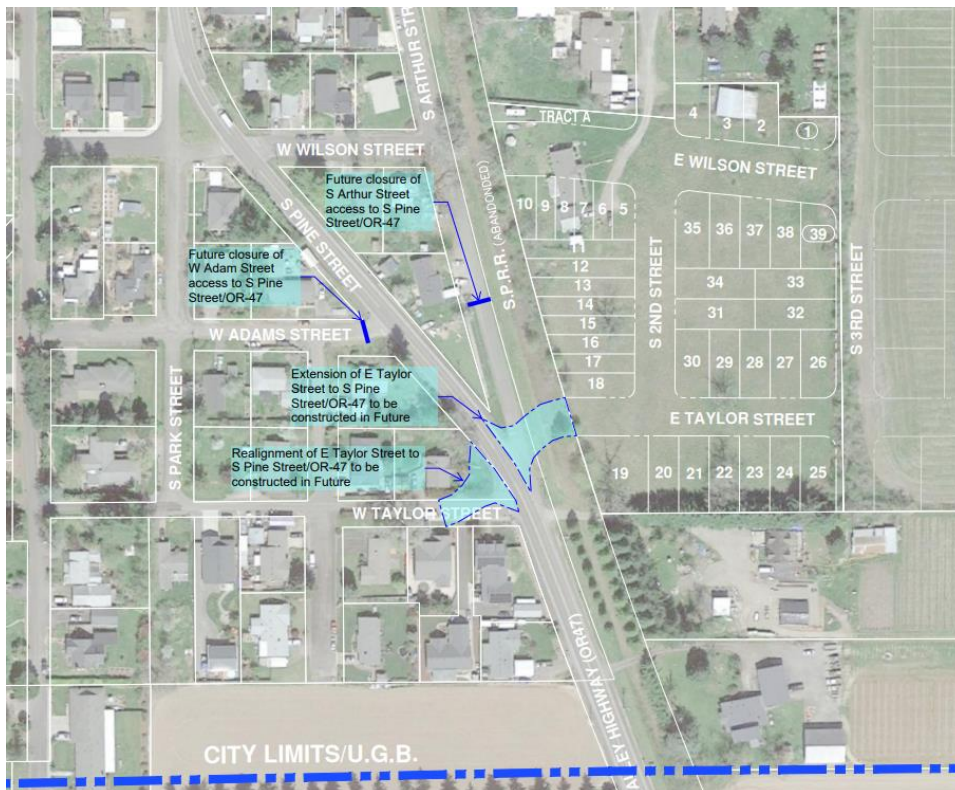
- While the applicant is not currently proposing to connect E Taylor Street to OR-47, the future connection will be difficult for ODOT to approve.
- If/when E Taylor Street is proposed to connect to OR-47, ODOT would first compare the proposal to the city's TSP. The proposed alignment for E Taylor Street differs from what is shown in the TSP and the applicant has not provided justification for this alignment.
- The ODOT Access Management spacing standard for this section of OR-47 is 250' between connections, which is roughly the same distance as the city's north-south block spacing.
- Where possible, connections on opposite sides of the highway should align to minimize turning conflicts. Deviations can be approved when there are limitations with the site such as topography, existing structures, or sight distance. None of those apply to this situation.
- The applicant provided a few concept sketches showing how an offset E Taylor Street could connect to OR-47, but they either require acquisition of private property and/or closure of existing public street connections. None of the options provided enough analysis or justification for the decision to offset E Taylor Street.
- If the city does approve the development with E Taylor in the alignment currently proposed, ODOT recommends that the city condition the applicant to have E Taylor Street terminate on the western property line at the southern property line, so as to be aligned with W Taylor Street.

Options 1 and 2 are shown to the next page.

Option 1 E. Taylor Street Future Offsite Concept Plan, Exhibit EXH-1 of applicant materials package.



Option 2 E. Taylor Street Future Offsite Concept Plan, Exhibit EXH-2 of applicant materials package.



Staff concur with the general comments and observations received from ODOT about the need to acquire private property (Option 2) and/or the need to close certain streets (shown in both options). While access point distances are not shown to either concept option, staff concur with the comments about the access spacing along Highway 47. In review of the last bulleted item (suggesting a condition of approval to have E Taylor Street terminate on the western property line) staff would first need to see the revised layout of lots and streets within the subdivision. However, staff supports the idea of adjusting the location of E. Taylor Street (to the southern property line) for findings of TSP consistency or “...as shown on the Future Street Plan” as D describes, and to avoid “...staggering of street alignments resulting in “T” intersections” as C describes.

For the reasons explained above, staff is unable to find in support of the standard in D.

E. Existing Streets.

1. *Three-quarter improvements to all existing streets adjacent to, within or necessary to serve the property, shall be required at the time of partitioning or subdivision, unless the applicant demonstrates to the satisfaction of the city engineer that the condition and sections of the existing streets meet city standards and are in satisfactory condition to handle projected traffic loads.*
2. *For infill development that does not include partitioning or subdivision, construction of sidewalks, including curb and gutter where necessary, along all property frontages shall be the minimum requirement of development. A three-quarter street improvement shall be required if the city engineer determines that the existing streets are not in condition to handle projected traffic loads.*

Findings: Primary site access is proposed from extension of S. 3rd Street, currently stubbed northeast of the subject property. In part, the applicant’s response to the standard in E refers to JR Meadows 3, and improvements thereof that will include three-quarter street improvement for S. 3rd Street. Staff also incorporate the City Engineer’s comments (Exhibit A-1) and conditions with respect to off-site improvements identified for 2nd Street.

F. New Streets. Where new streets are created, full street improvements shall be required. Three-quarter streets may be approved in lieu of full street improvements on boundary streets when the city finds it to be practical to require the completion of the other one-quarter street improvement when the adjoining property is developed. The city may allow three-quarter street improvements if all of the following criteria are met:

1. *The adjoining land abutting the opposite side of the street is undeveloped; and*
2. *Storm water drainage is provided for on the non-curbed side of three-quarter street improvements in areas judged by the city engineer to have drainage concerns.*

Findings: Staff incorporate the applicant’s written response. In part, the applicant explains how full street improvements are provided for streets internal to the project. The applicant also explains how three-quarters street improvements are planned for a portion of S. 2nd Street that is located outside the boundaries of the subject property, and within the current S. 2nd Street right-of-way.

Staff incorporate the City Engineer's comments (Exhibit A-1) in response to the F above. Staff also observe how all streets internal to the project site are shown intended for full street improvement. Proposed conditions of approval (end of this report) would acknowledge and require construction plan approval by the city for the review of street details, consistent with the Carlton Public Works Design Standards.

G. Cul-de-Sac. Cul-de-sac shall have maximum lengths of four hundred (400) feet and serve no more than eighteen (18) dwelling units. All cul-de-sacs shall terminate with circular turn-a-rounds.

Findings: Staff observe no cul-de-sac proposal as part of the subdivision.

H. Dead-End Streets. When it appears necessary to continue a street or public access way into a future subdivision or adjacent acreage, streets, or public access way shall be platted to a boundary of a subdivision or partition. The street may be platted without a turnaround unless the Planning Commission finds that a turnaround is necessary.

Findings: Staff incorporate the applicant's written response which refers to the City of Carlton TSP and explains how the Future Streets Plan thereof show E. Wilson Street and E. Taylor Street to be continued (west) beyond the project site boundary for eventual connection to Highway 47. Staff supports the applicant's plan to extend E. Wilson Street and E Taylor Street to the site's western boundary (without turn-around) as both are planned to continue. Comments received from City Engineer observe three streets to this subdivision to be temporary dead-end streets and how one street (E. Wilson) is shown to be slightly longer than the length identified in the Oregon Fire Code for apparatus turn-around. As previously mentioned, staff forwarded plans / materials to city staff, agency representatives, including the Carlton Fire District Chief. No comments were received from the Fire Chief. At the end of this report, staff proposes a condition approval that would require a temporary turnaround on E. Wilson Street, if required by the Fire Chief.

Improvements shown to the stub of S. 3rd street finish the $\frac{3}{4}$ street extension to be constructed as part of JR Meadows 3. S. 3rd Street will provide future access to abutting properties (south) if/when these properties are developed.

I. Street Names. Street names and numbers shall conform to the established pattern in the city and shall be subject to the approval of the city. Street names shall be required for all new publicly dedicated streets and private streets.

Findings: All streets within the proposed subdivision are extensions of existing City of Carlton public streets and are named in accordance with the TSP.

J. Grades and Curves. Grades shall not exceed six percent on arterials, ten (10) percent on collectors, or twelve (12) percent on any other public or private street. To provide for adequate drainage, all streets shall have a minimum slope of 0.5 percent. Center line radii of curves shall not be less than three hundred (300) feet on major arterials, two hundred (200) feet on minor arterials, or one hundred (100) feet on other streets, and shall be to an even ten (10) feet. On arterials there shall be a tangent of not less than one hundred (100) feet between reversed curves. Where existing conditions, particularly topography, make it otherwise impractical to provide buildable lots, the Planning Commission may accept steeper grades and sharper curves.

Findings: The proposed street design complies with the provisions of subsection J and will be reviewed again at the time of construction plan submittal.

K. Marginal Access Streets. If a development abuts or contains an existing or proposed arterial street or railroad right-of-way, the city may require marginal access streets, reverse frontage lots with suitable depth, screen planting contained in a non-access reservation along the rear or side property line, or such other treatment as may be necessary for adequate protection of residential properties and to afford separation of through and local traffic.

Findings: Staff incorporate the applicant's written response. In part, the applicant acknowledges the abandoned S.P.R.R. right-of-way along the western site boundary and how the property does not abut or contain any existing or planned Arterial classed streets (in reference to the city TSP). Staff observe how the standard in K appears to be intended as a public safety measure (if the site were abutting an Arterial or active railroad). The site is not next to an Arterial. Therefore, staff agree with the applicant that the standard does not apply.

L. Vision Clearance Area. Vision clearance areas shall be maintained on corner lots at the intersection of all public streets and at the intersections of a public street with a private street as outlined in Section 17.92.080.

Findings: Staff incorporate the applicant's written response. Vision clearance areas shall be maintained in accordance with the provisions of this section and reviewed at time of construction plan submittal. This requirement is included as a condition of approval.

M. Spacing Between Public Road Intersections. Spacing between public road intersections for each functional class of road shall conform to access spacing standards found in Section 17.100.030.

Findings: In response to M, the applicant refers to specific access spacing standards described in CDC Section 17.100.030. All streets internal to the project site are shown to meet public road intersection spacing requirements of Section 17.100.030. Staff incorporate the findings for Section 17.100 (identified herein).

N. Landscape Strip.

[see full standard citation, page 13 of applicant's written statement, Exhibit B-1]

Findings: Staff incorporate the applicant's written response that refers to the Preliminary Plans. In part, the applicant explains how this project includes landscape strips along E. Wilson Street and portions of S. 2nd Street where townhouses are planned, as required by CDC Section 17.64.040. The applicant further explains how the ±5-foot-wide landscape strips are in the public right-of-way between the curb and the public sidewalk. The applicant also states that planned landscape strips meet the provisions of Chapter 17.84.

Staff incorporate the City Engineers comments (Exhibit A-1) within respect to street landscaping. Additionally, staff observe potential for Tract A (northwestern part of site) to be enhanced with landscape

/ street trees to both sides of the sidewalk. Tract A appears too narrow to function as a play area (e.g., sports court). Accordingly, Tract A could be a passive greenspace or utilized in the future (e.g., connection to envisioned multi-use trail within the S.P.R.R right-of-way, abutting). If Tract A is not conveyed / accepted by the city, staff recommends formation of a homeowner's association to maintain.

17.64.040 ROW Improvements and Widths

Findings: Staff incorporate the applicant's written response to the table identified in CDC 17.64.040. The table is also shown to the applicant's written response. Below is a summary of the applicant's proposal.

S. Wilson Street: Classified as a Collector Street (new) improvements include a ±46-foot-wide paved section, ±6-foot-wide bike lanes, ±7-foot-wide on-street parking on either side, curbs, ±5-foot-wide landscape strips, and ±6-foot-wide sidewalks within a ±71-foot-wide right-of-way.

S. 2nd Street: Classified as a Local Street, improvements include a ±34-foot-wide paved section, curbs, and ±5-foot-wide sidewalks on either side within a ±53-foot-wide right-of-way. Additionally, ±5-foot-wide landscape strips are planned along the west side of S 2nd Street within the right-of-way where townhouse lots are present (Lots 5, 11-18).

The applicant also refers to discussion with the City Engineer about off-site improvements to S. 2nd Street (south of E. Cleveland Street / north of the subdivision) planned as part of this project to include ±20 feet of paved section replacing the existing gravel surface.

E. Taylor Street: Classified as a Local Street, improvements include a ±34-foot-wide paved section, curbs, and ±5-foot-wide sidewalks on either side within a ±50-foot-wide right-of-way.

South 3rd Street: 3rd Designated as a school zone Collector, the applicant explains how JR Meadows No. 3 subdivision is planned to improve S. 3rd Street to three-quarter street standards. As part of this application, S. 3rd Street will be improved to meet full street standards for a School Collector, to include a ±9-foot-wide paved section, a ±6-foot-wide bike lane, a curb, and a ±6-foot-wide sidewalk.

The applicant also explains how improvements to S. 3rd Street include a varying right-of-way dedication (between ±4.40 feet and ±9.50 feet) to increase the S. 3rd Street right-of-way to its required width of ±50 feet along the site frontage. Following the planned improvements, the applicant explains how S. 3rd Street will meet the street standards of a ±50-foot-wide right-of-way with a ±34-foot-wide paved section, ±6-foot-wide bike lanes, curbs, and ±6-foot-wide sidewalks.

17.64.050 - Modification of right-of-way and improvement width.

The city, pursuant to the review procedures of Chapter 17.196, may allow modification to the public street standards of Section 17.64.040, when both of the following criteria are satisfied:

A. The modification is necessary to provide design flexibility in instances where:

- 1. Unusual topographic conditions require a reduced width or grade separation of improved surfaces;*
or

2. *Parcel shape or configuration precludes accessing a proposed development with a street which meets the full standards of Section 17.64.040; or*
 3. *A modification is necessary to preserve trees or other natural features determined by the city to be significant to the aesthetic character of the area; or*
 4. *A planned unit development is proposed and the modification of street standards is necessary to provide greater privacy or aesthetic quality to the development.*
- B. *Modification of the standards of Section 17.64.040 shall only be approved if the city finds that the specific design proposed provides adequate vehicular access based on anticipated traffic volumes.*

Findings: According to the applicant, modification is requested to E. Wilson Street, but staff is unclear of the standard subject to modification as plans provided (including a cross-sectional shown on Sheet P-08) show consistency with the Collector Street (new) standard. Staff observe a wider bicycle width (at six feet instead of five) which is consistent with the width shown / approved for JR Meadows 3.

17.64.060 - Private streets.

Findings: No private streets are proposed. Section 17.64.040 is therefore inapplicable.

17.68- Off-Street Parking and Loading

17.68.050- Off-street parking requirements

- A. *1 and 2 family dwellings must have 2 spaces per unit.*

Findings: Parking requirements for the proposed residential units will be reviewed at the time of Site Design Review (SDR) submittal for that portion of the subdivision containing attached homes and at building permit level for the portion of the development containing detached homes. Generally, staff observe how proposed lots can provide two spaces per unit.

17.68.060- Residential driveways: All single and joint use driveways shall be paved and have a maximum 20-foot approach width.

Findings: According to the applicant, a Site Design Review application for the single-family attached dwellings will be submitted and reviewed separately and will include information regarding driveway widths. Also, compliance with residential driveways for the single-family detached dwellings will be addressed at the time of the building permit review.

Staff observe how the minimum driveway separation standard (identified in CDC 17.100.030) in concert with proposed lot width dimensions (generally 25-feet for Attached SF-dwelling lots / 40-feet for Detached SF-dwelling lot) will restrict driveway pavement width to less the maximum of 20-feet. Accordingly, driveways and approach widths will need to be shown at less than 20 feet.

17.72- Storm Drainage

17.72.030- Plan for storm drainage and erosion control

- A. *The methods to be used to minimize the amount of runoff, siltation, and pollution created from the development both during and after construction.*
- B. *Plans for the construction of storm sewers, open drainage channels, and other facilities that depict line sizes, profiles, construction specifications, and other such information as is necessary for the city to review the adequacy of the storm drainage plans.*
- C. *Design calculations shall be submitted for all drainage facilities. These drainage calculations shall be included on the site plan drawings and shall be stamped by a licensed professional engineer in the State of Oregon. Peak design discharges shall be computed using the rational formula and based upon the design criteria outlined in the Standard Specifications for Public Works Construction in the City of Carlton and the most current adopted storm drainage master plan.*

Findings: The applicant refers to storm drainage and erosion control measures as part of the application plans and materials package (part of Exhibit B-1). The City Engineer, in review of the applicant's plans, observes (in Exhibit A-1) no existing public storm water facilities on or adjacent to the proposed development. The City Engineer also explains how the storm water system on the adjacent subdivision (JR Meadows 3) stops at 3rd Street.

Staff refer and incorporate items "a" through "f" of item No. 9 (City Engineer's comments / conditions, Exhibit A-1) in response to the applicant's preliminary storm water report which are included as part of the applicant's combined plans / materials package (Exhibit B-1).

All required design elements are to be shown as part of construction plans submitted to the city. These plans are further subject to review and approval by the City Engineer.

17.76- Utility Lines and Facilities

This section denotes city design, construction and maintenance standards for water improvements, sanitary sewer improvements, streetlights, underground utilities, private utilities and easements. The applicant's written statement (Exhibit B-1) responds to these standards (pages 22 to 28).

In response to Section 17.76.020. C – Water, staff refer and incorporate items "a" through "e" of No. 10 (City Engineer's comments / conditions in Exhibit A-1) in response to the applicant's preliminary utility plan for water, included as part of the applicant's combined plans / materials package (Exhibit B-1).

In response to Section 17.76.020. D – Sanitary Sewer, staff refer and incorporate items "a" through "d" of No. 11 (City Engineer's comments / conditions in Exhibit A-1) in response to the applicant's preliminary utility plan for water, included as part of the applicant's combined plans / materials package (Exhibit B-1). In part, the City Engineer explains how the biological improvements identified to the city Wastewater Treatment Plant (WWTP) will need to be completed and operational before the homes from this development can be put on-line. The same condition of approval was required of the JR Meadows 3 subdivision.

A condition of approval is included, requiring all design requirements to be met as determined by the City Engineer prior to approval of the final plat.

17.84- Site and Landscaping Design

17.84.050- Minimum landscaped area and requirements

- E. Single-Family and Duplex Dwellings: All yard areas not otherwise improved with structures, parking, and circulation (driveways, walkways, etc.) shall be landscaped. At least fifty (50) percent of front yard areas not covered with driveways, patios, or paths shall contain planted areas (includes any trees retained in the development).*

Findings: As previously mentioned, a Site Design Review application has not been submitted for concurrent processing with the proposed subdivision application. A SDR application is required for the proposed lots intended for attached single family housing. Compliance with landscaping requirements shall be reviewed at the time of SDR for attached homes and at building permit level for detached single family.

A condition of approval is included requiring compliance with the provisions of this section.

17.84.070- Screening and buffering

- A. Screening shall be used to eliminate or reduce the visual and noise impacts of the following uses:*
- 1. Commercial and industrial uses when abutting residential uses;*
 - 2. Industrial uses when abutting commercial uses;*
 - 3. Service areas and facilities, including garbage and waste disposal containers, recycling bins, and loading areas;*
 - 4. Outdoor storage areas;*
 - 5. Parking areas for ten (10) or more vehicles for multi-family developments, or twenty (20) or more vehicles for commercial or industrial uses;*
 - 6. At and above-grade electrical and mechanical equipment, such as transformers, heat pumps, and air conditioners;*
 - 7. Any other area or use as required by this title.*

Findings: The applicant's response to the above identifies the purpose of the subdivision (for residential) and states that screening or buffering is not required. Staff concur.

17.84.084- Planting and Maintenance [A through N, long list]

Findings: Staff observe standards in Section 17.84.080 to be applicable to future property / homeowners for maintenance of their respective landscaping. Staff observe several private property front yards and ROW landscape strips to be less than 1,000 square feet. Irrigation threshold applies to site with landscape area over 1,000 square feet.

17.88 Development Standards for Land Divisions

Below are standards of Development Code found in Section 17.88, applicable to this request. According to Section 17.88.020 (scope) *The provisions of this chapter shall apply to all subdivisions, planned unit developments and partitions within the City of Carlton.*

Section 17.88.030 Standards for Lots or Parcels

A. *Minimum Lot Area. Minimum lot area shall conform to the requirements of the zoning district in which the parcel is located.*

Findings: As discussed under the findings stated for Section 17.52.060, there are no minimum lot-size requirements specific to the MX zone, except as lot size is controlled by overall MX zone density and lot coverage requirements. Staff incorporate the response (in this report) provided to Section 17.52.060.

B. *Maximum Lot Area. When single-family residential use is proposed for a lot with an area double or greater than the minimum density of the underlying zone the Planning Commission may take into consideration the potential for further division of the lot at a future date.*

Findings: Staff incorporate the response provided to Section 17.52.060. The plan for S. 2nd Street Subdivision is shown to leave no remaining portion of the property capable of redevelopment.

C. *Lot Width and Depth. The depth of a lot or parcel shall not be more than three times the width of the parcel, with the following exceptions:*

1. *Parcels created for public utility uses or in zones where there is no minimum lot area requirement shall be exempt from width to depth ratio provisions.*
2. *Lots within residential zones where the permitted minimum lot width is less than forty (40) feet may be permitted to have a width-depth ratio of no greater than 5:1*

Findings: Staff incorporate the response provided to Section 17.52.060, above. MX zone has no minimum lot area requirement and is therefore exempt from width to depth ratio provisions.

D. *Access. All lots and parcels created after the effective date of the ordinance codified in this title shall provide a minimum frontage, on an existing or proposed public street, equal to twenty (20) feet. An exception shall apply when residential lots or parcels and planned unit developments, may be accessed via a private street or easement developed in accordance with the provisions of Chapter 17.64 or when the city finds that public street access is:*

1. *Infeasible due to parcel shape, terrain, or location of existing structures; and*
2. *Not necessary to provide for the future development of adjoining property.*

Findings: All lots have a minimum of 25 feet of frontage on all public streets. This standard is met.

E. *Flag Lots. If a flag-lot is permitted, the following standards shall be met:*

1. *The access strip shall not be less than twenty (20) feet wide. The access strip shall be improved with minimum twelve (12) foot wide paved driveways that meet applicable city standards. If said access strip is over two hundred (200) feet in length, the driveway shall terminate in a turn-around capable of accommodating emergency fire vehicles;*
2. *The access strip shall not be included in the calculation of lot area for purposes of determining compliance with any minimum lot size provision of this title.*

Findings: No flag lots are proposed within the subdivision. Staff finds Criterion E is not applicable

F. Through Lots. Through lots shall be avoided except where essential to provide separation of residential development from major traffic arteries, adjacent nonresidential activities, or to overcome specific disadvantages of topography and orientation. A ten (10) foot wide screening or buffering easement, pursuant to the provision of chapter 17.84, may be required by the city during the review of the land division request.

Findings: No through lots are proposed within the proposed subdivision. Staff finds Criterion F is not applicable.

G. Lot Side Lines. The side lines of lots, as far as practicable, shall run at right angles to the right-of-way line of the street upon which the lots face.

Findings: Side lot lines are shown to run at right angles to the street upon which the lots face to the degree practicable. Staff finds the standard is met.

H. Lot Grading. The minimum elevation at which a structure may be erected, taking into consideration the topography of the lot, the surrounding area, drainage patterns and other pertinent data, shall be established by the building inspector.

Findings: The applicant refers to the Preliminary Plans, with existing vs. finished grade contours shown. Construction plans will provide further detail. Drainage patterns of the site have been taken into consideration. Staff also incorporate the City Engineer's comments (Exhibit A-1). This standard is met.

I. Utility Easements. Utility easements shall be provided on lot areas where necessary to accommodate public utilities. Such easements shall have a minimum total width as specified in Section 17.76.020.

An exception shall apply when residential lots or parcels and Planned Unit Developments, may be accessed via a private street or easement developed in accordance with the provisions of Section 2.202 or when the City finds that public street access is:

- a. Infeasible due to parcel shape, terrain, or location of existing structures; and*
- b. Not necessary to provide for the future development of adjoining property.*

Findings: The applicant refers to the location and width of public utility easements (PUEs) as shown on the Preliminary Plans, consistent with the provision above. This standard is met.

17.88.040- Standards for Blocks

- A. *General. The length, width, and shape of blocks shall be designed with regard to providing adequate building sites for the use contemplated; consideration of needs for convenient access, circulation, control, and safety of street traffic; and recognition of limitations and opportunities of topography.*
- B. *Sizes.*
1. *Block Length. Except as provided in Section 17.100.030 for the Main Street Special Transportation Area (STA), blocks in residential and commercial districts shall be a minimum of one hundred (100) feet long and shall not exceed six hundred (600) feet in length between street right-of-way lines, unless the previous adjacent development pattern or topographical conditions justify a variation. Blocks that exceed six hundred (600) feet in length shall provide additional pedestrian and bicycle accessways.*
 2. *Block Perimeter. Block perimeters in residential and commercial districts shall not exceed one thousand four hundred (1,400) feet.*
- C. *Alleys. Alleys may be provided in all districts, however, alleys shall be provided in commercial and industrial areas, unless other permanent provisions for access to off-street parking and loading facilities are provided.*

Findings: All blocks are below the 600-foot maximum length. Staff also observe the western-most block length of S. 2nd Street, E. Wilson Street and E. Taylor Street (east of the abandoned S.P.R.R) to meet the minimum 100-feet (average). Alleys are not proposed and the zoning is not commercial or industrial.

Section 17.88.050 Improvement Requirements

All improvements required by this ordinance or as conditions of approval of any subdivision or partition shall be completed prior to the issuance of any building permits for any structures within the subject development. If the Developer requests approval to record the final plat before all required improvements have been constructed and all conditions of approval have been met by the Developer and accepted by the City, the Developer shall provide a security guarantee satisfactory to the City that all improvements will be constructed in conformance with all City standards and ordinances and all conditions of approval will be satisfied. If the total street frontage of the development is less than or equal to 250 feet, the applicant may request to enter into, and the City may grant an improvement deferral agreement.

- A. *Frontage Improvements: Street improvements shall be required for all public streets on which a proposed land division fronts in accordance with Section 17.64. Such improvements shall be designed to match with existing improved surfaces for a reasonable distance beyond the frontage of the property. Frontage improvements shall include sidewalks, curbing, storm sewer, sanitary sewer, water lines, other public utilities as necessary, and such other improvements as the City shall determine to be reasonably necessary to serve the development or the immediate neighborhood.*

Findings: City infrastructure requirements and the conditions of subdivision approval shall be completed prior to issuance of building permits unless a security guarantee is agreed upon by the developer and the City. The City Engineer's comments (Exhibit A-1) on public utility improvements have been included in previous sections that pertain to storm drainage, water, sanitary sewer and streets improvements.

- B. Project Streets: All public or private streets within the land division shall be constructed as required by the provisions of Section 17.64. Private driveways serving flag lots or private streets shall be surfaced as per the requirements of this Ordinance.*

Findings: Staff incorporate the findings provided in response to Section 17.64 (herein).

- C. Monuments: Upon completion of street improvements, centerline monuments shall be established and protected in monument boxes at every street intersection at all points of curvature, points of tangency of street center lines, and other points required by state law.*

Findings: All required monuments are to be established per the standards of this section as a condition of approval.

- D. Benchmarks: Elevation benchmarks shall be set at intervals established by the City Engineer. The benchmarks shall consist of a brass cap set in a curb or other immovable structure.*

Findings: This is included as a condition of approval.

- E. Surface Drainage and Storm Sewer System: Drainage facilities shall be provided within the land division and to connect the land division drainage to drainage-ways or to storm sewers outside the land division and shall be consistent with the most current adopted Storm Water Master Plan. Design of drainage within the land division shall take into account the capacity and grade necessary to maintain unrestricted flow from areas draining through the land division and to provide extension of the system to serve such areas. The design shall take into account provisions for the future extension beyond the land division to serve upstream properties that, in the judgment of the City, cannot be served otherwise.*

Findings: Staff incorporate the findings provided in response to Section 17.72 (herein) pertaining to storm drainage.

- F. Sanitary Sewers: Sanitary sewer shall be installed to serve the land division and to connect the Land division to existing mains both on and off the property being divided. The design shall take into account provisions for the future extension beyond the land division to serve upstream properties that, in the judgment of the City, cannot be served otherwise.*

The City may require that the construction of sewage lines of a size in excess of that necessary to adequately service the development in question, where such facilities are or will be necessary to serve the entire area within which the development is located when the area is ultimately developed.

Findings: Staff incorporate the findings provided in response to Section 17.76 (herein) pertaining to sanitary sewer. As previously mentioned, biological improvements to the WWTP will need to be completed and operational before the homes from this development can be serviced.

- G. Water System: Water lines with valves and fire hydrants serving the land division and connecting the land division to the City mains shall be installed. The design shall take into account provisions for extension beyond the land division to adequately grid the City system and to serve the area within which the development is located when the area is ultimately developed. However, the City will not expect the*

developer to pay for the extra pipe material cost of mains exceeding eight (8) inches in size. Installation costs shall remain entirely the developer's responsibility.

Findings: Staff incorporate the findings provided in response to Section 17.76 (herein) pertaining to water.

- H. Pedestrian Facilities and Bicycle ways: Sidewalks shall be installed along both sides of each public street and include any pedestrian or bicycle ways within the land division as well as along all frontages to existing streets. Sidewalks shall be extended as required to connect to other sidewalk systems. The City may defer sidewalk construction until the dwellings or structures fronting the sidewalk are constructed. Any required off-site sidewalks, sidewalks fronting public property, or sidewalks adjacent to existing structures shall not be deferred.*
- I. Pedestrian/Bicycle Design Standards. Pedestrian/bicycle access ways shall meet the following design standards:*
- a. Minimum dedicated width: 10 feet*
 - b. Minimum improved width: 5 feet*
 - c. Vision Clearance: A clear line of vision for the entire length of the access way shall be required.*
 - d. Pedestrian scale lighting fixtures shall be provided along the walkway and lighted to a level where the system can be used at night.*
 - e. The access way shall be designed to prohibit vehicle traffic.*

Findings: Staff incorporate the findings provided in response to Section 17.74 (herein) pertaining to streets. In response to I, the applicant explains how sidewalks will connect to other existing sidewalk systems on S. 2nd Street and S. 3rd Street, as well as sidewalks planned to be installed as part of the JR Meadows No. 3 Subdivision on E. Wilson Street and E. Taylor Street. Bicycle ways will be provided on S. 3rd Street and E. Wilson Street as is required on Collector and School Collector streets, respectively. This standard is met.

J. Other:

- 1. Curb cuts and driveway installations, excluding common drives, are not required of the land divider but, if installed, shall be according to the City standards.*
- 2. Street tree planting is not required of the land divider but, if planted, shall be in accordance with City requirements and of a species compatible with the width of the planting strip.*
- 3. Streetlights. The installation of underground electric service, light standards, wiring, and lamps for streetlights of a type required by City standards following the making of necessary arrangements with the serving electric.*
- 4. Street Signs. The installation of street name signs and traffic control signs is required at locations determined to be appropriate by the city and shall be of a type required by City standards.*

Findings: Staff incorporate the applicant's written response that refers to the Preliminary Plans. In part, the applicant explains how certain curb cuts / driveway installations will be constructed as part of the scope of work scope performed under building permit.

Additionally, staff incorporate the applicant's written response provided to CDC Sections 17.88.060 (*Improvement procedures*) and to Section 17.92 (*Yard and Lot Standards*). The applicant acknowledges that how these standards are understood and can be met. Compliance with the standards for front, side, and rear yard projections for the single-family dwellings will be addressed through building permit review.

Staff also incorporate the applicant's written response provided to CDC Sections 17.92.080 (*Fences, walls and hedges*). According to the applicant walls, fences, or hedges are not included in this application. The applicant also explains how future installation of walls, fences, and hedges can be addressed during the building permit review process.

17.100.030 Access Control Standards

*A hierarchy of spacing standards is established that is dependent on the functional classification of the street. *** [Table in 17.100.030 follows and is shown as part of applicant's response.]*

Findings: Staff incorporate the applicant's response provided to CDC Section 17.100.030. A table therein, shown to the applicant's statement, identifies the minimum spacing between driveways and / or streets, depending on the street classification. For *Local* and *Collector* class streets, the minimum spacing standard is 50 feet for lots intended for single-family detached, and 25 feet for single family attached. According to the applicant "To the extent applicable, these standards are met." (p. 38).

Staff observe the applicant's Attached Single-Family Home Driveway Schematic (EXH-1 of the packet) to show how two adjacent garages (example via Lots 5 & 6 and Lots 13 & 14) can share one driveway to meet the separation standard for single-family attached. Not provided is a schematic for single family detached. As explained in the staff response provided to CDC Section 17.52.060 (lot requirements of the MX zone) there are no minimum lot-size requirements, except as lot size is controlled by overall MX zone density and lot coverage requirements. Staff also observe no minimum lot width identified for the MX zone (other than a minimum access width standard of 25-feet). According to the applicant, spacing standards for driveways will be addressed during the building permit review process. While driveway spacing can be deferred for now, staff observe how the shared driveway design approach for attached construction will also need to be employed for single-family detached. Where most lots intended for single-family detached construction are shown at 40 feet in width, the 50-foot driveway distance standard (between individual driveways) is most likely to leave roughly 15-feet of driveway width for each single-family detached lot (assuming shared driveway between abutting lots). Staff also incorporate the City Engineer's comments (Exhibit A-1) on this topic, specific to Carlton Public Works Design Standards, Division 2 – Streets, and the intersection standards therein shown to Section 2.21. Off-site, the trajectory shown for future extension of E. Taylor Street (via the concept plan) appears less than the minimum 100-foot distance per d. of 2.21.

17.100.040 - General standards.

A. Lots that front on more than one street shall be required to locate motor vehicle accesses on the street with the lower functional classification.

Findings: According to the applicant, vehicle access can be provided from the street with the lower classification (referring to lots with multiple street frontages). Staff incorporate the City Engineer's comments on this topic (Exhibit A-1). It is observed that certain lots will have to take access from E. Wilson

Street, which has the higher functional classification. Staff also incorporate the findings stated above in response to CDC Section 17.100.030.

B. When a residential subdivision is proposed that would abut an arterial, it shall be designed to provide through lots along the arterial with access from a marginal access or local street. Access rights of these lots, to the arterial shall be dedicated to the City of Carlton and recorded with the deed. A berm or buffer yard may be required at the rear of through lots to buffer residences from traffic on the arterial.

Findings: The proposed subdivision does not abut an arterial. Criterion B is not applicable.

C. Subdivisions with frontage on the state highway system shall be designed to share access points to and from the highway. If access off of a secondary street is possible, then access should not be allowed onto the state highway.

Findings: The subdivision does not have frontage on a state highway. Criterion C is not applicable.

D. Wherever a proposed development abuts unplatted developable land within the urban growth boundary, street stubs shall be provided to provide access to abutting properties or to logically extend the street system into the surrounding area.

Findings: The applicant explains how the southern boundary of the subject site is located next to developable land within the urban growth boundary, and how S. 3rd Street is stubbed accordingly. Street stubs for Taylor, Wilson, and 3rd Streets are required as conditions of approval.

E. Local streets shall connect with surrounding streets to permit the convenient movement of traffic between residential neighborhoods or facilitate emergency access and evacuation. Connections shall be designed to avoid or minimize through traffic on local streets. Appropriate design and traffic control such as four-way stops and traffic calming measures are the preferred means of discouraging through traffic.

Findings: The applicant explains how this project includes new access to an existing street (S 2nd Street) and how improvements proposed for E. Wilson Street and E. Taylor Street within the subdivision will connect to the extension of S 3rd Street as part of the JR Meadows 3 subdivision. Staff incorporate the findings prepared in response CDC 17.64.030, herein, pertaining to street extensions. Staff acknowledge how E. Taylor Street is shown aligned with the plan for Taylor on the east (as shown for JR Meadows 3). However, to the west, the proposal to stub Taylor Street, where shown, does not align with existing Taylor Street on the opposite side of Highway 47 and the applicant's concept plan for future potential connections (beyond the subdivision site) indicates potential resulting street closures. Staff acknowledge how E. Taylor Street (and E. Wilson) within the subdivision will not provide immediate access / connection to streets shown to the west, but the city TSP / Future Street Plan illustrates the plan for making this connection. If the proposed off-set alignment for Taylor results in additional street closures, staff observe how these closures can hamper emergency access and evacuation. Staff finds that all other proposed streets (including that portion of Taylor connecting east) to permit the convenient movement of traffic between neighborhoods and to facility emergency access and evacuation, as E describes.

- F. In all cases reasonable access or the minimum number of access connections, direct or indirect, necessary to provide safe access to and from a street shall be granted.*

Findings: Two permanent accesses are required per the fire code when a subdivision exceeds 30 lots. The subdivision will have three access points (S. 2nd, E. Wilson and E. Taylor) but two of these streets (E. Wilson and E. Taylor) are dependent on the streets identified as part of JR Meadows 3. Accordingly, as a condition of approval, construction associated with streets in JR Meadows 3 must be completed.

- G. New connections shall not be permitted within the functional area of an intersection as defined by the connection spacing standards of this title, unless no other reasonable access to the property is available.*

Findings: Staff incorporate the findings above provided in response Section 17.100.030 (access spacing).

17.100.070 - Review procedures.

- A. Access Permit Required. Access to a public street (e.g., a new curb cut or driveway approach) requires an access permit. An access permit may be in the form of a letter to the applicant, or it may be attached to a land use decision notice as a condition of approval. In either case, approval of an access permit shall follow the procedures and requirements of the applicable road authority, as determined through the Type I review procedures found in Section 17.188.010.*
- B. Traffic Study Requirements.*
- 1. The City shall require a traffic impact analysis (TIA) prepared by a qualified professional to determine access, circulation, and other transportation requirements when:

 - a. The development generates twenty-five (25) or more peak-hour trips or two hundred fifty (250) or more daily trips.*
 - b. An access spacing exception is required for the site access driveway(s) and the development generates ten (10) or more peak-hour trips or one hundred (100) or more daily trips.*
 - c. The development is expected to impact intersections that are currently operating at the upper limits of the acceptable range of level of service during the peak operating hour.*
 - d. The development is expected to significantly impact adjacent roadways and intersections that have previously been identified as high crash locations or areas that contain a high concentration of pedestrians or bicyclists such as a schools.**
 - 2. Transportation Assessment. If a TIA is not required, the applicant's traffic engineer shall submit a transportation assessment letter to the City indicating the proposed land use action is exempt. This letter shall outline the trip-generating characteristics of the proposed land use and verify that the site-access driveways or roadways meet City of Carlton sight-distance requirements and roadway design standards.*

Findings: Staff incorporate the applicant's response to the above. In part, the applicant refers to the Transportation Impact Analysis (TIA) provided as part of the materials package and explains how the subdivision will generate an additional 24 morning peak hour trips, 31 evening peak hour trips, and 326 average weekday trips. The full TIA is provided as Exhibit B-2. Staff also incorporate that applicant's supplemental to the TIA, included as part of combined revised plans / materials package. Staff also incorporate the City Engineers comments (Exhibit A-1) and the comments received from ODOT (Exhibit A-2) in review of the TIA as findings.

C. Conditions of Approval. The City may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system.

D. Access permit reviews shall address the following criteria:

- 1. Access shall be properly placed in relation to sight distance, driveway spacing, and other related considerations, including opportunities for joint and cross access;*
- 2. The road system shall provide adequate access to buildings for residents, visitors, deliveries, emergency vehicles, and service vehicles;*
- 3. The access shall be consistent with the access management standards in the most current adopted City of Carlton Transportation System Plan.*

Findings: Staff incorporate the City Engineer's comments (Exhibit A-1). Conditions of approval, including an access permit shall be required prior to site development, proposed as a condition of approval.

E. Any application that involves access to the State Highway System shall be reviewed by the Oregon Department of Transportation for conformance with state access management standards.

Findings: Streets constructed in this subdivision will not access the State Highway System (OR Hwy. 47). Staff incorporate comments received via ODOT (Exhibit B-2) and bullet notes herein. Streets constructed within this subdivision are planned for future continuation and eventual connection with Highway 47.

Section 17.106 Residential Design Standards

Findings: As previously mentioned, the application for Site Design Review will be sought separately at a future date, TBD. Staff incorporate the applicant's written response to Design Standards in 17.106.030 (A-F). These standards will be subject to review when the Site Design Review application is received. Staff observe how proposed lot configuration will predicate the need for future construction of garage openings that face respective street frontages. A design alternative depicts front vehicle access (Figure 17.106.030(E-2)) and relevant standards are listed in 7.106.030.F. Staff observe the applicant's Attached Single-Family Home Driveway Schematic (EXH-1 of the packet) to show how two adjacent garages (example via Lots 5 & 6 and Lots 13 & 14) can share one driveway to meet the separation standard described in 17.106.030.F.4. A one-car garage door / opening (per lot facing the street) is therefore anticipated when the Site Design Review application is received.

Section 17.176 Subdivisions and Planned Unit Development

17.176.010 - General provisions.

- A. *All subdivisions and planned unit developments (PUDs) shall conform to all applicable zoning district Standards, development standards and other provisions of this title.*
- B. *A master plan for development is required for any application that leave a portion of the subject property capable of redevelopment.*

Findings: In response to B, above, staff observe the plan for S. 2nd Street Subdivision to leave no remaining portion of the property capable of redevelopment. Accordingly, a master plan is not required. In response to A, staff observe applicable zoning district standards of CDC Section 17.52, specific to the MX zone along with general development standards that begin in Section 17.60 and end in Section 17.140 (as addressed in this report and/or as part of the applicant's written response).

VI. PUBLIC WRITTEN STATEMENTS

Exhibit C-1 of this report is a written statement received late November 6, 2023, from Joseph Amerson, of 729 S. 2nd Street, Carlton. Mr. Amerson's written statement is acknowledge hereto but staff received just prior to production of this report and has not had time to review.

VII. CONCLUSIONS AND RECOMMENDATIONS

Based on the findings in this report (specific to C and D of CDC 17.64.030) staff is unable to recommend approval of SUB 23-02 at this time. If the Planning Commission decides to approve SUB 23-02, staff recommends the following conditions:

1. **Prior to final plat approval**, detailed design drawings and specifications for all water, sanitary sewer, storm drainage, street improvements, grading and erosion control, property and street centerline monuments and subdivision benchmarks shall be prepared by a registered professional engineer and submitted to the City Engineer for approval prior to constructions of any improvements. Other items, identified below, shall be accomplished prior to final plat approval.
 - a. All utility easements shall be shown on the final plat and at a minimum shall conform to the requirements of Development Code Section 17.76.
 - b. The installation of street name signs and traffic control signs is required at locations determined by the City and shall be of a type required by City standards.
 - c. The installation of underground electric service, light standards, wiring, and lamps for streetlights of a type required by City standards following the making of necessary arrangements with the serving electric.
 - d. Curb cuts and driveway installations by the developer shall be according to the City standards.

- e. If required by the Fire Chief, provide a temporary turnaround on E. Wilson Street, at the west end that meets requirements of the Fire Chief.
- f. Vision clearance areas shall be provided on corner lots, as outlined in CDC 17.92.080. These standards shall be shown to the final construction plans.
- g. JR Meadows 3 subdivision (city case file SUB 2023-01) must be constructed as approved prior beginning construction on Second Street Subdivision.
- h. The final design plans will be required to have erosion control.
- i. The street width changes on 2nd Street shall have a smooth, sloped transition.
- j. There shall be one ADA ramp on the south side of Taylor Street at the intersection of 2nd Street.
- k. Final fire hydrant locations will be adjusted per input from the Fire Chief.
- l. A geotechnical report is required for this design. Design and construction shall follow the recommendations of the geotechnical report.
- m. The storm system will need to be modified to avoid surcharges. This may require detention.
- n. The drainage tiles through the subdivision will need to be removed or filled to prevent settlement. The applicant shall provide a drainage path/facilities for any tile that is upstream of the development.
- o. Upon completion of street improvements, centerline monuments shall be established and protected in monument boxes at every street intersection at all points of curvature, points of tangency of street center lines, and other points required by state law.
- p. Elevation benchmarks shall be set at intervals established by the City Engineer. The benchmarks shall consist of a brass cap set in a curb or other immovable structure.
- q. The applicant shall obtain a City of Carlton access permit for all new curb cuts within the subdivision.
- r. Street stubs shall be provided for E. Taylor and E. Wilson where these streets dead-end at the perimeter of the subject property.
- s. Notes to the final plat are to describe the intent and purpose of Tract A. If not dedicated to the City of Carlton, documentation recorded with the final plat is to include formation of Homeowners Association that is to be held responsible for continuous maintenance of Tract

- A. A landscape plan for Tract A is to be included as part of the future application for Site Design Review and a minimum of three street trees shall be planted within the Tract.
 - t. Street trees planted in landscape strips shall be listed on the City Carlton Street Tree list.
 - u. Bike lanes to Wilson Street and 3rd Street shall be painted to six-feet in width and two minimum 10-foot travel lanes, consistent with city street design standards.
- 2. Prior to issuance of building permits:**
- a. A Site Design Review application shall be submitted and approved by the City for the block containing lots intended for single-family attached homes.
 - b. The applicant shall demonstrate compliance with the landscaping standards of Section 17.84 at the time of Site Design Review for all attached dwellings and at building permit submittal for all detached dwellings.
 - c. All dwellings shall comply with the setback standards of CDC Section 17.52.050 for the MX zone. Also, vehicle driveway access to all dwellings shall comply with CDC Section 17.100.030, describing a 50-foot driveway separation between individual driveways (for detached single-family dwellings) and 25-foot driveway separation between individual driveways (for attached single-family).
 - d. All dwellings shall comply with the design standards of Section 17.106.030 A Residential Design Standards as illustrated on the approved elevations, at the time of building permit submittal.
 - e. All lots fronting on multiple streets shall take access from the street with the lower classification unless the lot configuration does not allow for it.
- 3. Additional**
- a. The City's WWTP system must have the biological capacity needed to accommodate the homes in this subdivision before building permits can be issued for the construction of homes or connection to the City's sanitary sewer system. The final plat may be recorded upon completion of the subdivision public improvements (or execution of an appropriate deferred construction agreement and posting of a performance bond) and recordation of covenants prohibiting the sale or offering of lots or homes for sale, negotiations for sale of homes or any form of marketing of lots or homes in the subdivision. Upon satisfaction of one of the two following conditions, as determined by the City Engineer, building permits may be issued and the covenant preventing marketing or sale of homes or lots will be terminated:
 1. The WWTP facility is connected to three phase power, and the biological capacity improvements are substantially complete and operational.
 2. The study analyzing the capacity of the WWTP facility demonstrating that the facility has biological capacity to accommodate the homes in this subdivision is completed at Applicant's expense. The scope would be approved by the City, and the study would be reviewed and approved by the City. The applicant shall also pay for the cost of staff time. *

* Cost of staff time (under Condition 3.a.2, above) to include: 1) development and approval of the scope of work, 2) assistance during the study, and 3) review and approval of the study.

4. **Security Guarantee:** If the developer requests approval to record the final plat before all required improvements have been constructed and all conditions of approval have been met by the developer and accepted by the City, the developer shall provide a security guarantee in accordance with Section 17.216 Performance Agreement and satisfactory to the City that all improvements will be constructed in conformance with all City standards and ordinances and all conditions of approval will be satisfied.
5. **Final Plat:** Prior to expiration, the applicant shall submit three (3) identical reproducible copies of the final plat for signature. The final plat shall be submitted to the City in a form and with information consistent with Development Code Section 17.176.050 including monuments, benchmarks and other County survey and map standards, and State laws including ORS Chapter 92 for plats of record.

VIII. MOTION OPTIONS

- A. To deny SUB 23-02, based on findings in the staff report, specific to C and D of CDC 17.64.030, or
- B. To continue the hearing to a date / time certain (observing the 120-day period for issuing a final written decision which includes appeal).

To the above option, if the applicant offers to amend the plan, staff recommends asking the applicant if partial waiver of the 120-day period is acceptable. Or

- C. To approve SUB 23-02, based on additional / supplemental findings, subject to conditions of approval therein, or
- D. To approve SUB 23-02, based on additional / supplemental findings, subject to conditions of approval therein, as modified by the Planning Commission (stating the modifications).

CITY OF CARLTON – DEVELOPMENT APPLICATION COMMENTS

Date: 10.17.23

Second St Development – Residential Development

The project is described as: a 39 lot subdivision.

Note that the Second St. development is predicated upon the construction of the JR Meadows 3 development being constructed. Currently JR Meadows 3 is in design. The Second St. development connects to the water, sanitary sewer and storm drainage improvements in JR Meadows 3; and as proposed service is not available otherwise. The JR Meadows 3 development also provides the major transportation access, and the second access required by Fire Code.

1. **17.56.020 Floodplain:** The applicant verified the location of the 100-year floodplain zone A using the FEMA maps, which is included in the application as exhibit E. The project is not in the floodplain. Therefore, the requirements for construction in a floodplain are not applicable.
2. **Sections: 17.64.020, 17.64.030, 17.64.040 and 17.64.050 pertaining to Wilson St.:** Wilson St. is an extension of a collector street and the requirements are: 71' ROW, 46' pavement, 5' bike lane, 5' landscape strip, curb & gutter, and a 6' sidewalk. This meets the requirements of the TSP to have a collector street running east west in this area. The applicant has submitted a street section that meets the code requirements.
3. **Sections: 17.64.020, 17.64.030, 17.64.040 and 17.64.050 pertaining to Third St.:** Third St. is an extension of a school zone collector street and the requirements are: 49' ROW, 34' pavement, 5' bike lane, curb & gutter, and a 6' sidewalk. This meets the requirements of the TSP to have a collector street running north south in this area. This street is proposed to be constructed to a $\frac{3}{4}$ street standard as part of a different development named JR Meadows 3. The applicant has proposed to construction the remainder of the street. The applicant has submitted a street section that meets the code requirements.
 - a. The improvement cannot be done until the JR Meadows 3 development is constructed.
4. **Sections: 17.64.020, 17.64.030, 17.64.040 and 17.64.050 pertaining to Taylor St.:** Taylor St. is designated as a local street in the TSP. The requirements are: 50' ROW, 34' pavement, curb & gutter, and a 5' sidewalk. The applicant has met these requirements.
5. **Sections: 17.64.020, 17.64.030, 17.64.040 and 17.64.050 pertaining to Second St.:** This is a local streets and the requirements are: 50' ROW, 34' pavement, curb & gutter, and a 5' sidewalk. The applicant has proposed three different sections.
 - a. Between Taylor St. and Wilson St. they have proposed a 53' ROW, 34' pavement, curb & gutter and 5' sidewalk. On the west side of the street they have also proposed a 5' landscape strip. This allows for a separated sidewalk such that it can be constructed with a smooth slope to accommodate small lot frontages. The code allows local street ROW up to 57', so this still meets code.
 - b. North of Wilson St. the development extends further north on the east side of the street such that a $\frac{3}{4}$ street improvement is only required for a portion of the street. For the portion of the street that is encompassed by the development a full street improvement is proposed. For the area where the development only fronts the east side of the street, the applicant has proposed a $\frac{3}{4}$ street improvement. This meets code requirements.

- c. North of the development (off site) for approximately one block the applicant has proposed to pave a 20' wide strip. While this is not required, it does facilitate access to the development on Second St.
 - d. The two locations where the pavement transitions in width have been shown as sudden pavement width changes. A pavement transition should be provided to facilitate driving safety.
6. **Section 17.64.030 D Future Extensions:** This requires that streets should be aligned such that it provides for future street extensions as shown in the TSP.
- a. Both Wilson St. and Taylor St. are shown to match up with extensions of the streets from the JR Meadows 3 subdivision to the east.
 - b. Wilson St and Taylor St have been extended to the west per the TSP, and Third St. has been extended to the south. On sheet P-04 the applicant has shown the potential future extensions of the streets which matches up with the intent of the TSP.
 - c. The Taylor Street extension is shown to go west in general compliance with the TSP, and is shown such that it would intersect Pine St. (Highway 47) at the approximate intersection of Pine St. (Highway 47) and Arthur St. However, it does not align with Taylor Street on the west side of Pine St. This creates an off-set intersection measured curb-to-curb of approximately 75-feet.
 - i. The minimum street spacing per 17.100.030 on Pine St. is 450 to 600 feet. However, the current street grid system has approximately a 210 to 250-foot intersection spacing. Therefore, current conditions preclude this criteria from being met.
 - ii. The minimum street spacing per the City Design Standards 2.21d is 100-foot measured curb-to-curb. The proposed street layout does not meet this minimum.
7. **Section 17.64.030 H Dead end streets:** Per fire code requirements, dead-end streets longer than 150' shall have an approved turnaround.
- a. There will be three temporary dead-end streets: Wilson St., Taylor St. and Third St. Taylor St. and Third St. will be less than 150' in length. Wilson St. will be 157' in length. This is slightly more than the requirement. The Fire Chief will need to comment on whether this is acceptable.
 - b. Oregon Fire Code Applications Guide: Per the guide developments of one and two family dwellings where the number of dwelling units exceeds 30 or multi-family residential units having more than 100 units shall have at least two approved means of access. The proposed development will have three permanent access points once JR Meadows 3 is constructed. Without JR Meadows 3 development there would only be one permanent access.
8. **Section 17.100.070 B Traffic Study Requirements:** The proposed development would produce more than 250 daily trips; therefore, a traffic study is required. A traffic study completed by Lancaster Mobley (a transportation engineering firm) was provided, stamped and signed by a registered engineer proficient in traffic engineering as part of the application in Exhibit D of the original application, and additional information provided in appendix D of the revised application.
- a. The average daily trips generated are expected to be 326. This is in line with what would be expected based upon the ITE manual.

- b. Traffic warrants are not met for traffic signals near the development.
 - c. Traffic warrants are projected to be met on Highway 47 at Yamhill St. and W. Main St., and Pine St. and Main St. These are off-site on Highway 47 and greatly affected by traffic other than the subdivision. These intersection are controlled by ODOT, and currently they have no plans to consider traffic signals.
 - d. The intersections are expected to have a level of service (LOS) and volume-to-capacity (v/c) ratio that is acceptable.
 - e. Based upon the traffic study findings, additional street improvements, off-site improvements or signalization are not required.
9. **Section 17.72 Storm Drainage:** There is no existing public storm water facilities on or adjacent to the proposed development. The storm water system on the adjacent subdivision (JR Meadows 3) stops at 3rd St. All storm water drainage on the property is overland draining to Hawn Creek in the north east. A preliminary storm water report was provided as part of the application as Exhibit C.
- a. The pipe has been designed to connect to the storm water system in JR Meadows 3, which connects to the storm water system in JR Meadows 2, which discharges to two locations: Hawn Creek, and a natural drainage way overland to the north which also eventually discharges to Hawn Creek.
 - b. Pipe has been sized adequately for the storm drainage in the subdivision and the run-off from the upstream sub-basins to the west.
 - c. Detention has not been proposed for the development where it discharges to Hawn Creek. Detention is required where there is not sufficient downstream capacity. The storm report indicates that there will be surcharges in the storm system in several locations. On Cleveland St. the surcharge is such that in is within a 1.5' of the ground, and on Wilson St. it is within 5' on the ground.
 - d. The surcharge is not acceptable. On Cleveland St. the surcharge is very close to the ground surface and may not be within the accuracy of the modeling. On Wilson St. the surcharge may impact the ability of the service lines to operate. The storm system will need to be modified to avoid the surcharges. This may require detention.
 - e. The discharge locations are not indicated to change. The flow to the overland location is not proposed to change.
 - f. The storm water collection system is shown in general conformance with the City Design Standards. The final location of catchbasins, manholes and pipe shall be adjusted as required during design review. Drainage along the borders of the subdivision should be considered and facilities provided such that the storm run-off from the subdivision does not impact that neighbors more than current conditions.
 - g. If there are drainage tiles on this property then they will need to be located and dealt with. The tiles through the subdivision would need to be removed or filled to prevent settlement. Providing a drainage path/facilities for any tile that is upstream of the development.
 - h. The minimum main line pipe size shall be 12-inches, the minimum pipe size to catch basins shall be 10-inches, and the minimum storm service lateral shall be 4-inches.

10. **Section 17.76.020 C Water:** The application shows a connection to the 8" water line on Third St. at Wilson St. and Taylor St. extending from JR Meadows 3 subdivision.
 - a. Water modeling and fire hydrant testing was conducted that predicts that there will be over 1,000 gpm of fire flow throughout the proposed subdivision. This is considered adequate fire flow for residential.
 - b. There are three dead-end water line shown, all of which are appropriate for the development. The first is at the west end of Wilson St. at the west side of the subdivision. The second is at the west end of Taylor St. at the west side of the subdivision. These can be extended in the future, but will be dependent on what occurs with the County property (the old railroad right-of-way).
 - c. The third dead end is on Second St. heading north. One block to the north there is an existing 2-inch pipe. As the property to the north of the proposed subdivision develops the water line would be extended. Currently, that connection is not required for fire flow.
 - d. Final fire hydrant locations will be adjusted per input from the Fire Chief.
 - e. All lots would require separate water services and meters.
11. **Section 17.76.020 D Sanitary Sewer:** There is a proposed 8" sanitary sewer on Third St. in JR Meadows 3 subdivision that eventually discharges to the Hawn Creek Pump Station. The new sanitary sewer pipe would connect to the pipe in the JR Meadows 3 subdivision.
 - a. The sanitary sewer layout shows gravity service to all the lots.
 - b. The Hawn Creek sanitary sewer pump station has been constructed and is in operation, so there is sufficient pumping capacity for the proposed development.
 - c. All lots would require separate sanitary sewer services.
 - d. The biological improvements to the WWTP will need to be completed and operational before the homes from this development can be put on-line.
12. **Section 17.100.030 Access Spacing:** The driveway spacing standard for collector streets is 75-feet, and for local streets it is 50-feet. The applicant has proposed shared driveways on Second St. and Wilson St. In these locations they have proposed narrow lots with frontages of 25-feet. The standard cannot be met. However, the shared driveway is a reasonable solution to narrow lots providing longer stretches of sidewalk for pedestrians. This is considered a safer condition for the pedestrians.
13. **Section 17.100.040 Access Standards:** Access is required to be on the street with the lower functional class.
 - a. Lots 5 and 35 fronts E. Wilson Street (a collector) and Second St. The access should be off of Second St. where reasonable. Due to the lot configuration it appears that the access will be off of Wilson St.
 - b. Lots 25 and 26 have frontage on Third St. (a collector) and Taylor St. The access should be off of the local street (Taylor) where reasonable. Due to the lot configuration it appears that the access will be off of Third St.
14. **Geotechnical Report:** There are locations where there will be up to 5-feet of fill. A geotechnical report will be required as part of design.

Recommended Conditions of Approval (COA)

1. If required by the Fire Chief, provide a temporary turnaround on E. Wilson St. at the west end that meets requirements of the Fire Chief.
2. The JR Meadows 3 subdivision must be constructed and approved prior beginning construction on the proposed subdivision.
3. The final design plans will be required to have erosion control.
4. The street width changes on Second St. shall have a smooth, sloped transition.
5. There shall be one ADA ramp on the south side Taylors St. at the intersection of Second St.
6. Final fire hydrant locations will be adjusted per input from the Fire Chief.
7. A geotechnical report is required for design. Design and construction shall follow the recommendation of the geotechnical report.
8. The City's WWTP system must have the biological capacity needed to accommodate the homes in this subdivision before building permits can be issued for the construction of homes or connection to the City's sanitary sewer system. The final plat may be recorded upon completion of the subdivision public improvements (or execution of an appropriate deferred construction agreement and posting of a performance bond) and recordation of covenants prohibiting the sale or offering of lots or homes for sale, negotiations for sale of homes or any form of marketing of lots or homes in the subdivision. Upon satisfaction of one of the two following conditions, as determined by the City Engineer, building permits may be issued and the covenant preventing marketing or sale of homes or lots will be terminated:
 1. The WWTP facility is connected to three phase power, and the biological capacity improvements are substantially complete and operational.
 2. The study analyzing the capacity of the WWTP facility demonstrating that the facility has biological capacity to accommodate the homes in this subdivision is completed at Applicant's expense. The scope would be approved by the City, and the study would be reviewed and approved by the City. The applicant shall also pay for the cost staff time with regard to development and approval of the scope of work, assistance during the study, and review and approval of the study.
9. The storm system will need to be modified to avoid surcharges. This may require detention.
10. The drainage tiles through the subdivision would need to be removed or filled to prevent settlement. Provide a drainage path/facilities for any tile that is upstream of the development.
11. All utility easements shall be shown on the final plat and at a minimum shall conform to the requirements of Development Code Section 17.76.
12. The installation of street name signs and traffic control signs is required at locations determined by the City and shall be of a type required by City standards.
13. The installation of underground electric service, light standards, wiring, and lamps for streetlights of a type required by City standards following the making of necessary arrangements with the serving electric.

14. Upon completion of street improvements, centerline monuments shall be established and protected in monument boxes at every street intersection at all points of curvature, points of tangency of street center lines, and other points required by state law.
15. Elevation benchmarks shall be set at intervals established by the City Engineer. The benchmarks shall consist of a brass cap set in a curb or other immovable structure.
16. Street trees planted in landscape strips shall be listed on the City Carlton Street Tree list.
17. Bike lanes to Wilson Street and 3rd Street shall be painted to six-feet in width and two minimum 10-foot travel lanes, consistent with city street design standards.



DATE: October 24, 2023

TO: Casey Knecht, PE
Development Review Coordinator

FROM: Arielle Ferber, PE
Traffic Analysis Engineer

SUBJECT: S 2nd St Subdivision Development (Carlton, OR) – Outright Use
TIA Review Comments

ODOT Region 2 Traffic has completed our review of the submitted traffic impact analysis (dated February 6, 2023) to address traffic impacts due to development on the northeast quadrant of OR 47 and W Taylor Street/S Arthur Street in the city of Carlton, with respect to consistency and compliance with ODOT's Analysis Procedures Manual, Version 2 (APM). The APM was most recently updated in September 2023. The current version is published online at: <http://www.oregon.gov/ODOT/TD/TP/Pages/APM.aspx>. As a result, we submit the following comments for the City's consideration:

Analysis items to note:

- This study does not contain a simulation-based queuing analysis. Such analysis would have been scoped if this study had been required under ODOT's authority.

Recommended analysis items to be addressed:

1. The conceptual plan shows 3rd Street extending to the development site. However, it appears 3rd Street does not currently extend this far and as shown on the conceptual plan, is located on an adjacent tax lot. If construction of this roadway is not currently planned and funded, it should not be assumed as part of the analysis.
2. The analysis applied a COVID-19 adjustment factor to the traffic counts to estimate normal traffic conditions without impacts from the COVID-19 virus. However, at the time traffic counts were collected in June 2022 local schools were back to in person learning, as well as most workplaces. Therefore, it is unlikely that the traffic counts had significant impacts from COVID-19 and any reduction in traffic (compared to 2019 traffic volumes) is most likely due to permanent changes to travel patterns.
 - Application of the COVID adjustment factor results in higher traffic volumes and a more conservative intersection operational traffic analysis. Therefore, removing the COVID

adjustment factor would impact operational results, but would not impact the conclusions of the analysis.

- Without the COVID adjustment factor it is unlikely that the intersections meet preliminary traffic signal warrants.

Proposed mitigation comments:

3. ODOT maintains jurisdiction of the Tualatin Valley Highway No. 29 (OR 47) and ODOT approval shall be required for all proposed mitigation measures to this facility.
4. No mitigation measures have been proposed. This conclusion appears reasonable for this proposed development.

Thank you for the opportunity to review this traffic impact analysis. As the analysis software files were not provided, Region 2 Traffic has only reviewed the submitted report.

If the City determines any of the above comments will merit the need for reanalysis, we would be willing and able to assist with a second round of review.

If there are any questions regarding these comments, please contact me at (971) 208-1290 or Arielle.Ferber@ODOT.state.or.us



October 2023

Scott White, City Planner
 City of Carlton
 Planning Department
 191 E Main Street
 Carlton, OR 97111

RE: Completeness Review of S 2nd Street Subdivision (File No. 2023-02)

Dear Scott:

Thank you for reviewing the S 2nd Street Subdivision application (SUB 2023-02). This letter and accompanying information respond to your request for additional information that we received in the letter dated June 22, 2023 (attached). The additional information requested is shown in *italics*, with the applicant's response directly below.

1. *Page 3 and 4 of written statement, Residential Density. CMC 17.52.020., titled residential density, refers to "net" acre of land. Applicant written response to CMC 17.52.020.A (page 3) responds by describing the gross parcel size (at 4.87 acres) identifying 43 dwelling units as the maximum density, with the project proposing at total of 39 lots for future attached and detach single-family dwellings. Staff review of CMC 17.52.020 found no mention of "gross" in CMC 17.52.020 (only a reference to net). Staff observe the applicant written response to CMC 17.52.020.C (p. 4) to identify a calculation for net (at 3.34 acres). If 3.34 is the net developable area of the site, maximum density for the site would be 30 and the number of proposed lots (at 39) would then exceed. Clarifications are needed for the written statement and calculations shown for density.*

Response: Density, as defined in Section 17.12.020 is a measure of the number of dwelling units per gross acre, and pursuant to the Comprehensive Plan goals, the MX zone is to provide for a mixture of housing types with a maximum density of 9 dwelling units per acre. Therefore, density can be calculated using the definition stated in Chapter 17.12.020 that relies on gross density rather than net density. This interpretation of the density standards in the Carlton Development Code was previously relied upon to approve a subdivision on another property within the MX zoning district: SUB 2022-01 included 12 units on ±1.75 gross acres for a density of ±6.86 units per acre. See the decision of approval for SUB 2022-01 for an example of density being calculated using gross acreage.

The gross area of the subject property is ±4.87 acres. The planned subdivision includes 39 lots intended for single family dwellings. The planned density is ±8.01 units per acre, which is less than the maximum of 9 units per acre in the MX zoning district. Therefore, the density standard of the MX zoning district is met by the planned subdivision.

2. *Page 9 of written statement, Future Extension of Streets. Standard in D of CMC 17.46.030, states (in part) "Development shall provide future street extensions as shown on the future street plan in the Carlton Transportation System Plan." In part, applicant response to this standard acknowledges E. Taylor Street shown to the Future Street Plan of the Carlton Transportation Systems Plan (TSP) and how this street is planned to continue west for eventual connection with TV Highway (OR-47). Applicant response to D also refers to "conversations with City staff" on how*

this planned intersection is currently an area of concern and for this reason E. Taylor Street is not shown (via the Subdivision proposal) to extend and stub to the western project site boundary.

Staff observe the standard in D to include mandatory text “shall” and how the code does not authorize any a member of city staff to adjust the location of TSP planned street extensions / connections administratively. Also, removal of streets from planned extensions shown to the TSP is considered ineligible for modification consideration under CMC 17.46.050 (specific to adjustment of street / right-of-way width and improvements). Accordingly, staff recommends a plan revision that shows Taylor Street extended to the western project site boundary. See also Advisory Notes on this topic.

Response: The updated Preliminary Plans depict E Taylor Street extending to the western boundary of the subject site as requested.

3. *Page 15 of written statement, Street Modification criteria (to street right-of-way and improvement width). Criteria in CMC 17.46.050 is two-part. Narrative response to part B of 17.46.050 is provided. Response to part A (1 through 4) of 17.46.050 was not provided. On this topic, staff recommend adjusting the plan to include sidewalks inside the right-of-way and not within separate sidewalk easements of lot area as shown. Staff also recommend clarification of what proposed streets are subject to modification through CMC 17.46.050.*

Response: Additional findings to the relevant criteria mentioned above are provided in the updated application narrative. As demonstrated by the application narrative and the Preliminary Plans, E Wilson Street is the only street in the planned subdivision planned to be modified as permitted by Chapter 17.46.050. As designed and demonstrated by the updated Preliminary Plans, full right-of-way width is provided, and improvements are included for S 2nd Street. The updated Preliminary Plans depict sidewalks within the public right-of-way of S 2nd Street.

4. *Page 23 of written statement, Standards for Water Improvements (observation by Gordon Munro, City Engineer). CMC 17.76.020.C.2 requires fire flow. Plans / materials do not provide a model of the water system showing ability to provide fire flow within the system as laid out. Staff observe how a model for JR Meadows 3 was provided and how the system may extend into this subdivision. If fire flow is not obtained, more off-site water line improvements may be required.*

Response: A demonstration of adequate fire flow is provided with the updated application materials (Preliminary Water System Design Report).

5. *Page 40 of written statement and Traffic Study (observation by Gordon Munro, City Engineer). 17.100.070.B identifies the thresholds and requirements for conducting a traffic study. While a traffic study is provided, there is one street (Second Street, existing) not addressed by the study. Staff observe how certain off-site improvements are proposed on Second Street, which will likely direct some traffic from the subdivision to Second Street over to Polk. Staff observe how the TIA does not study the intersection at Second/Polk for forecasted AM / PM peak trip generation / movement / distribution. As Second Street is currently sub-standard (i.e., less paving and improvement levels comparatively to Street Standards of CMC 17.64 and city Street Design Manual for construction) the impact of additional trips on existing improvement should be studied. Also, staff observe the traffic study to account for certain street improvements approved for the*

JR Meadows No. 3 subdivision, but these improvements are not under construction. In part, the traffic study assumes the improvement of JR Meadows 3 to be constructed.

Response: An updated copy of the TIA and the application narrative are included and provide findings pertaining to S 2nd Street and its intersection with E Polk Street.

Advisory Notes

1. *Provide concept plan showing feasibility of subsequent lot development consistent with design standards in CMC 17.106., and essential development characteristics (described in CMC 17.52.010.B) where attached residential is intended. Staff observe how the MX zone is intended (as the purpose statement explains) to accommodate a mixing of residential housing types. The purpose statement also describes “Well-configured squares, gardens, and open spaces woven into street and block patterns and dedicated to collective social activity, recreation and visual enjoyment.”*

Staff acknowledge how the above is not described in further detail to relevant design standards. Staff also recognize the ability to delay subsequent submittal of a Site Design Review application to the city (for construction of single-family attached) to a later date, as proposed. While the Site Design Review application is not sought at this time, staff is to inform the Commission of relevant design standards in CMC 17.106 for future lot development and how the proposed lot configuration of this subdivision limits building design options as described therein. Currently, staff observe the proposed lot configuration to predicate the need for future construction of garage openings that face the street. In review of the design standards / illustrations shown to CMC 17.106, parking is accessed from the rear, side or via shared driveway if accessed from the street. To the above, staff recommend proving a concept plan showing feasibility of subsequent lot development consistent with design standards in CMC 17.106. for lots intended for future attached residential.

Response: The Preliminary Plans and application narrative have been updated and the Preliminary Single-Family Attached Home Driveway Schematic has been added to address the standards of CMC 17.106 and demonstrate that the lots planned for attached housing units can meet the standards of that section.

2. *Explore potential for lots (intended for attached dwellings) to be access via alley. As mentioned above, staff recommends a plan revision that shows the extension of Taylor Street to the western project site boundary, for consistency with the Carlton TSP. Extending Taylor to the western boundary also provides an opportunity for most lots (intended for attached housing) to be accessed via alley. If Taylor Street is extended west, it may be possible to extend an alley (running north-south, paralleling the SPRR right-of-way). If E. Taylor is extended west, the alley can be accessed from E. Wilson Street (north) and E. Taylor Street from the south. Staff observe a relevant code provision in CMC 17.52.030.F.1 that states “When a garage opening faces a street, it shall be setback from the street property line by not less than 20-feet or recessed behind the front elevation...” Adding an alley diminishes the need for garage openings to face the street and enables buildings to be positioned closer to the street. Also, Second Street would be available for on-street parking (absent driveway accesses to Second) and there would be additional design options for attached residential in review of CMC 17.106 when the Site Design Review application is sought in the future.*

Response: The updated Preliminary Plans depict the extension of E Taylor Street to the west boundary of the subject property as requested. As discussed in Chapter 17.106.030(F), single-family attached housing can be accessed from a front lot line when:

“compliance with subsection 17.106.030(E) is not practical due to topographic or other site constraints.”

As defined by the Cambridge dictionary, practical means: “suitable for the situation in which something is used.” As demonstrated by the updated Preliminary Plans, the subject site is uniquely shaped in that it is not rectangular and includes a curved westerly lot line along the abandoned railroad right-of-way. Including an alley as described above would not be suitable for the site because the alley would abut an abandoned right-of-way intended for a future trail and would be separated from the rights-of-way of S Arthur Street and OR-47 only by the abandoned railroad right-of-way. Shared driveways for attached housing along E Wilson Street and S 2nd Street are more suitable for the site due to the impracticality of alleys in the location suggested and are consistent with the design of attached housing in adjacent neighborhoods (including the JR Meadows No. 3 subdivision to the east).

The Preliminary Single-Family Attached Home Driveway Schematic demonstrates that the future lots planned for attached housing include shared driveways along front property lines that meet the design criteria of the CMC. The updated application narrative addresses the unsuitability of alleys and the practicality of shared driveways in further detail.

3. *Surcharges are shown in the storm system (observation by Gordon Munro, City Engineer). On the deeper pipe, it is likely acceptable; however, the manhole on Cleveland (JR2) it is surcharged to within 1.7-ft of the manhole rim. This is not acceptable. This is the same issue encountered in JR Meadows 3 and staff found it was not acceptable there either. Staff required detention or other methods to reduce the surcharge for JR Meadows 3 and will do so again for this proposed development. The issue is at the same location as for JR Meadows 3.*

Response: Surcharges in the storm system are required to be addressed by the adjacent development, JR Meadows 3 (currently in development). This project will reflect the JR Meadows 3 surcharge mitigation methods in construction documents. This project will not be constructed prior to JR Meadows 3 and is reliant on it for infrastructure connections.

4. *S. 2nd Street at E Polk Street (observation by Gordon Munro, City Engineer). As mentioned above, staff observe the traffic study to account for certain street improvements approved for the JR Meadows 3 (via Preliminary Subdivision) but not constructed or under construction. P. 4 (Summary item #5) identifies safety, and crossing pedestrians, at the intersection of S 3rd Street at E Polk Street (“expected to operate efficiently and safely through the 2026”) and refers to improvements identified for JR Meadows 3. Staff observe certain improvements (i.e., bike lanes to 3rd) that can be mentioned. Staff also recommend the study to examine safety and crossing pedestrians at the intersection of S 2nd & E Polk Street.*

Response: An updated TIA is provided with the updated application materials and addresses pedestrian and vehicle trips at the intersection of S 2nd Street and E Polk Street as they pertain to the planned subdivision. Additional findings have been made in the updated application narrative addressing improvements along S 3rd Street. As demonstrated by the updated Preliminary Plans and the updated TIA, the planned street and intersection

improvements along S 2nd Street are adequate to serve the anticipated vehicular and pedestrian traffic impacts associated with the planned subdivision.

5. *Proposal for Tract A? (observation by Gordon Munro, City Engineer). This tract is observed to be long, narrow and located on the north side of E. Wilson Street. There is no plan showing development intent or options (street trees, open space or landscaping?). Tract A is not located such that it would help much with storm drainage. The sidewalk could be moved back and a swale could be constructed, but it would not be required. Also, staff recommend identifying who is to maintain / own Tract A (e.g., a Homeowners Association).*

Response: As depicted in the updated Preliminary Plans, Tract A is intended to remain vacant as open space. This tract is planned to be owned and maintained by the declarant or the City, if the City will accept it.

6. *Sewer service easement benefiting home on the NW corner of property at 751 S. 2nd Street. (observation by Gordon Munro, City Engineer). Staff observe a sanitary sewer service easement and pipe (area of lots 20 and 21) to benefit property addressed at 751 S. Second Street. Public Works staff verified service to the home to the south. Recommend plan note shown to Sheet P.03 of the Preliminary Subdivision plan to explain.*

Response: A plan note has been included with the updated Preliminary Plans explaining the sewer easement as requested.

7. *Water connection west of site to provide a more reliable water system (option to explore, observation by Gordon Munro, City Engineer). The water line on Wilson St. could be connected across the old railroad tracks to the 6" on Arthur Street, creating a more reliable water system. Looping the water system is encouraged in CMC 17.76.020. Staff acknowledge how this water connection is located west of project (off-site) and this is an option to consider, if feasible.*

Response: Following conversations with City Engineer Gordon Munro, a water connection across the abandoned railroad right-of-way connecting the E Wilson Street main to S Arthur Street was determined to be unnecessary as part of the planned improvements. This option is therefore not included in the planned improvements.

Thank you for your review of these application materials. Please let us know if you have questions.

Sincerely,

AKS ENGINEERING & FORESTRY, LLC



Sean Vermilya
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Tualatin, OR 97062
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Attached Materials:

Updated Preliminary Plans
Updated Application Narrative
Updated Preliminary Stormwater Report
Updated Transportation Impact Analysis



Decision of Approval for SUB 2022-01
Preliminary Water System Design Report
Excerpts from the Carlton Comprehensive Plan
E Taylor Street Future Offsite Concept Plans
Preliminary Single-Family Attached Home Driveway Schematic



S 2nd Street Subdivision

Date: June 2023 (Updated October 2023)

Submitted to: City of Carlton
Planning Department
191 E Main Street
Carlton, OR 97111

Applicant: Max & Janette Nardoni
13800 NE Brookside Lane
Carlton, OR 97111

AKS Job Number: 4206



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12965 SW Herman Road, Suite 100
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Exhibits (Updated July 2023)

- Exhibit A:** Preliminary Plans (**Updated October 2023**)
- Exhibit B:** Application Form and Checklist
- Exhibit C:** Preliminary Stormwater Report (**Updated September 2023**)
- Exhibit D:** Transportation Impact Analysis (**Updated September 2023**)
- Exhibit E:** FEMA Flood Insurance Rate Maps (FIRM and FIRMette)
- Exhibit F:** Yamhill County Assessor’s Map
- Exhibit G:** Ownership Information
- Exhibit H:** List of Surrounding Property Owners
- Exhibit I:** Excerpts from the Carlton Comprehensive Plan (**Added October 2023**)
- Exhibit J:** Preliminary Water System Design Report (**Added July 2023**)
- Exhibit K:** Decision of Approval for SUB 2022-01 (**Added October 2023**)
- Exhibit L:** Potential/Conceptual Future Offsite Circulation Map (**Added October 2023**)
- Exhibit M:** Preliminary Single-Family Attached Home Driveway Schematic (**Added October 2023**)

S 2nd Street Subdivision

Submitted to:	City of Carlton Planning Department 191 E Main Street Carlton, OR 97111
Applicant:	Max & Janette Nardoni 13800 NE Brookside Lane Carlton, OR 97111
Property Owner:	Entrust Group Inc. Jannette Nardoni 555 12 th Street, Suite 1250 Oakland, CA 94607
Applicant's Consultant:	AKS Engineering & Forestry, LLC 12965 SW Herman Road, Suite 100 Tualatin, OR 97062
	Contact: Sean Vermilya Email: seanv@aks-eng.com Phone: (503) 563-6151
Site Location:	751 S 2 nd Street
Yamhill County Assessor's Map:	3 4 22CC Tax Lot 1100
Site Size:	±4.87 acres
Land Use District:	Mixed Density Residential (MX)

I. Executive Summary

AKS Engineering & Forestry, LLC, on behalf of Max and Janette Nardoni (Applicant), is submitting this application for City approval to create a 39-lot residential subdivision. The site is within the City of Carlton (City) and in 2007 was zoned Mixed Density Residential (MX), becoming one of the only two properties within the City to have this zoning designation.

The City recently adopted amendments to the Carlton Development Code providing dimensional requirements for lots slated to accommodate single-family attached dwellings within the MX zoning district. Although the subject site is zoned MX, this project includes lots for future single-family attached dwellings that incorporate those new dimensions to provide single-family attached dwellings in Carlton.

This application involves the creation of a new residential subdivision. The project is consistent with City zoning and includes 39 residential lots; 25 of these are intended to accommodate future single-family detached dwellings and 14 are intended to accommodate future single-family attached dwellings. A separate site design review application for the single-family attached dwellings is required and planned to be submitted in the future. The subject site is directly west of the planned JR Meadows No. 3 Subdivision and will provide east-west and north-south transportation system connections encouraged by City's June 2009 *Transportation System Plan* (TSP).

Recognizing the need for additional housing, this project incorporates features that the City has identified as critical to facilitating anticipated future growth while accommodating constraints imposed by required infrastructure and necessary utilities. The project includes:

- **Interconnected Transportation Network:** This subdivision will be served by a comprehensive transportation network that includes an extension of E Wilson Street (modified City Collector street) from the east, S 3rd Street (City School Collector street) from the north, S 2nd Street (Local street) from the north, and E Taylor Street (Local street) from the east. These streets are generally consistent with the Future Street Plan of the City's TSP. These street extensions help the City accomplish goals found in the City's TSP and provide the framework for future connectivity.
- **Linked Pedestrian Circulation System:** This project includes a network of sidewalks that creates a walkable community for future residents.
- **Infrastructure:** This project includes a full range of underground utilities through the site and provides for potential future development opportunities for other properties in the area. This application includes sanitary sewer, stormwater facilities, water, and transportation improvements that have been designed to demonstrate that the infrastructure systems will have necessary capacity to accommodate the planned subdivision.
- **Housing Variety:** This application involves a subdivision that includes 25 lots for future detached single-family dwellings and 14 lots that are planned to accommodate future attached single-family dwellings. This mix of housing types is ±65 percent single-family detached to ±36 percent single-family attached, providing greater housing variety in Carlton.

This application includes the City application forms, written materials, and Preliminary Plans necessary for City staff to review and determine compliance with the applicable approval criteria. The evidence is substantial and supports the City's approval of the application.

II. Site Description/Setting

The subject site is ±4.87 acres located in the southeastern portion of the City of Carlton within the Urban Growth Boundary (UGB) at 751 S 2nd Street (Yamhill County Assessor’s Map 3 4 22CC, Tax Lot 1100). There is an existing single-family dwelling and associated outbuildings located on the property that are planned to be removed in conjunction with the subdivision improvements.

The properties to the north of the site have Residential Medium-High Density (R-3) and Agricultural Holding (AH) zoning designations and are improved with single-family residential dwellings. The properties to the east and south are also in the AH zoning district; the property to the east is vacant and used for farming and the property to the south is improved with a single-family dwelling. The property to the west is part of the abandoned Southern Pacific Railroad (SPRR) right-of-way that is now within the jurisdiction of Yamhill County.

III. Applicable Review Criteria

This application involves a “limited land use decision” as that term is defined in Oregon Revised Statute (ORS) 197.015(12). ORS 197.195(1) describes how certain standards can be applied as part of a limited land use application. The applicable land use regulations for this application are found in the Carlton Development Code. Pursuant to ORS 197.195(1) Comprehensive Plan provisions (as well as goals, policies, etc. from within the adopted elements of the Comprehensive Plan) may not be used as a basis for a decision or an appeal of a decision unless they are specifically incorporated into the land use regulations. While this application may respond to Comprehensive Plan and related documents, such a response does not imply or concede that said provisions are applicable approval criteria. Similarly, the applicant does not waive its right to object to the attempted implementation of these provisions unless they are specifically listed in the applicable land use regulations, as is required by ORS 197.195(1).

Pursuant to ORS 197.522, if this application is found to be inconsistent with the applicable land use regulations, the applicant may offer an amendment or propose conditions of approval to make the application consistent with applicable regulations. The local government is obligated to consider and impose any conditions of approval proposed by the applicant if such conditions would allow the local government to approve an application that would not otherwise meet applicable approval criteria.

CARLTON DEVELOPMENT CODE

Division II. ZONING AND DEVELOPMENT PROVISIONS

Chapter 17.52 MIXED DENSITY RESIDENTIAL (MX) DISTRICT

17.52.020 Residential density.

To achieve balance and integration of a range of housing types, sizes, and densities, the mixed density residential (MX) zone relies on three (3) criteria.

- A. The intent of the MX zone is to achieve an overall density of nine (9) dwelling units per net acre of residential land.

Response: “Density” is defined in Chapter 17.12.020 – Definitions as:

“Density” means a measure of the number of dwelling units per gross acre.’

There is no definition in Chapter 17.12.020 for “net acre.” Therefore, the definition of “density” in Chapter 17.12.020 is used to calculate density. Furthermore, the City of Carlton Comprehensive Plan states:

“The MX Zone provides for a mix of housing types with a maximum density of nine (9) dwelling units per acre.”

The Comprehensive Plan does not identify “net acreage” as the appropriate measurement for density in the MX zoning district.

A prior City of Carlton land use approval (SUB2022-01, Exhibit J) used gross acreage to determine compliance with the MX zoning district density standard. Per the Notice of Decision for SUB2022-01, the standards of Chapter 17.52.020 – Residential Density were met, with findings stating:

“The proposed subdivision indicates 12 lots for attached single family homes on 1.75 acres, a density of approximately 7 units per acres. Criteria A-C are met.”

The following table demonstrates that the density measurement used to approve SUB2022-01 is consistent with the definition of “density” found in CMC Chapter 17.12.020:

Standard	Measurement
Site Acreage	±1.75 acres
Density Standard	9 du/acre
Maximum Density	15 units
Approved No. of Units	12 units
Approved Density	±7 du/acre (6.86 du/acre)

As demonstrated by Table 1 above, SUB2022-01 was approved with a density of ±7 units per acre calculated according to the density definition of CMC Chapter 17.12.020. Therefore, the Municipal Code, Comprehensive Plan, and historical precedent of subdivisions approved in the MX zoning district are cohesive in utilizing the density definition of Chapter 17.12.020 to measure density. Accordingly, the following table shows the density calculation for this application:

Standard	Measurement
Site Acreage	±4.87 acres
Density Standard	9 du/acre
Maximum Density (9 * site acreage)	±43 units
Planned No. of Units	39 units
Planned Density	±8.01 du/acre
Percentage of Attached Units Required	25%
Planned No. of Attached Units	14 units
Planned Percentage of Attached Units	±36%

As demonstrated by Table 2 above, the planned subdivision includes 39 units on ±4.87 acres for a density of ±8.0 units per acre. Therefore, the planned density is less than the maximum density of 9 units per acre in the MX zoning district. This standard is met.

- B. To reflect the demand for rental and higher-density housing within the region, at least twenty-five (25) percent of the units must be either in multi-family or attached single-family structures, e.g., townhomes or duplexes.

Response: As demonstrated by Table 2 in the response to subsection (A) above, the planned subdivision includes 14 lots intended for attached housing, which comprises ± 36 percent of the 39 total planned lots. This standard is met.

- C. To meet the continuing demand for single-family housing while reducing land costs, the majority of residential land in each neighborhood should be for higher-density single-family housing, either detached (generally between six (6) to nine (9) dwellings per net acre) or attached (generally between nine (9) to twelve (12) dwellings per net acre).

Response: As demonstrated by the Preliminary Plans (Exhibit A) and discussed in response to subsection (A) above, the planned density for the subdivision is ± 8.0 units per acre. There are 39 planned lots, of which 25 are detached (65 percent) and 14 are attached (36 percent). Therefore, a majority of the planned units are for high-density single-family housing and are provided at a density between 6 and 9 units per acre. This standard is met.

17.52.030 Permitted uses.

Within any MX zone, no structure shall be used, constructed, erected, or altered, and no lot shall be used or occupied for any purposes except the following:

- A. Residential dwellings, including single-family, manufactured homes, and multifamily structures.
- B. Open space uses.

Response: This application involves a subdivision that includes lots for future residential units. Pursuant to the above provisions, this is a permitted use within the MX zoning district. These standards are met.

(...)

17.52.050 Building setbacks.

A minimum of five (5) foot setback is required from all alleys. For residential uses, a minimum of ten (10) foot setback is required for a front yard (street side) setback. Open covered and uncovered porches may extend within the front setback to within five (5) feet of the front property line. Except as may otherwise be required with the MX zone, there shall be no other minimum building setbacks.

Response: The Preliminary Plans (Exhibit A) illustrate that the future dwellings can meet the front yard setback standards listed above. Pursuant to the above, no additional building setbacks are required within this zoning district. A site design review application showing building setbacks is planned to be submitted and reviewed separately from this application. To the extent applicable, this standard is met.

17.52.060 Lot requirements.

- A. There are no minimum lot-size requirements, except as lot size is controlled by overall MX zone density and lot coverage requirements.

Response: As discussed herein, this project meets the density requirements for the MX zoning district and will meet applicable lot coverage requirements. A site design review application showing lot coverage is planned to be submitted and reviewed separately from this application. To the extent applicable, this standard is met.

- B. Lot Frontage. Lots within the MX zone shall have the following street frontage requirements:

Lot Frontage Requirements		
	Maximum	Minimum
Single-Family Residential	100 feet	25 feet
Multifamily Residential	30 feet/unit	6 feet/unit, min 24 feet

Response: This application involves a subdivision for future single-family dwellings, and pursuant to the above table, each lot is required to have 25 feet of frontage. As shown on the Preliminary Plans (Exhibit A), each of the planned lots has a minimum of 25 feet of frontage. This standard is met.

- C. Lot Coverage in the MX Zone. The total lot coverage, including area covered by buildings, roofed structures, and impervious paved surfaces, shall not exceed seventy-five (75) percent.

Response: A site design review application addressing lot coverage is to be submitted and reviewed separately from this application.

- 17.52.070 Building height.
No building height shall exceed three (3) stories or thirty-five (35) feet in height.

Response: Compliance with building height is to be addressed at the time of a future site design review application and/or building permit, as applicable.

- 17.52.080 Building and site design.
All residential structures shall conform to the design standards of Chapter 17.106.

Response: This project complies with the applicable provisions regarding site design as stated in findings pertaining to Chapter 17.106 below. A site design review application showing compliance with building design is to be submitted and reviewed separately from this application for attached dwellings. For detached dwellings, the applicable portions of Chapter 17.106 are subject to review through the building permit process. This standard is met to the extent applicable.

Division III. GENERAL DEVELOPMENT STANDARDS

Chapter 17.60 GENERAL PROVISIONS

- 17.60.020 Application of standards.
 - A. The standards set forth in this chapter shall apply to partitions; subdivisions; planned unit developments; commercial and industrial

projects; single-family dwellings, duplexes, and multi-family structures. Developments outside the city which will tie into or take access from city streets, or increase the flow or change the point of discharge to the city storm drainage system shall be subject to the improvement standards set forth in this title to the extent necessary to mitigate the impacts to these systems.

Response: This application involves a residential subdivision. Therefore, the standards of this chapter apply.

B. The application of these standards to a particular development shall be modified as follows:

1. Development standards that are unique to a particular use, or special use, shall be set forth within the district;
2. Those development standards which are unique to a particular district shall be set forth in the section governing that district.

Response: To the extent applicable, the application of these standards can be modified as outlined in the provisions above.

C. No public works construction shall be undertaken until an agreement is executed between the developer and the city specifying the period within which required improvements and repairs shall be completed, as well as referencing the terms and conditions under which the city has approved the development. The agreement shall be in the form acceptable to the city attorney.

Response: This requirement is understood.

17.60.030 Application of public facility standards.

Standards for the provision and utilization of public facilities or services available within the City of Carlton shall apply to all land developments in accordance with the following table of reference. No development permit shall be approved unless the following improvements are provided for prior to occupancy or operation, or unless future provision is assured in accordance with Chapter 17.216.

Excerpt of Public Facilities Improvement Requirements Table						
	Fire Hydrant	Streets	Water Hookup	Sewer Hookup	Storm Drain	Streetlights
Partition, Subdivisions, PUD, or Manufactured Home Park	C-1	Yes	Yes	Yes	Yes	Yes
<p>Legend: No = Not required Yes = Required C = Conditional, as noted: C-1 Fire Hydrants for Commercial, Industrial Expansions, or Residential Uses: One or more fire hydrants are required as per the Uniform Building Code and Uniform Fire Code or if adequate fire flows are not available to the site. If the existing water lines are insufficient to provide adequate fire flows, water lines shall be upgraded to provide sufficient capacity at the developer's expense.</p>						

Response: The required public facilities improvements are illustrated on the Preliminary Plans in Exhibit A in compliance with the standard above. A streetlight plan will be created in conjunction with Portland General Electric (PGE) and the City prior to submission for construction permits, as is customary and appropriate. This standard is met as applicable.

17.60.040 Design standards.

The design of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required, shall comply with the requirements of the most recently adopted Standard Specifications for Public Works Construction in the City of Carlton.

Response: The required public facility improvements are designed to comply with the most recently adopted Standard Specifications for the Public Works Construction in the City of Carlton, as illustrated on the Preliminary Plans (Exhibit A). This standard is met.

Chapter 17.64 STREET STANDARDS

17.64.020 Scope.

The provisions of this chapter shall be applicable to:

- A. The creation, dedication, or construction of all new public or private streets, pedestrian facilities, and bikeways in all subdivisions, partitions, or other developments in the city.
- B. The extension or widening of existing public or private street rights-of-way, easements, or street improvements including those which may be proposed by an individual or the city, or which may be required by the city in association with other development approvals.
- C. The construction or modification of any utilities, bikeways, or sidewalks in public rights-of-way or private street easements.
- D. The planting of street trees or other landscape materials in public rights-of-way (landscape strip).

Response: This application includes the design and construction of new public street extensions in association with a subdivision application. Therefore, the provisions of this chapter are applicable.

17.64.030 General provisions.

The following provisions shall apply to the dedication, construction, improvement, or other development of all public streets in the city, and are intended to provide a general overview of typical minimum design standards. All streets shall be designed in conformance with the specific requirements of the most recently adopted Standard Specifications for Public Works Construction in the City of Carlton and the Transportation System Plan.

The standard sections contained in Standard Specifications for Public Works Construction in the City of Carlton and the Transportation System Plan are minimum requirements only and shall not be construed as prohibiting the city engineer from requiring thicker sections or engineer designed pavement sections in lieu of standard sections where conditions warrant.

- A. The location, width, and grade of streets shall be considered in their relation to existing and planned streets, to topographical conditions, to public convenience and safety, and to the proposed use of the land to be served by the streets.

Response: As shown on the Preliminary Plans (Exhibit A), this project includes extensions of E Wilson Street, E Taylor Street, and S 2nd Street. As part of the planned JR Meadows No. 3 Subdivision, S 3rd Street is planned to be improved with a three-quarter street improvement. As demonstrated by the Preliminary Plans, this project includes completing the street improvements for S 3rd Street.

The planned improvements are designed with consideration to existing streets, topographical conditions, resource constraints, public convenience and safety, and the layout of the planned residential subdivision, as illustrated on the Preliminary Plans. Additionally, the application includes roadways and infrastructure described in the City's TSP. Therefore, this standard is met.

- B. Development proposals shall provide for the continuation, and connection to, all streets, bikeways and pedestrian facilities within the development and to existing streets, bikeways and pedestrian facilities outside the development.

Response: As shown on the Preliminary Plans (Exhibit A), this project includes extensions of E Wilson Street, E Taylor Street, and S 2nd Street, as well as improvements to S 3rd Street. The planned extensions also include pedestrian facilities that connect to existing streets, bikeways, and pedestrian facilities outside the site, as appropriate. The extensions of E Wilson Street and E Taylor Street to the west and S 3rd Street to the south are extended to the boundaries of the site to facilitate future street connections upon development of adjacent properties.

The streets included in this subdivision include improvements such as sidewalks and bicycle facilities that provide internal connectivity as provided by this section. Therefore, this standard is met as applicable.

- C. Alignment. All streets other than minor streets or culs-de-sac, as far as practical, shall be in alignment with existing streets by continuation of the centerline thereof. The staggering of street

alignments resulting in "T" intersections shall leave a minimum distance recommended by the city engineer.

Response: As demonstrated by the Preliminary Plans (Exhibit A), this project includes the extension of three public streets. Based on the existing street patterns surrounding the subject site, these extensions are in alignment with existing streets. Staggered street alignments are not included in the project. To the extent applicable, this standard is met.

D. Future Extension of Streets. In order to promote the development of an efficient network of city streets and connections to state and county roads, development shall provide future street extensions as shown on the Future Street Plan found in the Carlton Transportation System Plan.

In addition to providing for future street extensions shown on the Future Street Plan, streets, bikeways and pedestrian facilities, shall also be extended to the boundary of a tract being developed, where necessary to give access to or permit a satisfactory future development of adjoining land. Reserve strips and street plugs may be required to preserve the objectives of street extensions.

Response: The Future Street Plan found in the City of Carlton TSP includes planned extensions to S 3rd Street, E Wilson Street, and E Taylor Street. As demonstrated in the Preliminary Plans (Exhibit A), this project includes the extension of E Wilson Street and E Taylor Street and improvements to S 3rd Street consistent with the future street plan of the Carlton TSP.

Where appropriate, streets, bikeways, and pedestrian facilities will be extended to the boundaries of the subject site to permit satisfactory future improvements to adjoining land. Bicycle lanes are provided on E Wilson Street as required for a modified City Collector street. This application does not include reserve strips or street plugs. Therefore, this standard is met.

E. Existing Streets.

1. Three-quarter improvements to all existing streets adjacent to, within or necessary to serve the property, shall be required at the time of partitioning or subdivision, unless the applicant demonstrates to the satisfaction of the city engineer that the condition and sections of the existing streets meet city standards and are in satisfactory condition to handle projected traffic loads.

Full street improvements to all existing streets adjacent to, within or necessary to serve the property, shall be required when it is determined that the vehicular and/or pedestrian impacts from the proposed development necessitate such improvements.

Response: As demonstrated by the Preliminary Plans (Exhibit A), full street improvements are planned for E Wilson Street, E Taylor Street, and S 2nd Street, as necessary. An adjacent subdivision planned to the east of the subject site (JR Meadows No. 3) includes an extension of and three-quarter street improvements to S 3rd Street. This application includes the completion of the street improvements for S 3rd Street, as demonstrated by the Preliminary Plans. This standard is met as applicable.

2. For infill development that does not include partitioning or subdivision, construction of sidewalks, including curb and gutter where necessary, along all property frontages shall be the minimum requirement of development. A three-quarter street improvement shall be required if the city engineer determines that the existing streets are not in condition to handle projected traffic loads.

Response: This application involves a subdivision. Therefore, this standard is not applicable.

3. The city shall require the applicant to record an approved improvement deferral agreement or non-remonstrance agreement, see Section 17.216.030, in lieu of street improvements, where the following criteria are met:
 - a. The existing roadway condition and sections are adequate to handle existing and projected traffic loads; and
 - b. Existing public utilities (water, sanitary sewer and storm sewer) located within the existing roadway are adequate, or can be improved without damaging the existing roadway surface.

Response: As demonstrated by this written narrative and the application materials, this project complies with the required improvements. Therefore, a deferral agreement or non-remonstrance agreement in lieu of street improvements is not relevant, and these provisions do not apply.

- F. **New Streets.** Where new streets are created, full street improvements shall be required. Three-quarter streets may be approved in lieu of full street improvements on boundary streets when the city finds it to be practical to require the completion of the other one-quarter street improvement when the adjoining property is developed. The city may allow three-quarter street improvements if all of the following criteria are met:
 1. The adjoining land abutting the opposite side of the street is undeveloped; and
 2. Storm water drainage is provided for on the non-curbed side of three-quarter street improvements in areas judged by the city engineer to have drainage concerns.

One-foot wide reserve strips and street plugs may be required to preserve the objectives of three-quarter streets.

Response: Based on the code, standards, and the layout of the planned subdivision, full-street improvements are provided for streets internal to the project. As illustrated on the Preliminary Plans (Exhibit A), this project includes full-street improvements for E Wilson Street, E Taylor Street, and S 2nd Street. This project includes improvements to S 3rd Street, along the eastern boundary of the subject site, to complete the street improvements on that street. Three-quarter street improvements are planned for a portion of S 2nd Street that is located outside the boundaries of the subject site within the current S 2nd Street right-of-way. Therefore, this standard is met as applicable.

- G. **Culs-de-Sac.** Culs-de-sac shall have maximum lengths of four hundred (400) feet and serve no more than eighteen (18) dwelling units. All culs-de-sac shall terminate with circular turn-a-rounds.

Response: As shown on the Preliminary Plans (Exhibit A), this application does not include the creation of a public street with a cul-de-sac. Therefore, this standard does not apply.

- H. **Dead-End Streets.** When it appears necessary to continue a street or public access way into a future subdivision or adjacent acreage, streets, or public access way shall be platted to a boundary of a subdivision or partition. The street may be platted without a turnaround unless the Planning Commission finds that a turnaround is necessary.

Response: Per the City of Carlton TSP, E Wilson Street, E Taylor Street, and S 3rd Street are planned to be extended beyond the boundaries of the subject site. As shown on the Preliminary Plans (Exhibit A), this project includes the continuation of E Wilson Street and E Taylor Street from the east and S 3rd Street also from the north that extend to the boundary of the subdivision to facilitate future street connections. The Preliminary Plans demonstrate that E Wilson Street and E Taylor Street are planned to be extended to the site's western boundary, and S 3rd Street is planned to be extended to the site's southern boundary. The extensions do not include a turnaround. Therefore, this standard is met.

- I. **Street Names.** Street names and numbers shall conform to the established pattern in the city and shall be subject to the approval of the city. Street names shall be required for all new publicly dedicated streets and private streets.

Response: This project includes extensions to E Wilson Street, E Taylor Street, and S 2nd Street, and improvements to S 3rd Street. These are the names of existing streets and conform to the established pattern. This standard is met.

- J. **Grades and Curves.** Grades shall not exceed six percent on arterials, ten (10) percent on collectors, or twelve (12) percent on any other public or private street. To provide for adequate drainage, all streets shall have a minimum slope of 0.5 percent. Center line radii of curves shall not be less than three hundred (300) feet on major arterials, two hundred (200) feet on minor arterials, or one hundred (100) feet on other streets and shall be to an even ten (10) feet. On arterials there shall be a tangent of not less than one hundred (100) feet between reversed curves. Where existing conditions, particularly topography, make it otherwise impractical to provide buildable lots, the Planning Commission may accept steeper grades and sharper curves.

Response: As illustrated on the Preliminary Plans (Exhibit A), the planned public street extensions are designed to comply with the provision above. Therefore, this standard is met.

- K. **Marginal Access Streets.** If a development abuts or contains an existing or proposed arterial street or railroad right-of-way, the city may require marginal access streets, reverse frontage lots with suitable depth, screen planting contained in a non-access reservation along the rear or side property line, or such other treatment as may be necessary for adequate protection of residential properties and to afford separation of through and local traffic.

Response: The subject site abuts the abandoned railroad right-of-way previously owned and occupied by the SPRR. This right-of-way is now under the jurisdiction of Yamhill County and railroad improvements do not exist in the right-of-way. Further improvements are not planned for this right-of-way at the time of this application. Additionally, the subject site does not abut or contain any existing or planned Arterial streets. Therefore, this standard does not apply.

L. **Vision Clearance Area.** Vision clearance areas shall be maintained on corner lots at the intersection of all public streets and at the intersections of a public street with a private street as outlined in Section 17.92.080.

Response: Vision clearance areas for all planned streets are shown on the Preliminary Plans (Exhibit A) and are planned to be maintained, consistent with the provision above and as outlined in Section 17.92.080. Please refer to the response in Section 17.92.080 below for further information. This standard is met.

M. **Spacing Between Public Road Intersections.** Spacing between public road intersections for each functional class of road shall conform to access spacing standards found in Section 17.100.030.

Response: Please refer to the responses to access spacing standards found in Section 17.100.030 below, which demonstrate compliance with this standard.

N. **Landscape Strip.** The landscape strip includes the area located between a sidewalk and the curb (see figure below). This area serves many important functions including creating space for a variety of underground utilities such as telephone, cable television, fiber optic cables, etc. The landscape strip is also beneficial for locating utility poles, fire hydrants, benches, bus shelters and other features that might otherwise block or obstruct pedestrian travel along sidewalks. Landscaping helps to soften the hard edge created by pavement and curbs. Large trees can also provide cooling summer shade for parked cars and pedestrians. A canopy of street trees can help to slow traffic and enhance the beauty of the community. The physical separation from the street also improves the design of sidewalks by maintaining a constant grade without dipping at driveways, and makes American with Disabilities Act compliance easier. During winter months, snow can be plowed into these areas from the street and not block sidewalks. The landscape strip provides a physical separation from the adjacent roadway, providing enhanced pedestrian comfort and improved walking experience.

Landscaping and plant materials used in the landscape strip are subject to the provisions of Chapter 17.84. Maintenance of landscape strips in the right-of-way is the continuing obligation of the adjacent property owner.

Response: As demonstrated by the Preliminary Plans (Exhibit A), this project includes extensions of a Collector street (E Wilson Street), an existing School Collector street (S 3rd Street), and an existing Local street (S 2nd Street). The project also includes an extension of a new Local street (E Taylor Street) that is planned to be installed as part of the JR Meadows No. 3 subdivision. As previously discussed with City staff and addressed in Section 17.64.050, E Wilson Street has been designed to meet a Modified Collector street standard.

As required by Section 17.64.040, this project includes landscape strips along E Wilson Street and portions of S 2nd Street where townhouses are planned. The ±5-foot-wide landscape strips are located in the public right-of-way between the curb and the public sidewalk. The planned landscape strips meet the provisions of Chapter 17.84. This standard is met.

17.64.040 Right-of-way and improvement widths.

The following standards are general criteria for all types of public streets, bikeways, landscape strips and sidewalks in the city. These standards shall be the minimum requirements for all streets, except where modifications are permitted under Section 17.64.050.

Street Classification		ROW Width (ft.)	Pavement Width (ft.)	Sidewalk Width (ft.)	Landscape Strip (ft.)	Bikeway Width (ft.)	Parking
Local	Typical	47-57	34	5 ¹	5 (optional)	N/R	2 sides
Collector	Existing Street	55	40	6 ¹	N/R	None ⁴	2 sides
	New Street	71	46	6 ¹	5	5	2 sides
	School Zone ³	49	34	6	N/R	5	None ⁵

¹ Ten-foot sidewalks required along commercially zoned property.

³ Applies to 3rd Street from Main Street to Polk Street and Polk Street from Pine Street to 3rd Street

⁴ Bicycle lanes required on Grant Street from Yamhill Street to Pine Street and Yamhill Street from Main Street to Grant Street.

⁵ On-street parking permitted to be included during design phase where ROW available.

The property line radius at intersections of local streets shall be twenty (20) feet. All other intersection property line radii shall be according to the specifications of the city engineer.

Response:

The Preliminary Plans (Exhibit A) illustrate the planned right-of-way and improvement widths for new streets within the subject site. This application includes the extension of existing streets (E Wilson Street, S 2nd Street, and S 3rd Street) as well as the extension of E Taylor Street, a new street being improved as part of the JR Meadows No. 3 subdivision. A summary of the planned improvements are as follows:

E Wilson Street: This street is classified as a Collector street. Per previous conversations with City staff, it is understood that the modified Collector street design and right-of-way width of E Wilson Street shown on the Preliminary Plans are allowed by way of a modification (included in this application) and further discussed in Section 17.64.050. Therefore, as demonstrated on the Preliminary Street Plan included in Exhibit A, the planned improvements include a ±46-foot-wide paved section, ±6-foot-wide bike lanes, ±7-foot-wide on-street parking on either side, curbs, ±5-foot-wide landscape strips, and ±6-foot-wide sidewalks within a ±71-foot-wide right-of-way.

E Taylor Street: This street is classified as a Local street. As demonstrated by the Preliminary Plans (Exhibit A), improvements include a ±34-foot-wide paved section, curbs, and ±5-foot-wide sidewalks on either side within a ±50-foot-wide right-of-way.

S 2nd Street: This street is classified as a Local street. As demonstrated by the Preliminary Plans (Exhibit A), the planned improvements include a ±34-foot-wide paved section, curbs, and ±5-foot-wide sidewalks on either side within a ±53-foot-wide right-of-way. Additionally, ±5-foot-wide landscape strips are planned along the west side of S 2nd Street within the right-of-way where townhouse lots are present (Lots 5, 11-18).

As discussed with the City Engineer at the pre-application conference, off-site improvements to S 2nd Street are planned as part of this project and include ±20 feet of paved section replacing the existing gravel surface. As demonstrated by the Preliminary Plans, off-site improvements to S 2nd Street include a ±20-foot-wide paved section.

S 3rd Street: This street is classified as a School Collector street. The JR Meadows No. 3 subdivision is planned to improve S 3rd Street to three-quarter street standards. As part of this application, S 3rd Street will be improved to meet full street standards for a School Collector street. Improvements are planned to include a ±9-foot-wide paved section, a ±6-foot-wide bike lane, a curb, and a ±6-foot-wide sidewalk. Improvements also include a varying right-of-way dedication (between ±4.40 feet and ±9.50 feet) to increase the S 3rd Street right-of-way to its required width of ±50 feet along the site frontage. Following the planned improvements, S 3rd Street will meet the street standards of a ±50-foot-wide right-of-way with a ±34-foot-wide paved section, ±6-foot-wide bike lanes, curbs, and ±6-foot-wide sidewalks.

17.64.050 Modification of right-of-way and improvement width.

The city, pursuant to the review procedures of Chapter 17.196, may allow modification to the public street standards of Section 17.64.040, when both of the following criteria are satisfied:

- A. The modification is necessary to provide design flexibility in instances where:
 1. Unusual topographic conditions require a reduced width or grade separation of improved surfaces; or
 2. Parcel shape or configuration precludes accessing a proposed development with a street which meets the full standards of Section 17.64.040; or
 3. A modification is necessary to preserve trees or other natural features determined by the city to be significant to the aesthetic character of the area; or
 4. A planned unit development is proposed and the modification of street standards is necessary to provide greater privacy or aesthetic quality to the development.
- B. Modification of the standards of Section 17.64.040 shall only be approved if the city finds that the specific design proposed provides adequate vehicular access based on anticipated traffic volumes.

Response: As previously discussed, E Wilson Street has been designed to a modified Collector standard and, as such, a modification is included in this application. As shown on the Preliminary Plans (Exhibit A), E Wilson Street is planned to have a ±46-foot-wide paved section with ±5-foot planter strips and ±6-foot-wide public sidewalks within a ±71-foot-

wide right-of-way. The planned right-of-way widths are consistent with street widths in residential neighborhoods and will provide continuity between the new section of E Wilson Street and the portion of E Wilson Street in the JR Meadows No. 3 subdivision.

Additionally, as discussed in the Transportation Impact Analysis (Exhibit D) prepared by Lancaster Mobley, the site and transportation system related to the planned subdivision were analyzed, and it was determined that the planned roadways are expected to have sufficient capacity to accommodate traffic volumes in a safe and efficient manner. These standards are met.

17.64.060 Private streets.

- A. Streets and other rights-of-way serving a planned unit development that are not dedicated for public use shall comply with the following (...)

Response: Private streets are not included in this application. This section does not apply.

- B. Any grant of a private street or land functioning as an easement shall not be accepted by the city and dedicated for public use except upon approval of the council and upon meeting the specifications of Sections 17.64.020 and 17.64.040.

Response: This application does not include a grant of a private street to the public. This standard is not applicable.

17.64.070 Access easements.

A private access easement created as the result of an approved partitioning shall conform to the following:

- A. Partition access easements shall only be allowed where the applicable criteria of Section 17.88.030(D) are satisfied. The easement shall comply with the following standards:
1. Minimum width: twenty (20) feet;
 2. Minimum paved or curb to curb width: twenty (20) feet;
 3. Maximum length: two hundred fifty (250) feet;
 4. No more than three dwelling units shall have sole access to the easement.
- B. Unless otherwise specified in the Standard Specifications for Public Works Construction in the City of Carlton, all private streets serving more than two dwelling units shall be constructed to the same pavement section specifications required for public streets. Provision for the maintenance of the street shall be provided in the form of a maintenance agreement, homeowners association, or other instrument acceptable to the city attorney.
- C. A turn-around shall be required for any access easement which has only one outlet and which is in excess of two hundred (200) feet long or which serves more than two residences. Turn-arounds shall be either a circular turn-around with a minimum paved radius of thirty-five (35) feet, or a "tee" or "hammerhead" turn-around with a minimum paved dimension across the "tee" of seventy (70) feet and a twenty (20) foot width with appropriate radius at the corners.

- D. All private access easements serving more than two residences shall be designated as fire lanes and signed for no parking.

Response: This application involves a residential subdivision. Therefore, the standards above do not apply.

Chapter 17.68 OFF-STREET PARKING AND LOADING

17.68.020 Scope.

Development of off-street parking and loading areas for commercial, industrial, or multi-family development shall be subject to the site design review procedures of Chapter 17.156. The provisions of this chapter shall apply to the following types of development:

Response: This application involves a residential subdivision for the future construction of attached single-family dwellings. Commercial, industrial, or multifamily development is not included in this application; therefore, these standards are not applicable.

17.68.030 Location.

Off-street parking and loading areas shall be provided on the same lot with the main building or structure or use except that:

- A. In any residential zone or for any residential use permitted in a nonresidential zone, automobile parking areas may be located on another lot if such lot is within two hundred (200) feet of the lot containing the main building, structure or use.
- B. In any nonresidential zone, the parking area may be located off the site of the main building, structure or use if it is within five hundred (500) feet of such site.

Response: This application involves a residential subdivision and the required off-street parking for each of the future single-family dwellings is planned to be provided and located on the same individual lot. Compliance with these provisions for future dwellings is to be addressed at the time of building permit review. Therefore, to the extent applicable, this standard is met.

17.68.040 Joint use.

Parking area may be used for a loading area during those times when the parking area is not needed or used. Parking areas may be shared subject to city approval for nonresidential uses where hours of operation or use are staggered such that peak demand periods do not occur simultaneously. The requirements of Section 17.68.050 may be reduced accordingly. Such joint use shall not be approved unless satisfactory legal evidence is presented which demonstrates the access and parking rights of parties.

Response: This application involves the creation of a residential subdivision and does not include a nonresidential or joint use. Therefore, this standard does not apply.

17.68.050 Off-street parking requirements.

Except where other city code provisions waive off-street parking requirements or allow credit for on-street parking in lieu of off-street parking, developments and changes in use that are subject to site design review shall provide off-street parking as required by Section 17.68.080 and approved by the city in the amount not less than listed

below. The Planning Commission may reduce the off-street parking requirements contained herein without the need for a variance upon finding that the specific characteristics of a proposed use are different than a typical use regulated by this section and the proposed use warrants less parking, as demonstrated by evidence in the record.

Residential		
A.	1 and 2 family dwellings	2 spaces/ dwelling unit
B.	Multi-family dwellings	1 spaces/dwelling unit

Response: The minimum off-street parking requirement is two spaces per dwelling unit for single-family dwellings. Two required off-street parking spaces are planned to be provided and located on each individual lot or driveway of the single-family dwellings. Compliance with these provisions for future dwellings is to be addressed at the time of building permit review. Therefore, this standard is met as applicable.

17.68.060 Residential driveways.

All single and joint use residential driveways shall be paved and have a maximum twenty (20) foot approach width from the curb line.

Response: This application involves a residential subdivision for future single-family attached dwellings and single-family detached dwellings. A site design review application for the single-family attached dwellings will be submitted and reviewed separately and will include information regarding driveway widths. Compliance with the standards for residential driveways for the single-family detached dwellings will be addressed at the time of the building permit review. This standard is met as applicable.

17.68.070 Off-street loading requirements.

Buildings or structures to be built or substantially altered which receive and distribute materials and merchandise by trucks shall provide and maintain off-street loading berths in sufficient number and size to adequately handle the needs of the particular use.

Response: This application involves a residential subdivision and does not include a use that involves receiving or distributing materials and merchandise that would require loading berths. Therefore, this standard does not apply.

17.68.080 Parking and loading area requirements.

All parking and loading areas, except those for single-family dwellings, shall be developed and maintained as follows (...)

Response: This application involves a residential subdivision for the future construction of single-family dwellings. Therefore, this standard is not applicable.

17.68.090 General provisions—Off-street parking and loading.

- A. The provision and maintenance of off-street parking and loading space is a continuing obligation of the property owner. No building permit shall be issued until plans are presented that show an area that is and will remain available for exclusive use as off-street parking and loading space. The subsequent use of property for which the building

permit is issued shall be conditional upon the unqualified continuance and availability of the amount of parking and loading space required by this title. Should the owner or occupant of any lot or building change the use to which the lot or building is put, thereby increasing off-street parking and loading requirements, it shall be unlawful and a violation of this title to begin or maintain such altered use until such time as the increased off-street parking and loading requirements are observed.

Response: This application involves a residential subdivision. Compliance with Section 17.68.090 will be demonstrated at the time of building permit review for each of the future dwellings.

B. Requirements for types of buildings and uses not specifically listed herein shall be determined by the Planning Commission based upon the requirements of comparable uses listed and expectations of parking and loading need.

Response: This application involves a residential subdivision and the responses above in Section 17.68.050 demonstrate that off-street parking requirements can be met. Therefore, this requirement is not applicable.

C. In the event several uses occupy a single structure or parcel of land, the total requirements for off-street parking shall be the sum of the requirements of the several uses computed separately, unless a reduction is approved for shared parking pursuant to Section 17.68.040.

Response: As noted above, this application involves a residential subdivision. This application does not involve more than one use for a single structure or parcel of land. Therefore, this standard is not applicable.

D. Required parking spaces shall be available for the parking of operable passenger automobiles of residents, customers, patrons, and employees only, and shall not be used for storage of vehicles or materials or for the parking of trucks used in conducting the business or use.

Response: As noted above, the required off-street parking is associated with a residential subdivision. To the extent applicable, this requirement can be met.

17.68.100 Parking lot landscaping and screening standards.

All parking lots, which for purposes of this section include areas of vehicle maneuvering, parking, and loading, shall be landscaped and screened as follows:

Response: This application involves a residential subdivision and does not include a use that involves receiving or distributing materials and merchandise that would require parking lots. Therefore, the standard above does not apply.

17.68.110 Bicycle parking.

A. The following minimum number of bicycle parking spaces shall be provided:

Type of Use	Minimum Number
Single-Family Residential	0
Duplex, Triplex and Multi-Family	Minimum two or one per every two dwelling units, whichever is greater.

Response: This application involves a subdivision for future single-family residential dwellings. Therefore, these standards are not applicable.

Chapter 17.72 STORM DRAINAGE

17.72.020 Scope.

- A. The provisions of this chapter shall apply to all new residential land partitions and subdivisions, planned unit developments, multi-family developments, commercial developments, and industrial development; and to the reconstruction or expansion of such developments.

Response: The residential subdivision planned in this application is subject to the provisions of this chapter.

- B. The provisions of this chapter shall apply to all drainage facilities that impact any public storm drain system, public right-of-way or easement dedicated to or located within all off-street parking and loading areas.

Response: This provision is understood.

- C. All storm water runoff shall be conveyed to a public storm sewer or natural drainage channel having adequate capacity to carry the flow without overflowing or otherwise causing damage to public and/or private property. In the case of private development, the developer shall pay all costs associated with designing and constructing the facilities necessary to meet this requirement.

Response: The planned stormwater management system is illustrated on the Preliminary Plans (Exhibit A) and described in the Preliminary Stormwater Report (Exhibit C). The stormwater management system is designed to collect and convey runoff to the underground stormwater system that is being planned with the JR Meadows No. 3 Subdivision. This provision is met.

17.72.030 Plan for storm drainage and erosion control.

No construction of any facilities in a development included in Section 17.72.020 shall be permitted until a storm drainage and erosion control plan for the project is prepared by an engineer registered in the State of Oregon and approved by the city. This plan shall contain at a minimum:

- A. The methods to be used to minimize the amount of runoff, siltation, and pollution created from the development both during and after construction.
- B. Plans for the construction of storm sewers, open drainage channels, and other facilities that depict line sizes, profiles, construction specifications, and other such information as is necessary for the city to review the adequacy of the storm drainage plans.

- C. Design calculations shall be submitted for all drainage facilities. These drainage calculations shall be included on the site plan drawings and shall be stamped by a licensed professional engineer in the State of Oregon. Peak design discharges shall be computed using the rational formula and based upon the design criteria outlined in the Standard Specifications for Public Works Construction in the City of Carlton and the most current adopted storm drainage master plan.

Response: Storm drainage and erosion control measures included in the Preliminary Plans (Exhibit A) illustrate the methods and measures for planned storm drainage and erosion control. A Preliminary Stormwater Report that provides design calculations is included with this application (Exhibit C). These provisions are met.

17.72.040 General standards.

- A. All development shall be planned, designed, constructed and maintained to:
1. Protect and preserve existing natural drainage channels to the maximum practicable extent;

Response: The subject site does not contain an existing drainage channel; therefore, this standard is not applicable.

2. Protect development from flood hazards;

Response: Pursuant to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate maps included in Exhibit E, the subject site is not located within the floodplain and other flood hazards are not present. Therefore, this standard does not apply.

3. Provide a system by which water within the development will be controlled without causing damage or harm to the natural environment, or to property or persons within the drainage basin;

Response: Storm drainage and erosion control measures are included in the Preliminary Plans (Exhibit A). A Preliminary Stormwater Report demonstrating design calculations for the stormwater system is included with this application (Exhibit C). This standard is met.

4. Assure that waters drained from the development are substantially free of pollutants, through such construction and drainage techniques as sedimentation ponds, reseeded, phasing or grading;

Response: The subdivision design includes a conveyance system consisting of curb inlets, laterals, manholes, and piping. Erosion control measures are planned, including seeding (as necessary), such that sedimentation ponds are not necessary. A Preliminary Stormwater Report (Exhibit C) is included with this application. This standard is met.

5. Assure that waters are drained from the development in such a manner that will not cause erosion to any greater extent than would occur in the absence of development;

Response: Storm drainage and erosion control measures are included in the Preliminary Plans (Exhibit A) and design calculations of the stormwater system are included in the Preliminary Stormwater Report (Exhibit C). The plans and report demonstrate that this application meets those requirements. This standard is met.

6. Provide dry wells; French drains, or similar methods, as necessary to supplement storm drainage systems;

Response: The Preliminary Plans (Exhibit A) show that the planned stormwater facilities for the site do not require dry wells or French drains. To the extent applicable, this standard is met.

7. Avoid placement of surface detention or retention facilities in road rights-of-way.

Response: As shown on the Preliminary Plans (Exhibit A), this project does not include surface detention or retention facilities in road rights-of-way. This standard is met.

- B. Where culverts cannot provide sufficient capacity without significant environmental degradation, the city may require the watercourse to be bridged or spanned.

Response: This application does not involve crossing drainageways with culverts or bridges. Therefore, this standard does not apply.

- C. In the event a development or any part thereof is traversed by any watercourse, channel, stream or creek, gulch, or other natural drainage channel, adequate easements for storm drainage purposes shall be provided to the city. This does not imply maintenance by the city.

Response: As shown on the Existing Conditions Plan included in Exhibit A, the subject site does not include the noted features; therefore, easements are not necessary. This standard is not applicable.

- D. Channel obstructions are not allowed except as approved for the creation of detention or retention facilities approved under the provisions of this title. Fences with swing gates may be utilized.

Response: This application does not involve obstructions to drainage facilities. Therefore, to the extent applicable, this standard is met.

- E. Prior to acceptance of a storm sewer system by the city, the storm sewers shall be flushed and inspected by the city. All costs shall be borne by the developer.

Response: This standard is understood.

- F. Easements for creeks and other watercourses shall be provided and shall extend fifteen (15) feet in each direction from the waterway centerline, ten (10) feet from the top of a recognizable bank, or sufficient width to pass 10-year flood flows or 100-year floodway on FEMA regulated stream, whichever is greater. The easements required by this chapter shall be held to prohibit the placement of any building on or over the easement, but shall not preclude landscaping, and shall be held to require restoration of the site following any excavation or other disturbance permitted by the easement.

Response: As previously stated, the subject site does not have existing creeks or watercourses. Therefore, this standard does not apply.

Chapter 17.76 UTILITY LINES AND FACILITIES

17.76.020 Standards.

- A. The design of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required, shall comply with the requirements of the most current adopted Standard Specifications for Public Works Construction in the City of Carlton.

Response: As illustrated on the Preliminary Plans (Exhibit A), the utility infrastructure required for the construction of the project is designed to comply with the requirements of the most current adopted Standard Specifications for Public Works Construction in the City of Carlton. Therefore, this standard is met.

- B. The location, design, installation and maintenance of all utility lines and facilities shall be carried out with minimum feasible disturbance of soil and site.

Response: The Preliminary Plans (Exhibit A) illustrate that planned utilities are generally located within the rights-of-way of E Wilson Street, E Taylor Street, S 2nd Street, and S 3rd Street. Therefore, this standard is met.

- C. Standards for Water Improvements.

1. All developments shall be required to be linked to existing water facilities adequately sized to serve their intended area by the construction of water distribution lines, reservoirs and pumping station which connect to such water service facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.

Response: As illustrated on the Preliminary Plans (Exhibit A), the water system infrastructure to serve the subdivision is planned to connect to an existing water main on S 2nd Street as well as the water mains on S 3rd Street planned as part of the JR Meadows No. 3 Subdivision. This standard is met as applicable.

2. Specific location, size and capacity of such facilities will be subject to the approval of the city engineer with reference to the most current adopted City of Carlton water master plan. All water facilities shall conform with existing city pressure zones and shall be looped where necessary to provide adequate pressure and fire flows during peak demand at every point within the system in the development to which the water facilities will be connected. The city will not expect the developer to pay for the extra pipe material cost for waterlines exceeding eight inches in size. Installation costs shall remain entirely the developer's responsibility.

Response: As demonstrated by the Preliminary Composite Utility Plan included in the Preliminary Plans (Exhibit A, Sheet P-11), the planned water system infrastructure includes sufficient detail to find that this standard can be met. This includes points of connection and water line locations. This standard is met.

3. The design of the water facilities shall take into account provisions for the future extension beyond the development to serve adjacent properties that, in the judgment of the city, cannot be feasibly served otherwise.

Response: The Preliminary Plans (Exhibit A) illustrate that the water facility infrastructure is designed to adequately serve the subdivision. Extension of the planned water system infrastructure beyond what is planned for this project is not necessary to provide satisfactory opportunity for the adjacent properties to develop. This standard is met.

4. Design, construction and material standards shall be as specified by the city engineer for the construction of such public water facilities in the city.

Response: The application includes a Preliminary Composite Utility Plan within the Preliminary Plans (Exhibit A, Sheet P-11) that is suitable for planning-level purposes. Design details and construction and material specifications are planned to be provided with final construction documents as is customary and appropriate. This standard is met.

D. Standards for Sanitary Sewer Improvements.

1. All developments shall be required to be linked to existing sanitary sewer collection facilities adequately sized to serve their intended area by the construction of sewer lines which connect to existing adequately sized sewer facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.

Response: As shown on the Preliminary Composite Utility Plan (Exhibit A, Sheet P-11), this subdivision is planned to connect to an existing sanitary sewer main in S 2nd Street as well as a planned sewer main in S 3rd Street. The sanitary sewer line is planned to be extended through the site to provide service for each of the lots. This standard is met.

2. Specific location, size and capacity of such facilities will be subject to the approval of the city engineer with reference to the most current adopted wastewater facilities plan. All sewer facilities shall be sized to provide adequate capacity during peak flows from the entire area potentially served by such facilities. The city will not expect the developer to pay for the extra pipe material cost for sanitary sewer lines exceeding twelve (12) inches in size. Installation costs shall remain entirely the developer's responsibility.

Response: The Preliminary Composite Utility Plan (Exhibit A, Sheet P-11) illustrates planned sanitary sewer system infrastructure with sufficient detail to find that this criterion can be met. This includes points of connection and sewer line locations. This standard is met.

3. All properties shall be provided with gravity sanitary sewer service to a public sanitary sewer system except for parcels that have unique topographic or other natural features that make gravity sewer extension impractical as determined by the city engineer. Pumping stations will be allowed only when it has been demonstrated to the satisfaction of the city engineer that the development cannot be served by gravity. Maintenance of residential pumping stations is the responsibility of the property owner.

Response: As illustrated on the Preliminary Plans (Exhibit A), each lot in the subdivision is designed to be provided with gravity sewer service to the public sanitary sewer system. Therefore, this standard is met.

4. Temporary sewer service facilities, including pumping stations, will be permitted only if the city engineer approves the temporary facilities, including all facilities necessary for transition to permanent facilities.

Response: This application does not involve new sanitary sewer pump stations. Therefore, this standard is not applicable.

5. The design of the sewer facilities shall take into account provisions for the future extension beyond the development to serve upstream properties that, in the judgment of the city, cannot be feasibly served otherwise.

Response: As shown on the Preliminary Plans (Exhibit A), the subject site slopes uphill from east to west. The property to the east of the site is planned to be served by way of a sanitary sewer line provided as part of the JR Meadows No. 3 Subdivision. Sewer facilities to be installed as part of the JR Meadows No. 3 Subdivision project will adequately serve upstream properties. Therefore, to the extent applicable, this standard is met.

6. All land divisions or other developments requiring subsurface sanitary sewer disposal systems shall be prohibited.

Response: Subsurface sanitary sewer disposal systems are not necessary or planned. Therefore, this standard is not applicable.

7. Design, construction and material standards shall be as specified by the city engineer for the construction of such sewer facilities in the city.

Response: The application includes a Preliminary Composite Utility Plan (Exhibit A, Sheet P-11) that is suitable for planning-level purposes. Design details and construction and material specifications are planned to be provided with final construction documents. This standard is met.

8. Prior to acceptance of the sanitary sewer system by the city, the sewers shall be flushed and inspected by the city as required by the Standard Specifications for Public Works Construction in the City of Carlton. All costs shall be borne by the developer.

Response: This standard is understood.

- E. Street Lights. All developments shall include underground electric service, light standards, wiring and lamps for street lights according to the specifications and standards of the city engineer. The developer shall install all such facilities and make the necessary arrangements with the serving electric utility for the street lighting system.

Response: As demonstrated by the Preliminary Plans (Exhibit A), electric service for streetlights is being accommodated in the project design. Coordination with Portland General Electric

for the streetlight system design is planned to occur prior to future public infrastructure construction. Therefore, this standard is satisfied.

- F. **Private Utilities.** All development which has a need for private utilities, including but not limited to electricity, gas, and communications services shall install them pursuant to the requirements of the district or company serving the development.
1. Except as otherwise provided herein, all utility lines, cables or wires, including but not limited to those used for electricity, communications services and street lighting which are on or adjacent to land partitioned, subdivided or developed within the City of Carlton after the effective date of the ordinance codified in this title, shall be required to be placed underground. The intent of the city is that no poles, towers, or other structures associated with utility facilities shall be permitted on any street or lot within or adjacent to such partition, subdivision or development.

Response: The Preliminary Plans (Exhibit A) illustrate locations provided for public utility easements where new underground utility infrastructure is planned to be installed, consistent with the criteria above. This standard is met.

2. **Exceptions.** Above ground facilities shall be permitted for the following in which case the above provisions shall not apply:
 - a. Emergency installations or electric transmission lines or to through feeders operating at distribution voltages which act as a main source of supply to primary lateral and to direct connected distribution transformers and primary loads. Should it be necessary to increase the capacity of major power transmission facilities for service to the area, such new or revised installations shall be made only on rights-of-way or easements on which existing overhead facilities exist at the time of such capacity increase;
 - b. Appurtenances and associated equipment such as surface-mounted transformers, pedestal-mounted terminal boxes, meter cabinets, telephone cable closures, connection boxes and the like;
 - c. Structures without overhead wires, used exclusively for fire alarm boxes, streetlights, or municipal equipment installed under the supervision and with the approval of the city engineer;
 - d. Power substations, pumping plants, and similar facilities necessary for transmission or distribution of utility services shall be permitted subject to compliance with all zoning regulations and other applicable land use regulations. The engineer for all such facilities, prior to any construction being started, shall approve plans showing landscaping and screening;

- e. Certain industries requiring exceptionally large power supplies may request direct overhead power as a condition;
- f. If existing overhead utilities within or adjacent to the development total less than one hundred fifty (150) linear feet, the city may allow the applicant to record an approved improvement deferral agreement, see Section 17.216.030, in lieu of relocating existing private utilities underground at the time of development.

Response: With the exception of those provisions listed above, new utility infrastructure is planned to be installed underground. These standards are met.

- 3. **Information on Development Plans.** The developer or subdivider shall show on the development plan or in his or her explanatory information, easements for all underground utility facilities. Plans showing the location of all underground facilities as described herein shall be submitted to the city engineer for review and approval. Care shall be taken in all cases to ensure that aboveground equipment does not obstruct vision clearance areas for vehicular traffic.

Response: The Preliminary Plans (Exhibit A) illustrate the existing and planned easements for underground utility facilities, as applicable. Therefore, this standard is met.

- 4. **Future Installations.** The owner(s) or contract purchaser(s) of subdivided real property within a subdivision shall, upon conveyance or transfer of any interest including a leasehold interest in or to any lot or parcel of land, provide in the instrument conveying such interest a covenant running with and appurtenant to the land transferred under which grantee(s) or lessee(s), their heirs, successors, or assigns mutually covenant not to erect or allow to be erected upon the property conveyed any overhead utility facilities, including electric, communication, and cable television lines, poles, guys, or related facilities, except such facilities as are exempt from underground installation under this title or are owned or operated by the city. Such covenant shall require grantees to install, maintain, and use underground electric, telephone, cable television, or other utility services used or to be used to serve the premises. A copy of the covenant shall be submitted with the final plats.

Response: Compliance with this criterion is to be addressed at the time of building permit review.

- K. **Easements for public and private utilities shall be provided as deemed necessary by the city, special districts, and utility companies. Easements for special purpose uses shall be of a width deemed appropriate by the responsible agency. Such easements shall be recorded on easement forms approved by the city attorney and designated on the final plat of all subdivisions and partitions. Minimum required easement width and locations are as follows:**

Easement Type	Minimum Width	Location
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Water	10 feet	(1)(2)
Sewer	10 feet	(1)(2)
Storm (piped)	10 feet	(1)(2)
Storm (other)	(5)	(5)
Private Utility	5 feet (parallel)	(3)(4)
	10 feet (other)	(1)
(1) Centered on utility line. (2) Centered on property line, where possible. (3) All property lines fronting existing or proposed street rights-of-way (4) Measured from edge of right-of-way (5) Determined on a case by case basis		

Response: To the extent easements for public and private utilities are deemed necessary, their locations and dimensions are indicated on the Preliminary Plans (Exhibit A). This standard is met.

Chapter 17.84 SITE AND LANDSCAPING DESIGN

17.84.020 Scope.

All construction, expansion, or redevelopment of structures or parking lots for commercial, multi-family, or industrial uses shall be subject to the landscaping requirements of this chapter. The construction of new streets containing landscape strips shall also be subject to the landscaping requirements of this chapter.

Properties within the Downtown Parking District (Exhibit A of Chapter 17.68) are exempt from landscaping requirements, except as specifically required by Chapter 17.30 Downtown (D) District design standards and guidelines.

Response: Although this chapter is not applicable to this application to create a new subdivision, the provisions of Chapter 17.156 require landscaping plans with site design review applications. This application involves a residential subdivision that includes lots designated for future single-family attached dwellings and new streets containing landscape strips. A future site design review application showing required landscaping is required to be submitted and reviewed separately. Therefore, the standards of this chapter are not applicable at this time.

17.84.070 Screening and buffering.

Where required by ordinance, or where placed as a condition of approval, screening and buffering shall meet the following minimum requirements:

- A. Screening shall be used to eliminate or reduce the visual and noise impacts of the following uses:
 1. Commercial and industrial uses when abutting residential uses;
 2. Industrial uses when abutting commercial uses;

3. Service areas and facilities, including garbage and waste disposal containers, recycling bins, and loading areas;
 4. Outdoor storage areas;
 5. Parking areas for ten (10) or more vehicles for multi-family developments, or twenty (20) or more vehicles for commercial or industrial uses;
 6. At and above-grade electrical and mechanical equipment, such as transformers, heat pumps, and air conditioners;
 7. Any other area or use as required by this title.
- B. Screening may be accomplished by the use of sight-obscuring plant materials (generally evergreens), earth berms, walls, fences, building parapets, building placement, or other design techniques.
- C. Buffering shall be used to mitigate adverse visual impacts, dust, noise or pollution, and to provide for compatibility between dissimilar adjoining uses. Where buffering is determined to be necessary, one of the following buffering alternatives shall be employed:

Response: This application involves a residential subdivision that abuts properties with existing residential uses. The project does not include service areas, outdoor storage areas, multi-family projects, commercial, or industrial uses. Therefore, screening or buffering is not required for this project.

Chapter 17.88 DEVELOPMENT STANDARDS FOR LAND DIVISIONS

17.88.020 Scope.

The provisions of this chapter shall apply to all subdivisions, planned unit developments and partitions within the City of Carlton.

17.88.030 Standards for lots or parcels.

- A. **Minimum Lot Area.** Minimum lot area shall conform to the requirements of the zoning district in which the parcel is located.

Response: Pursuant to Section 17.52.060, lots within the MX zoning district do not have minimum lot area requirements. This standard is not applicable.

- B. **Maximum Lot Area.** When single-family residential use is proposed for a lot with an area double or greater than the minimum density of the underlying zone the Planning Commission may take into consideration the potential for further division of the lot at a future date.

Response: As illustrated on the Preliminary Plans (Exhibit A), the subdivision does not include lots with an area double or greater than the minimum density in the MX zoning district. Additionally, lots within the MX zoning district do not have a minimum lot area requirement. Therefore, this standard is not applicable.

- C. **Lot Width and Depth.** The depth of a lot or parcel shall not be more than three times the width of the parcel, with the following exceptions:

1. Parcels created for public utility uses or in zones where there is no minimum lot area requirement shall be exempt from width to depth ratio provisions.
2. Lots within residential zones where the permitted minimum lot width is less than forty (40) feet may be permitted to have a width-depth ratio of no greater than 5:1.

Response: Pursuant to Section 17.52.060, lots within the MX zoning district do not have a minimum lot area requirement. Therefore, the lots included in this project are exempt from the width to depth ratio provisions, and these standards do not apply.

D. Access. All lots and parcels created after the effective date of the ordinance codified in this title shall provide a minimum frontage, on an existing or proposed public street, equal to twenty (20) feet. An exception shall apply when residential lots or parcels and planned unit developments, may be accessed via a private street or easement developed in accordance with the provisions of Chapter 17.64 or when the city finds that public street access is:

1. Infeasible due to parcel shape, terrain, or location of existing structures; and
2. Not necessary to provide for the future development of adjoining property.

Response: This application involves a subdivision for residential lots created after the effective date of the ordinance codified in this title (December 12, 2011). The subject site has an MX zoning designation, and pursuant to Section 17.52.060 each lot is required to have 25 feet of frontage. As illustrated on the Preliminary Plans (Exhibit A), each of the lots has a minimum of 25 feet of frontage on all public streets located on the subject site. This standard is met.

E. Flag Lots. If a flag-lot is permitted, the following standards shall be met:

Response: As illustrated on the Preliminary Plans (Exhibit A), the planned subdivision does not include flag lots. Therefore, this standard is not applicable.

F. Through Lots. Through lots shall be avoided except where essential to provide separation of residential development from major traffic arteries, adjacent nonresidential activities, or to overcome specific disadvantages of topography and orientation. A ten (10) foot wide screening or buffering easement, pursuant to the provision of Chapter 17.84, may be required by the city during the review of the land division request.

Response: As illustrated on the Preliminary Plans (Exhibit A), this project does not include through lots. This standard is met.

G. Lot Side Lines. The side lines of lots, as far as practicable, shall run at right angles to the right-of-way line of the street upon which the lots face.

Response: As illustrated on the Preliminary Plans (Exhibit A), the side lot lines run at right angles to the street upon which the lots face to the degree practicable. Therefore, this standard is met.

- H. **Lot Grading.** The minimum elevation at which a structure may be erected, taking into consideration the topography of the lot, the surrounding area, drainage patterns and other pertinent data, shall be established by the building inspector.

Response: The Preliminary Plans (Exhibit A) include lot grading that demonstrates that lot elevations are sufficient to build structures and provide for positive drainage. This standard is met.

- I. **Utility Easements.** Utility easements shall be provided on lot areas where necessary to accommodate public utilities. Such easements shall have a minimum total width as specified in Section 17.76.020.

Response: The location and width of public utility easements are shown on the Preliminary Plans (Exhibit A), consistent with the provision above. This standard is met.

17.88.040 Standards for blocks.

- A. **General.** The length, width, and shape of blocks shall be designed with regard to providing adequate building sites for the use contemplated; consideration of needs for convenient access, circulation, control, and safety of street traffic; and recognition of limitations and opportunities of topography.

B. **Sizes.**

1. **Block Length.** Except as provided in Section 17.100.030 for the Main Street Special Transportation Area (STA), blocks in residential and commercial districts shall be a minimum of one hundred (100) feet long and shall not exceed six hundred (600) feet in length between street right-of-way lines, unless the previous adjacent development pattern or topographical conditions justify a variation. Blocks that exceed six hundred (600) feet in length shall provide additional pedestrian and bicycle accessways.
2. **Block Perimeter.** Block perimeters in residential and commercial districts shall not exceed one thousand four hundred (1,400) feet.

Response: This application involves a residential subdivision. As demonstrated by the Preliminary Plans (Exhibit A), blocks within the planned subdivision are greater than 100 feet long and less than 600 feet long between street right-of-way lines. Block perimeters are less than 1,400 feet. Therefore, this standard is met.

- C. **Alleys.** Alleys may be provided in all districts, however, alleys shall be provided in commercial and industrial areas, unless other permanent provisions for access to off-street parking and loading facilities are provided.

Response: This application does not include alleys; therefore, this standard is not applicable.

17.88.050 Improvement requirements.

All improvements required by this title or as conditions of approval of any subdivision or partition shall be completed prior to the issuance of any building permits for any structures within the subject development. If the developer requests approval to record the final plat before all required improvements have been constructed and all conditions of approval have been met by the developer and accepted by the city, the developer shall provide a security guarantee

satisfactory to the city that all improvements will be constructed in conformance with all city standards and ordinances and all conditions of approval will be satisfied. If the total street frontage of the development is less than or equal to two hundred fifty (250) feet, the applicant may request to sign and the city may grant an improvement deferral agreement or non-remonstrance agreement.

Response: This standard is understood and can be met, as applicable.

- A. **Frontage Improvements.** Street improvements shall be required for all public streets on which a proposed land division fronts in accordance with Chapter 17.64. Such improvements shall be designed to match with existing improved surfaces for a reasonable distance beyond the frontage of the property. Frontage improvements shall include: sidewalks, curbing, storm sewer, sanitary sewer, water lines, other public utilities as necessary, and such other improvements as the city shall determine to be reasonably necessary to serve the development or the immediate neighborhood.

Response: Frontage improvements on S 3rd Street are planned to complete the street improvement requirements for a portion of that street. This standard is met.

- B. **Project Streets.** All public or private streets within the land division shall be constructed as required by the provisions of Chapter 17.64. Private driveways serving flag lots or private streets shall be surfaced as per the requirements of this title.

Response: The Preliminary Plans (Exhibit A) illustrate that the public streets planned to be constructed within the subdivision are consistent with the provisions of Chapter 17.64. Please refer to the responses in Chapter 17.64 above.

- C. **Monuments.** Upon completion of street improvements, centerline monuments shall be established and protected in monument boxes at every street intersection at all points of curvature, points of tangency of street center lines, and other points required by state law.

Response: This standard is understood and can be met.

- D. **Bench Marks.** Elevation benchmarks shall be set at intervals established by the city engineer. The benchmarks shall consist of a brass cap set in a curb or other immovable structure.

Response: This standard is understood and can be met.

- E. **Surface Drainage and Storm Sewer System.** Drainage facilities shall be provided within the land division and to connect the land division drainage to drainage-ways or to storm sewers outside the land division and shall be consistent with the most current adopted storm water master plan. Design of drainage within the land division shall take into account the capacity and grade necessary to maintain unrestricted flow from areas draining through the land division and to provide extension of the system to serve such areas. The design shall take into account provisions for the future extension beyond the land division to serve upstream properties that, in the judgment of the city, cannot be served otherwise.

Response: The Preliminary Plans (Exhibit A) and Preliminary Stormwater Report (Exhibit C) demonstrate that the planned stormwater management system accommodates

stormwater runoff from areas draining through the subdivision and provides for future connections extending the system to other adjacent properties, where applicable. This standard is met.

- F. **Sanitary Sewers.** Sanitary sewer shall be installed to serve the land division and to connect the Land division to existing mains both on and off the property being divided. The design shall take into account provisions for the future extension beyond the land division to serve upstream properties that, in the judgment of the city, cannot be served otherwise. The city may require that the construction of sewage lines of a size in excess of that necessary to adequately service the development in question, where such facilities are or will be necessary to serve the entire area within which the development is located when the area is ultimately developed.

Response: The Preliminary Plans (Exhibit A) show the planned sanitary sewer system improvements, which are designed to provide adequate capacity. Sanitary sewer improvements on E Wilson Street, S 2nd Street, and S 3rd Street facilitate future service extensions to adjacent properties to the west, north, and south, respectively. It is understood that the City may require sewer lines of a size in excess of that which is necessary. This standard is met.

- G. **Water System.** Water lines with valves and fire hydrants serving the land division and connecting the land division to the city mains shall be installed. The design shall take into account provisions for extension beyond the land division to adequately grid the city system and to serve the area within which the development is located when the area is ultimately developed. However, the city will not expect the developer to pay for the extra pipe material cost of mains exceeding eight inches in size. Installation costs shall remain entirely the developer's responsibility.

Response: The Preliminary Composite Utility Plan included with Exhibit A shows the planned water system infrastructure including water lines, water valves, and fire hydrants that are planned to serve the subdivision. Water system improvements on E Wilson Street, S 2nd Street, and S 3rd Street facilitate future service extensions to adjacent properties. It is understood that installation costs remain the developer's responsibility. This standard is met.

- H. **Pedestrian Facilities and Bicycle Ways.** Sidewalks shall be installed along both sides of each public street and in any pedestrian or bicycle ways within the land division as well as along all frontages to existing streets. Sidewalks shall be extended as required to connect to other sidewalk systems. The city may defer sidewalk construction until the dwellings or structures fronting the sidewalk are constructed. Any required off-site sidewalks, sidewalks fronting public property, or sidewalks adjacent to existing structures shall not be deferred.

Response: As shown on the Preliminary Plans (Exhibit A), new sidewalks and bicycle ways are planned for public streets located on the subject site where necessary and/or applicable. Sidewalks will connect to other existing sidewalk systems on S 2nd Street and S 3rd Street, as well as sidewalks planned to be installed as part of the JR Meadows No. 3 Subdivision on E Wilson Street and E Taylor Street. Bicycle ways will be provided on S 3rd Street and E

Wilson Street as is required on Collector and School Collector streets, respectively. This standard is met.

- I. **Pedestrian/Bicycle Design Standards.** Pedestrian/bicycle access ways shall meet the following design standards:

Response: This application does not include pedestrian or bicycle access ways. Therefore, these standards are not applicable.

- J. **Other.**

1. Curb cuts and driveway installations, excluding common drives, are not required of the land divider but, if installed, shall be according to the city standards;
2. Street tree planting is not required of the land divider but, if planted, shall be in accordance with city requirements and of a species compatible with the width of the planting strip;

Response: Curb cuts and street tree plantings will be reviewed upon building permit submittal. These standards can be met.

3. **Streetlights.** The installation of underground electric service, light standards, wiring, and lamps for streetlights of a type required by city standards following the making of necessary arrangements with the serving electric;

Response: Electrical service for streetlights will be accommodated in the project design. Coordination with Portland General Electric for the streetlight system design is planned to occur prior to future public infrastructure construction. Therefore, this standard is satisfied.

4. **Street Signs.** The installation of street name signs and traffic control signs is required at locations determined to be appropriate by the city and shall be of a type required by city standards.

Response: This application includes extensions of E Taylor Street, E Wilson Street, S 2nd Street, and S 3rd Street and is planned to include street signs as necessary. These improvements will be designed and constructed in accordance with the requirements of the City of Carlton. Therefore, these standards will be met.

17.88.060 Improvement procedures.

In addition to other requirements, improvements installed by a developer for any land division, either as a requirement of these regulations or at his or her own option, shall conform to the requirements of this title and improvement standards and specifications adopted by the city, and shall be installed in accordance with the following procedure:

- A. Improvement work shall not commence until plans have been checked for adequacy and approved by the city engineer. Plans shall be prepared in accordance with requirements of the city.

Response: This procedural requirement is understood and can be met.

- B. Improvement work shall not commence until the city has been notified in advance; and, if work has been discontinued for any reason, it shall not be resumed until the city has been notified.

Response: This procedural requirement is understood and can be met.

- C. Improvements shall be constructed under the inspection and to the satisfaction of the city engineer. The city may require changes in typical sections and details in the public interest, if unusual conditions arise during construction to warrant the change.

Response: This procedural requirement is understood and, to the extent applicable, can be met.

- D. All underground utilities, sanitary sewers, and storm drains installed in streets by the developer shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities and sanitary sewers shall be placed to a length eliminating the necessity for disturbing the street improvements when service connections are made. Unless otherwise approved by the city, this shall be interpreted as extending to the right-of-way or easement line.

Response: This procedural requirement is understood and can be met.

- E. Upon completion of the public improvements and prior to final acceptance of the improvements by the city, the developer shall provide two certified as-built drawings of all public utility improvements to the city. As-built conditions and information shall be reflected on one set of Mylar base as-built drawings. The developer's engineer shall submit the as-built drawings to the city.

Response: This procedural requirement is understood and can be met.

Chapter 17.92 YARD AND LOT STANDARDS

17.92.010 New buildings—Required to be located on a lot.

Every building erected shall be located on a lot as herein defined.

Response: As illustrated on the Preliminary Plans (Exhibit A), this application involves a residential subdivision. Each of the newly created lots is designed to be suitable for the future construction of a new single-family dwelling. Therefore, this standard is met.

17.92.020 Yards apply only to one building.

No required yard or other open space or required driveway provided around or for any building or structure for the purpose of complying with the provisions of this title shall be considered as providing a yard or open space for any other building, nor shall any yard or other required space on an adjoining lot be considered as providing a yard or open space on the lot whereon the building is to be erected.

Response: The planned setbacks are illustrated on the Preliminary Plans (Exhibit A), which show that setbacks are associated with an individual lot consistent with this standard. Therefore, this standard is met.

17.92.030 No parking in yard areas.

Exclusive of city-approved paved or gravel driveways, no parking shall be allowed within the required front yard area or yards located adjacent to a street. The side yard and rear yard areas may not be used for parking of vehicles, except in city-approved parking areas.

The yard areas adjacent to a street shall not be used for the permanent storage of utility trailers, house or vacation trailers, boats, or other similar vehicles.

Response: This application involves a subdivision for the future construction of attached and detached single-family dwellings. A minimum of two off-street parking spaces will be provided in the garage and driveway of each of the single-family dwellings. This standard is met.

17.92.040 Front yard projections.

(...)

17.92.050 Side yard projections.

(...)

17.92.060 Rear yard projections.

(...)

Response: This application involves a residential subdivision that includes lots for future attached and detached single-family dwellings. Compliance with the standards for front, side, and rear yard projections for the single-family dwellings will be addressed upon building permit review. These standards will be met.

17.92.070 Vision clearance.

A. A vision clearance area shall be maintained at each access to a public street and on each corner of property at the intersection of two streets or a street and a railroad. A vision clearance area shall contain no planting, sight-obscuring fence (open chain link excluded), wall, structure, or temporary or permanent obstruction exceeding three (3) feet in height, measured from the ground. The preceding provisions shall not apply to the following:

1. Public utility poles;
2. A tree trimmed (to the trunk) to a line at least eight (8) feet above the level of the intersection;
3. Another plant species of open growth habit that is not planted in the form of a hedge and which is so planted and trimmed as to leave at all seasons a clear and unobstructed cross-view;
4. A supporting member or appurtenance to a permanent building lawfully existing on the date this standard becomes effective;
5. An official warning sign or signal;
6. A place where the natural contour of the ground is such that there can be no cross-visibility at the intersection;
7. The post section of a pole sign when there are no more than two posts and any post is less than eight inches in diameter;
8. Telephone switch boxes provided they are less than ten (10) inches wide at the widest dimension.

Response: The required vision clearance areas shown on the Preliminary Plans (Exhibit A) are consistent with the provisions above. These standards are met.

- B. For single use residential driveways, the vision clearance area shall consist of a triangular area, two sides of which are the curb line and the edge of the driveway. Where no curbs exist, the future location of the curb, based on future full street improvements shall be used.

Response: The required vision clearance areas shown on the Preliminary Plans (Exhibit A) are consistent with the provision above. This criterion is met.

- C. The following measurements shall establish the vision clearance areas

Type of Intersection	Measurement Along Each Lot Line or Drive Edge*
Controlled intersection (stop sign or signal)	15 feet
Uncontrolled intersection	40 feet
Commercial and industrial driveways	20 feet
Residential driveways	10 feet
Alley	15 feet

Response: The vision clearance areas for intersections shown on the Preliminary Plans (Exhibit A) are compliant with the requirements of Section 17.92.070(C). Vision clearance areas for driveways will be reviewed at the time of building permit review. Therefore, to the extent applicable, this standard is met.

17.92.080 Fences, walls and hedges.

A. Materials.

1. Fences and walls shall not be constructed of nor contain any material that could cause bodily harm, such as barbed wire, broken glass, spikes, or any other hazardous or dangerous materials. Electric fences are not permitted;
2. Electric or barbed wire fences intended to contain or restrict cattle, sheep, horses or other livestock, and existing prior to annexation to the city, may remain;
3. All required swimming pool and hot tub fencing shall be a minimum of four (4) feet in height and be equipped with a self-locking gate that closes automatically.

Response: Walls, fences, or hedges are not included in this application. Future installation of walls, fences, and hedges can be addressed during the building permit review process. These standards do not apply.

B. Standards.

1. Every fence shall be maintained in a condition of reasonable repair and shall not be allowed to become and remain in a condition of disrepair including noticeable leaning, missing sections, broken supports, non-uniform height, and uncontrolled growth of vegetation;

2. Fences shall not exceed four (4) feet in height in any front yard;
3. The maximum fence height in a street side yard shall not exceed six (6) feet;
4. Fences within a front or street side yard shall also conform to the clear vision requirements at intersections, which further restrict the use or height of sight-obscuring fences;
5. In no instance shall a fence extend beyond the property line including into a public right-of-way. It is the responsibility of the property owner to determine the property line.
6. Fences shall not exceed seven (7) feet in height.

Response: Walls and/or fences are not included in this application. These standards do not apply.

Chapter 17.100 ACCESS CONTROL STANDARDS

17.100.020 Applicability.

This title shall apply to all public streets within Carlton and to all properties that abut these roadways.

17.100.030 Access spacing standards.

A hierarchy of spacing standards is established that is dependent on the functional classification of the street.

Function Street Classification	Posted Speed Range	Minimum Spacing Between Driveways and/or Streets
Highway 47		
Yamhill to Pine Street (Main Street STA)	20 mph	Streets: Existing city block spacing Driveways: 175 feet or mid-block if block is less than 350 feet
North city limits to Main Street	20–30 mph	450–600 feet
South city limits to Main Street	20–30 mph	450–600 feet
Collector	20–25 mph	50 feet for single family detached units, 25 feet for attached units.
Local	20–25 mph	50 feet for single family detached units, 25 feet for attached units.

Response: As shown in the Preliminary Plans (Exhibit A), the planned public street extensions (E Wilson Street, E Taylor Street, S 2nd Street, S 3rd Street) meet the required access standards of this section. Driveways for future single-family dwellings are planned to take access from the public streets; spacing standards for these driveways will be addressed during the building permit review process. To the extent applicable, these standards are met.

17.100.040 General standards.

- A. Lots that front on more than one street shall be required to locate motor vehicle accesses on the street with the lower functional classification.

Response: The planned subdivision contains multiple lots with frontage on more than one street. For these lots, vehicle access can be provided on the street with a lower functional classification. This access standard can be addressed during the building permit review process. This standard is met as applicable.

- B. When a residential subdivision is proposed that would abut an arterial, it shall be designed to provide through lots along the arterial with access from a marginal access or local street. Access rights of these lots, to the arterial shall be dedicated to the City of Carlton and recorded with the deed. A berm or buffer yard may be required at the rear of through lots to buffer residences from traffic on the arterial.

Response: The subject site does not abut an Arterial street. This standard does not apply.

- C. Subdivisions with frontage on the state highway system shall be designed to share access points to and from the highway. If access off of a secondary street is possible, then access should not be allowed onto the state highway.

Response: The planned subdivision does not have frontage on a state highway. This standard is not applicable.

- D. Wherever a proposed development abuts unplatted developable land within the urban growth boundary, street stubs shall be provided to provide access to abutting properties or to logically extend the street system into the surrounding area.

Response: The southern boundary of the subject site is located adjacent to developable land within the urban growth boundary. The street stub of S 3rd Street provides access to abutting properties to facilitate future street extensions. This standard is met.

- E. Local streets shall connect with surrounding streets to permit the convenient movement of traffic between residential neighborhoods or facilitate emergency access and evacuation. Connections shall be designed to avoid or minimize through traffic on local streets. Appropriate design and traffic control such as four-way stops and traffic calming measures are the preferred means of discouraging through traffic.

Response: This project includes new access to an existing street (S 2nd Street). E Wilson Street and E Taylor Street will connect to the extension of S 3rd Street that is planned as part of the JR Meadows No. 3 Subdivision. The connections will use appropriate design, traffic control, and calming measures to discourage through traffic. E Wilson Street will be improved up to the west boundary of the subject site to facilitate a future connection with S Arthur Street and W Wilson Street across the abandoned SPRR right-of-way. E Taylor Street will also be extended to the western boundary of the subject site to facilitate a potential future connection with OR-47.

Adjacent street connections will therefore include S 2nd Street to the north, E Wilson Street to the east, E Taylor Street to the east, and S 3rd Street to the south. Additionally, improvements to E Wilson Street and E Taylor Street can facilitate future connection to existing streets on the west side of the abandoned SPRR right-of-way. This standard is met as applicable.

- F. In all cases reasonable access or the minimum number of access connections, direct or indirect, necessary to provide safe access to and from a street shall be granted.

Response: The Preliminary Plans (Exhibit A) illustrate that each of the planned lots is provided adequate and safe access to and from on- and off-site streets. Therefore, this standard is met.

- G. New connections shall not be permitted within the functional area of an intersection as defined by the connection spacing standards of this title, unless no other reasonable access to the property is available.

Response: As shown on the Preliminary Plans (Exhibit A), the planned connections to S 2nd Street and the planned S 3rd Street extension meet the access spacing provision of Section 17.100.030. Therefore, this standard is met.

17.100.050 Joint and cross access.

- A. Adjacent commercial properties classified as major traffic generators (i.e. shopping plazas, office parks), shall provide a cross access drive and pedestrian access to allow circulation between sites.

Response: This application involves a residential subdivision and does not include commercial property. Therefore, this standard is not applicable.

17.100.060 Nonconforming access features.

Legal access connections in place as of the effective date of the ordinance codified in this title that do not conform with the standards herein are considered nonconforming features and shall be brought into compliance with applicable standards under the following conditions:

Response: The subject site has an existing single-family dwelling and driveway that are planned to be removed prior to site improvements. As shown on the Preliminary Plans (Exhibit A) and discussed herein, the access to S 2nd Street and the planned S 3rd Street extension meets the applicable standards. This standard is met as applicable.

17.100.070 Review procedures.

- A. Access Permit Required. Access to a public street (e.g., a new curb cut or driveway approach) requires an access permit. An access permit may be in the form of a letter to the applicant, or it may be attached to a land use decision notice as a condition of approval. In either case, approval of an access permit shall follow the procedures and requirements of the applicable road authority, as determined through the Type I review procedures found in Section 17.188.010.

Response: As shown on the Preliminary Plans (Exhibit A), access to the site is planned to be taken from S 2nd Street and the planned S 3rd Street extension. Permits for access will be obtained as required.

B. Traffic Study Requirements.

1. The City shall require a traffic impact analysis (TIA) prepared by a qualified professional to determine access, circulation, and other transportation requirements when:
 - a. The development generates twenty-five (25) or more peak-hour trips or two hundred fifty (250) or more daily trips.
 - b. An access spacing exception is required for the site access driveway(s) and the development generates ten (10) or more peak-hour trips or one hundred (100) or more daily trips.
 - c. The development is expected to impact intersections that are currently operating at the upper limits of the acceptable range of level of service during the peak operating hour.
 - d. The development is expected to significantly impact adjacent roadways and intersections that have previously been identified as high crash locations or areas that contain a high concentration of pedestrians or bicyclists such as a schools.

Response: As demonstrated in the Transportation Impact Analysis (Exhibit D), the planned subdivision will generate an additional 24 morning peak hour trips, 31 evening peak hour trips, and 326 average weekday trips. Therefore, a traffic impact analysis is required and provided with the application materials.

(...)

- C. **Conditions of Approval.** The City may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system.

Response: As demonstrated by the Preliminary Plans (Exhibit A), the subject site has an existing dwelling and driveway that are planned to be removed prior to site improvements. The project provides access to the subdivision from S 2nd Street and the planned S 3rd Street extension. The appropriate improvements are planned for all street frontages within and along the planned subdivision. It is understood that the City may require additional conditions of approval. This standard is met.

D. Access permit reviews shall address the following criteria:

1. Access shall be properly placed in relation to sight distance, driveway spacing, and other related considerations, including opportunities for joint and cross access;

Response: As shown on the Preliminary Plans (Exhibit A), the access points within the planned subdivision meet sight distance and spacing requirements. Joint or cross access is not necessary nor warranted for this site. This standard is met as applicable.

2. The road system shall provide adequate access to buildings for residents, visitors, deliveries, emergency vehicles, and service vehicles;

Response: The planned internal streets shown on the Preliminary Plans (Exhibit A) provide access for each of the planned dwellings. This standard is met.

3. The access shall be consistent with the access management standards in the most current adopted City of Carlton Transportation System Plan.

Response: As shown on the Preliminary Plans (Exhibit A), the planned extensions of E Wilson Street, S 2nd Street, S 3rd Street, and E Taylor Street are consistent with the Carlton TSP. Therefore, this standard is met.

- E. Any application that involves access to the State Highway System shall be reviewed by the Oregon Department of Transportation for conformance with state access management standards.

Response: An access point onto the state highway system is not planned as part of this application. Therefore, this standard is not applicable.

Chapter 17.106 RESIDENTIAL DESIGN STANDARDS

17.106.020 Applicability.

This section applies to the following building types:

- A. Single-family non-attached (non-common wall) dwellings are not subject to site development review, but new dwellings are required to comply with subsection 17.106.030(A); no other provisions of Chapter 17.106 apply to non-attached single-family dwellings;
- B. Duplexes, triplexes, and attached single-family dwellings (e.g., townhomes) are subject to all provisions of Chapter 17.106;
- C. Multi-family housing, including residential care facilities, are subject to all provisions of Chapter 17.106;
- D. Mixed-use buildings (residential and other use combined) are subject to all provisions of Chapter 17.106.

Response: This application includes a residential subdivision that includes lots for the future construction of attached single-family dwellings (townhomes). It is understood that a site design review application addressing design standards for future dwellings is required to be submitted and reviewed separately in the future. While the standards of this section are not directly applicable to this application, demonstration that certain design standards can be met by the planned subdivision is provided below.

17.106.030 Design standards.

(...)

- B. **Building Orientation Standard.** All residential buildings, except single-family non-attached (non-common wall) dwellings and accessory structures, shall be oriented to a street. This standard is met when at least one building on a site is placed within twenty (20) feet of a street right-of-way ("street"), and such building contains a dwelling entrance facing the street. Multi-family building entrances may include entrances to individual units, lobby entrances, or

breezeway/courtyard entrances (i.e., to a cluster of units). Alternatively, a building may have its entrance oriented to a side yard when a direct pedestrian walkway is provided between the building entrance and the street, and the elevation facing the street contains windows, a porch and/or other detailing to avoid a blank wall appearance and to provide visibility of the street from the dwelling or garage, as applicable.

Response: As demonstrated by the Preliminary Plans (Exhibit A), the planned subdivision includes lots intended for attached housing with public street frontages. Future attached housing units are planned to be oriented towards the public streets.

- C. Except as allowed for single-family attached dwellings under subsection 17.106(E), for the purposes of complying with subsection 17.106.030(B), no off-street parking, garage or carport entrance, drive, or other vehicle areas shall be placed between any building and the street to which it is oriented.

Response: As demonstrated by the Preliminary Plans (Exhibit A), the planned subdivision includes 14 lots intended for single family attached housing. As demonstrated by the Preliminary Single-Family Attached Home Driveway Schematic (Exhibit M), driveways are planned to be located between the single family attached housing units and the streets towards which they are oriented in conformance with the standards of Subsections 17.106(E) and (F) below. See findings to Subsection E and F below for additional information.

(...)

- E. **Standard Vehicle Access.** Except as provided under subsection 17.106.030(F), dwellings subject to the provisions of Section 17.106.030 shall have garages or other covered parking accessed from a shared driveway or alley oriented to a side or rear yard, as applicable. Such access shall be created at the time of subdivision or site development review approval, as applicable. An exception to this standard is permitted when existing development patterns or topography makes compliance impracticable. As provided by Chapter 17.100, the city may require the construction of pathways between townhome lots (e.g., between building breaks) to implement code standards for access and circulation.

Response: As discussed in Subsection F below, the alternative standards of Subsection 17.106.030(F) below apply if complying with this standard is not “practical.” According to the Cambridge dictionary, practical means: “suitable for the situation in which something is used.”

As demonstrated by the Preliminary Plans, the subject site is uniquely shaped in that it is not rectangular and includes a curved westerly lot line along the abandoned railroad right-of-way. Including an alley for rear access to single family attached housing along this site boundary would not be suitable for the site because the alley would abut an abandoned right-of-way intended for a future trail and would be separated from the rights-of-way of S Arthur Street and OR-47 only by the abandoned railroad right-of-way. Shared driveways for attached housing along E Wilson Street and S 2nd Street are more suitable for the site due to the impracticality of rear alleys for these lots and are consistent with the design of attached housing in adjacent neighborhoods (including the JR Meadows No. 3 subdivision to the east).

Additional findings addressing this standard can be found in Subsection (F) below.

- F. **Alternative (Front) Vehicle Access.** Where compliance with subsection 17.106.030(E) is not practical due to topographic or other site constraints, or an applicant requests an adjustment to said subsection, the city through site development review may approve a garage or other parking area adjacent to a front yard, subject to the following standards, which are intended to minimize interruption of adjacent sidewalks by driveway entrances, slow traffic, improve appearance of the streets, and to minimize paved surfaces and reduce storm water runoff.

Response: As discussed in response to Subsection (E) above, the planned single family attached housing lots are not planned to take access from a side or rear yard because locating an alley/driveway behind these lots is not practical or suitable for the subject site due to unique site constraints. Therefore, the single family attached lots included with this project are planned to have shared driveway access between building frontages and the adjacent public streets. Standards for the planned shared driveways are addressed below where applicable to this project and will be reviewed with a future Site Design Review application for construction of the new attached dwellings.

1. **When a garage opening faces a street, it shall be setback from the street property line by not less than twenty (20) feet or recessed behind the front elevation (i.e., living area or covered front porch) by a minimum of four (4) feet.**

Response: As demonstrated by the Preliminary Plans (Exhibit A), lots planned for single family attached housing are sufficiently sized to include garages at least 20 feet from front property lines. This standard will be further addressed by a future Site Design Review application for the planned single family attached housing.

2. **The maximum allowable driveway within a front or street side setback is twenty (20) feet.**

Response: As discussed above, driveways are planned within front setbacks for single family attached housing lots. As demonstrated by the Preliminary Single-Family Attached Home Driveway Schematic (Exhibit M), shared driveways for these lots are planned to be no greater than 20 feet wide. This standard will be further addressed by a future Site Design Review application for the planned single family attached housing.

3. **The total width of all garage openings on any street-facing building elevation shall not exceed fifty (50) percent of the total width of the building elevation on which the opening(s) are located, or 22 feet, whichever is less. For example, a twenty-four (24) foot wide unit may have one twelve (12) foot wide recessed garage facing the street.**

Response: This standard will be reviewed as part of a future Site Design Review application for the planned single family attached housing.

4. **Two adjacent garages shall share one driveway when individual driveways would otherwise be separated by less than twenty (20) feet (i.e., the width of one on-street parking space). When a driveway serves more than one lot, the developer shall record an access and maintenance easement/agreement to benefit each lot, before building permit issuance.**

Response: As demonstrated by the Preliminary Plans and the Preliminary Single-Family Attached Home Driveway Schematic (Exhibits A and M, respectively), the planned subdivision includes single family attached lots that are planned to include shared driveways. This standard will be further addressed by a future Site Design Review application for the planned single family attached housing.

Division V. GENERAL STANDARDS

Chapter 17.132 GENERAL EXCEPTIONS

17.132.010 General exception to building height.

Projections such as chimneys, spires, domes, elevator shaft housing, flagpoles, and other similar objects not used for human occupancy are not subject to the building height limitations of the underlying zone.

Response: This application involves a residential subdivision for future single-family attached and detached dwellings. Compliance with building height limitations for the single-family detached dwellings is to be addressed at the time of building permit review. Compliance with building height standards for the single-family attached dwellings is to be addressed at the time of a future site design review application. Exceptions to building height are not applicable at this time. This standard is met as applicable.

17.132.020 Height exceptions for public buildings.

Public or quasi-public buildings, hospitals, places of worship, and educational institutions may be constructed to a height not to exceed forty-five (45) feet provided the required yards are increased one foot for each foot of additional building height above the height regulation for the zone.

Response: This is an application for a residential subdivision and not the construction of public buildings. Therefore, this standard is not applicable.

17.132.030 Public dedications.

Setback restrictions of this title shall not apply to existing structures whose setback is reduced by a public dedication.

Response: This application does not include setbacks that are reduced by a public dedication. Therefore, this standard is not applicable.

17.132.040 Miscellaneous setback exceptions.

Setback limitations stipulated elsewhere in this title may be modified as follows:

- A. Bus shelters that are intended for use by the general public and are under public ownership and/or control shall be exempt from setback requirements.
- B. Side and rear yards of underground structures may be reduced to three (3) feet except all openings into the structure, including doors, windows, skylights, plumbing, intake and exhaust vents, shall meet the minimum setbacks of the district.

Response: This application does not include exceptions to the minimum setback standards. Therefore, the standards included in this section do not apply.

Chapter 17.140 USES PERMITTED IN ALL ZONES

17.140.010 Permitted uses.

The following uses and activities are permitted in all zones:

- A. Placement and maintenance of underground or above ground wires, cables, pipes, guys, support structures, pump stations, drains, and detention basins within rights-of-ways by public agencies and utility companies for telephone, TV cable, or electrical power transmission, or transmission of natural gas, petroleum products, geothermal water, water, wastewaters, sewage and rainwater.

Response: As permitted by this section, this application involves a residential subdivision that includes underground utilities.

- B. Railroad tracks and related structures and facilities located within rights-of-ways controlled by a railroad operator.

Response: The subject site does not contain railroad tracks or related structures and facilities. Therefore, this standard is not applicable.

Division VI. APPLICATION REQUIREMENTS AND REVIEW CRITERIA

Chapter 17.144 SUMMARY OF APPLICATION TYPES

17.144.010 Generally.

All development permits and land use actions are processed under the administrative procedures provided for in this chapter. There are four types of actions, each with its own procedures.

17.144.030 Type II action.

- A. Type II action is a quasi-judicial review in which the Planning Commission applies a mix of objective and subjective standards that allow considerable discretion. Public notice and a public hearing is provided, see Chapter 17.192. Appeal of a Type II decision is to the City Council. The following actions are processed under a Type II procedure:

- A. Major variance;
 B. Conditional use permit, major;
 C. Site design review, major;
 D. Code interpretation;
 E. Nonconforming uses, Type II modification;
 F. Partitions;
 G. Subdivision;
 H. Planned unit development.

Response: This application involves a residential subdivision. Therefore, this application can be reviewed through a Type II action.

Chapter 17.176 SUBDIVISIONS AND PLANNED UNIT DEVELOPMENTS

17.176.010 General provisions.

- A. All subdivisions and planned unit developments (PUDs) shall conform to all applicable zoning district Standards, development standards and other provisions of this title.

Response: As demonstrated through the responses within this narrative, Preliminary Plans, and supplemental materials, this application complies with the applicable MX zoning district standards, development standards, and other provisions of this title.

- B. A master plan for development is required for any application that leaves a portion of the subject property capable of redevelopment.

Response: As shown on the Preliminary Plans (Exhibit A), the subdivision is a complete parcellation of the property. Therefore, this standard is not applicable.

17.176.020 Application and fee.

- A. The following submittal requirements shall apply to all preliminary plan applications for subdivisions and PUDs:

1. All applications shall be submitted on forms provided by the city to the city recorder along with the appropriate fee. It shall be the applicant's responsibility to submit a complete application that addresses the review criteria of this chapter;

Response: The required City application forms and appropriate fee are included with the application materials. Therefore, this submittal requirement is met.

2. The applicant shall submit ten (10) clear and legible copies of the preliminary plan on sheets that are twenty-four (24) inches by thirty-six (36) inches in size. Preliminary plans shall be drawn to a scale of one-inch equals one hundred (100) feet or larger;

Response: The Preliminary Plans (Exhibit A) are included in the application materials, consistent with the provision above. Therefore, this submittal requirement is met.

3. General Information. The following general information shall be shown on the preliminary plan:

- a. Vicinity map extending one thousand two hundred (1,200) feet in each direction showing all streets, property lines, streams, and other pertinent data to locate the proposal;
- b. North arrow, scale of drawing and date of preparation;
- c. Tax map and tax lot number or tax account of the subject property;
- d. Dimensions and size in square feet or acres of the subject property;
- e. The names and addresses of the property owner, partitioner and engineer, surveyor, or other individual responsible for laying out the partition.

Response: The Preliminary Plans (Exhibit A) included in the application materials show the information required above. Therefore, this submittal requirement is met.

4. Existing Conditions. The preliminary plan shall show:

- a. Location of all existing easements within the property;
- b. Location of city utilities (water, sanitary sewer, storm drainage) within or adjacent to the property proposed for use to serve the development;
- c. The location and direction of watercourses or drainage swales. The location and disposition of any wells, wetlands identified on the State Wetland Inventory, septic tanks, and drain fields in the development;
- d. Existing uses of the property, including location of existing structures on the property. It should be noted whether the existing structures are to be removed or to remain on the property;
- e. Contour lines related to an established benchmark, having the following minimum intervals:
 - i. Areas with less than five percent slope: one-foot contours;
 - ii. Areas with slope between five percent and ten (10) percent: two-foot contours;
 - iii. Areas with slope greater than ten (10) percent: five-foot contours;

Response: The Preliminary Plans (Exhibit A) included in the application materials show the information required above, as applicable. Therefore, this submittal requirement is met.

5. **Proposed Plan.** The preliminary plan shall clearly show to scale the following:
 - a. Proposed name of the PUD or subdivision;
 - b. Locations, approximate dimensions and area in square feet of all proposed lots. Identification of each lot and block by number;
 - c. Proposed streets and their names, approximate grade, radius of curves, and right-of-way widths;
 - d. Any other legal access to the subdivision or PUD, other than a public street;
 - e. Location, width and purpose of any proposed easements;
 - f. If the development is to be constructed in phases, indicate the area of each phase.
6. **Supplemental Information.** Proposed deed restrictions, if any, in outline form.
7. **A traffic impact analysis if requested by the city manager.**

Response: The Preliminary Plans (Exhibit A) included in the application materials show the information required above, as applicable. Additionally, a Transportation Impact Analysis is included in Exhibit D. This application includes a tract (Tract A) that is created by the demonstrated alignment of E Wilson Street and is intended to be left as open space. This

tract will either be owned and maintained by the declarant or the City of Carlton (if the City will accept it). Therefore, this submittal requirement is met.

- B.** The following supplemental information shall be required for all PUD preliminary plan applications:
1. Calculations justifying the proposed density of development as required by Section 17.112.050(C);
 2. Proposed uses of the property, including sites, if any, for attached dwelling units, recreational facilities, parks and playgrounds or other public or semi-public uses, with the purpose, condition and limitations of such reservations clearly indicated;
 3. The approximate location and dimensions of all commercial or multi-family structures proposed to be located on the site;
 4. Statement of improvements to be made or installed including streets, sidewalks, bikeways, trails, lighting, tree planting, landscaping, and time such improvements are to be made or completed;
 5. Written statement-outlining proposals for ownership and maintenance of all open space areas, private streets and any commonly owned facilities.

Response: This application involves a subdivision and does not include a planned unit development (PUD); therefore, this submittal requirement does not apply.

IV. Conclusion

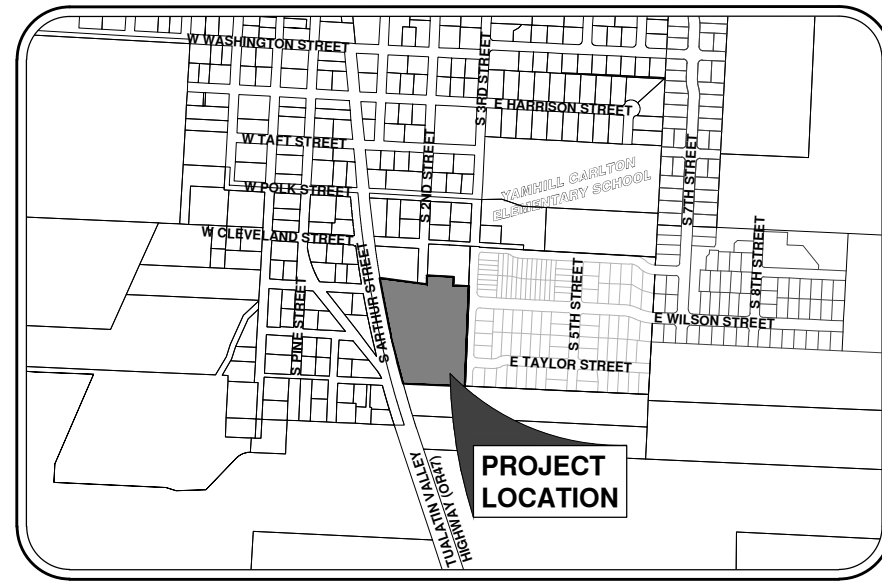
The required findings have been made, and this written narrative and accompanying documentation demonstrate that the application is consistent with the applicable provisions of the City of Carlton Community Development Code. The evidence in the record is substantial, and the City can rely upon this information in its approval of the application.



Exhibit A: Preliminary Plans (Updated October 2023)

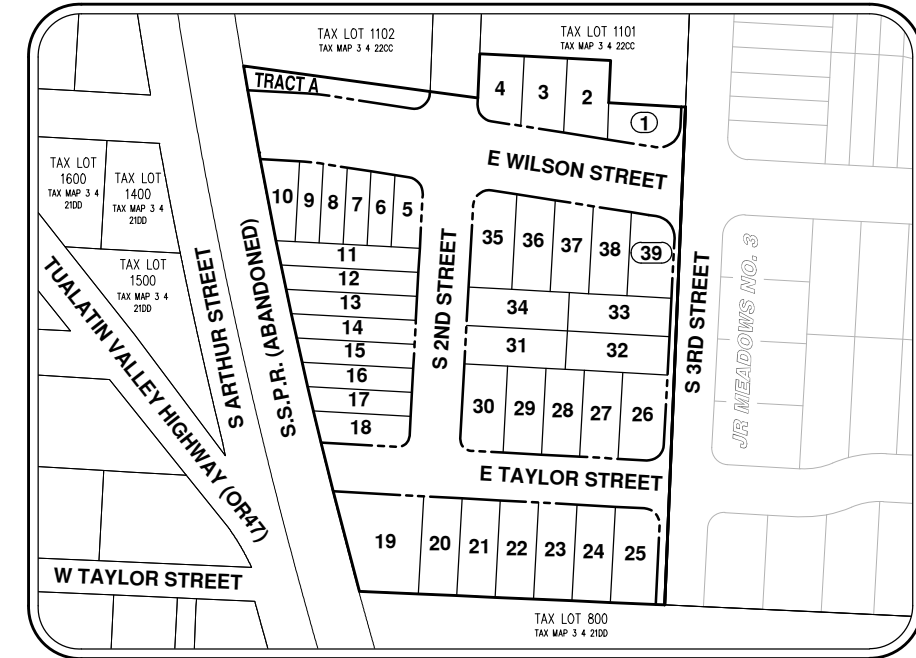
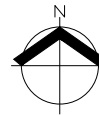
S 2ND STREET SUBDIVISION

PRELIMINARY PLANS



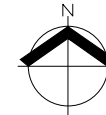
VICINITY MAP

SCALE: 1"=500'



SITE MAP

SCALE: 1"=100'



LEGEND

	EXISTING	PROPOSED		EXISTING	PROPOSED
DECIDUOUS TREE			STORM DRAIN CLEAN OUT		
CONIFEROUS TREE			STORM DRAIN CATCH BASIN		
FIRE HYDRANT			STORM DRAIN AREA DRAIN		
WATER BLOWOFF			STORM DRAIN MANHOLE		
WATER METER			GAS METER		
WATER VALVE			GAS VALVE		
DOUBLE CHECK VALVE			GUY WIRE ANCHOR		
AIR RELEASE VALVE			UTILITY POLE		
SANITARY SEWER CLEAN OUT			POWER VAULT		
SANITARY SEWER MANHOLE			POWER JUNCTION BOX		
SIGN			POWER PEDESTAL		
STREET LIGHT			COMMUNICATIONS VAULT		
MAILBOX			COMMUNICATIONS JUNCTION BOX		
			COMMUNICATIONS RISER		
	EXISTING	PROPOSED			
RIGHT-OF-WAY LINE					
BOUNDARY LINE					
PROPERTY LINE					
CENTERLINE					
DITCH					
CURB					
EDGE OF PAVEMENT					
EASEMENT					
FENCE LINE					
GRAVEL EDGE					
POWER LINE					
OVERHEAD WIRE					
COMMUNICATIONS LINE					
FIBER OPTIC LINE					
GAS LINE					
STORM DRAIN LINE					
SANITARY SEWER LINE					
WATER LINE					

APPLICANT:

MAX & JANNETTE NARDONI
 13800 NE BROOKSIDE LANE
 CARLTON, OR 97111

**LAND USE PLANNING /
 ENGINEERING / SURVEYING
 FIRM:**

AKS ENGINEERING & FORESTRY, LLC
 CONTACT: CODY STREET / SEAN VERMILYA
 12965 SW HERMAN ROAD, SUITE 100
 TUALATIN, OR 97062
 PH: 503-563-6151

PROJECT LOCATION:

EAST OF THE INTERSECTION OF S ARTHUR STREET
 AND OREGON STATE HIGHWAY 47

PROPERTY DESCRIPTION:

TAX LOT 1100, YAMHILL COUNTY ASSESSOR'S MAP
 3S 4W 22, TOWNSHIP 3 SOUTH, RANGE 4 WEST,
 LOCATED IN SECTION 22, WILLAMETTE MERIDIAN,
 CITY OF CARLTON, YAMHILL COUNTY, OREGON

EXISTING LAND USE:

EXISTING SINGLE-FAMILY HOME WITH ACCESSORY
 STRUCTURES

PROJECT PURPOSE:

RESIDENTIAL SUBDIVISION FOR 14 FUTURE ATTACHED
 SINGLE-FAMILY HOMES AND 25 FUTURE DETACHED
 SINGLE-FAMILY HOMES.

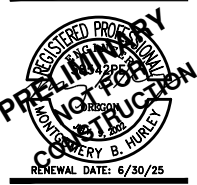
VERTICAL DATUM:

VERTICAL DATUM: ELEVATIONS ARE BASED ON NGS
 MONUMENT U98 (PID RD0845) BEING A BRASS DISK SET IN
 CONCRETE LOCATED 66 FEET EAST FROM THE CENTER OF
 PINE STREET AND 32 FEET NORTH FROM THE CENTER OF
 MAIN STREET.
 ELEVATION = 202.08 FEET (NAVD 88)

SHEET INDEX

- P-01 COVER SHEET WITH LEGEND, VICINITY, AND SITE MAPS
- P-02 EXISTING CONDITIONS PLAN
- P-03 PRELIMINARY SUBDIVISION PLAT WITH FUTURE BUILDING SETBACKS
- P-04 CONCEPTUAL NEIGHBORHOOD CIRCULATION PLAN
- P-05 PRELIMINARY DEMOLITION PLAN
- P-06 PRELIMINARY GRADING AND EROSION CONTROL PLAN
- P-07 PRELIMINARY STREET PLAN
- P-08 PRELIMINARY STREET CROSS SECTIONS
- P-09 PRELIMINARY STREET PROFILES
- P-10 PRELIMINARY STREET PROFILES
- P-11 PRELIMINARY COMPOSITE UTILITY PLAN
- P-12 PRELIMINARY AERIAL PHOTOGRAPH PLAN

COVER SHEET WITH LEGEND, VICINITY, AND SITE MAPS
S 2ND STREET SUBDIVISION
CARLTON, OREGON

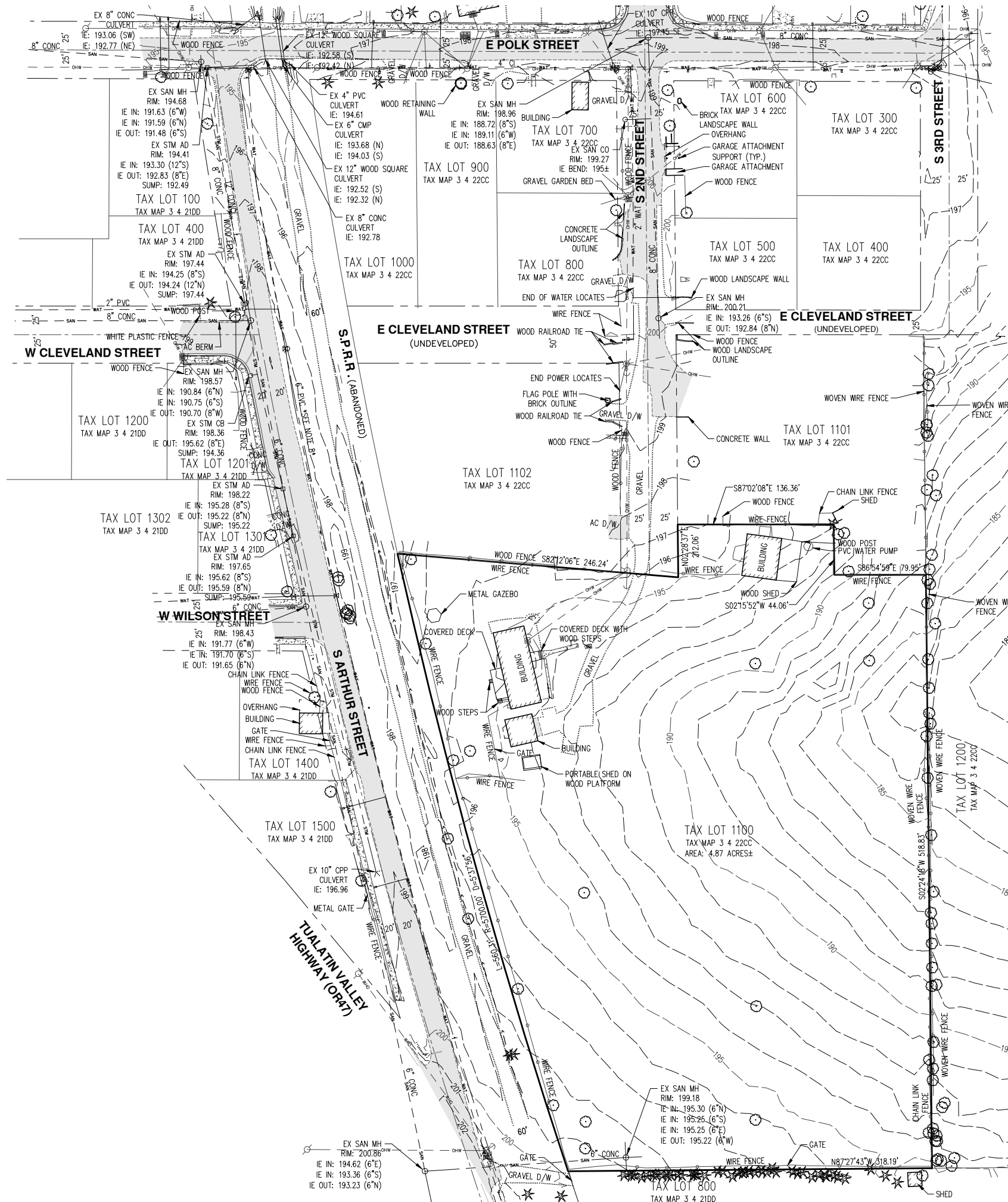


RENEWAL DATE:	6/30/25
JOB NUMBER:	4206
DATE:	10/06/2023
DESIGNED BY:	CMS
DRAWN BY:	NRA/JNW
CHECKED BY:	MBH



AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING • SURVEYING • NATURAL RESOURCES
FORESTRY • PLANNING • LANDSCAPE ARCHITECTURE



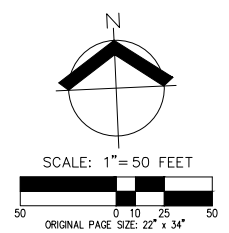
- NOTES:**
- UTILITIES SHOWN ARE BASED ON UNDERGROUND UTILITY LOCATE MARKINGS AS PROVIDED BY OTHERS, PROVIDED PER UTILITY LOCATE TICKET NUMBER 22128346, 22128347, & 22128348. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND LOCATES REPRESENT THE ONLY UTILITIES IN THE AREA. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
 - FIELD WORK WAS CONDUCTED MAY 9-12, 2022.
 - VERTICAL DATUM: ELEVATIONS ARE BASED ON NGS MONUMENT U 98 (PID R00845) BEING A BRASS DISK SET IN CONCRETE LOCATED 66 FEET EAST FROM THE CENTER OF PINE STREET AND 32 FEET NORTH FROM THE CENTER OF MAIN STREET ELEVATION = 202.08 FEET (NAVD 88).
 - THIS IS NOT A PROPERTY BOUNDARY SURVEY TO BE RECORDED WITH THE COUNTY SURVEYOR. BOUNDARIES MAY BE PRELIMINARY AND SHOULD BE CONFIRMED WITH THE STAMPING SURVEYOR PRIOR TO RELYING ON FOR DETAILED DESIGN OR CONSTRUCTION.
 - BUILDING FOOTPRINTS ARE MEASURED TO SIDING UNLESS NOTED OTHERWISE. CONTACT SURVEYOR WITH QUESTIONS REGARDING BUILDING TIES.
 - CONTOUR INTERVAL IS 1 FOOT.
 - TREES WITH DIAMETER OF 6" AND GREATER ARE SHOWN. TREE DIAMETERS WERE MEASURED UTILIZING A DIAMETER TAPE AT BREAST HEIGHT. TREE INFORMATION IS SUBJECT TO CHANGE UPON ARBORIST INSPECTION.
 - DEPICTED WATER LINES ARE PER THE OVERALL WATER DISTRIBUTION PLAN OF THE CITY OF CARLTON, BY TETRA TECH, DATED 4/28/2021. LOCATIONS ARE APPROXIMATE.
 - DEPICTED SANITARY LINES ARE PER THE OVERALL SANITARY SEWER PLAN OF THE CITY OF CARLTON, BY TETRA TECH, DATED 4/28/2021. LOCATIONS ARE APPROXIMATE.

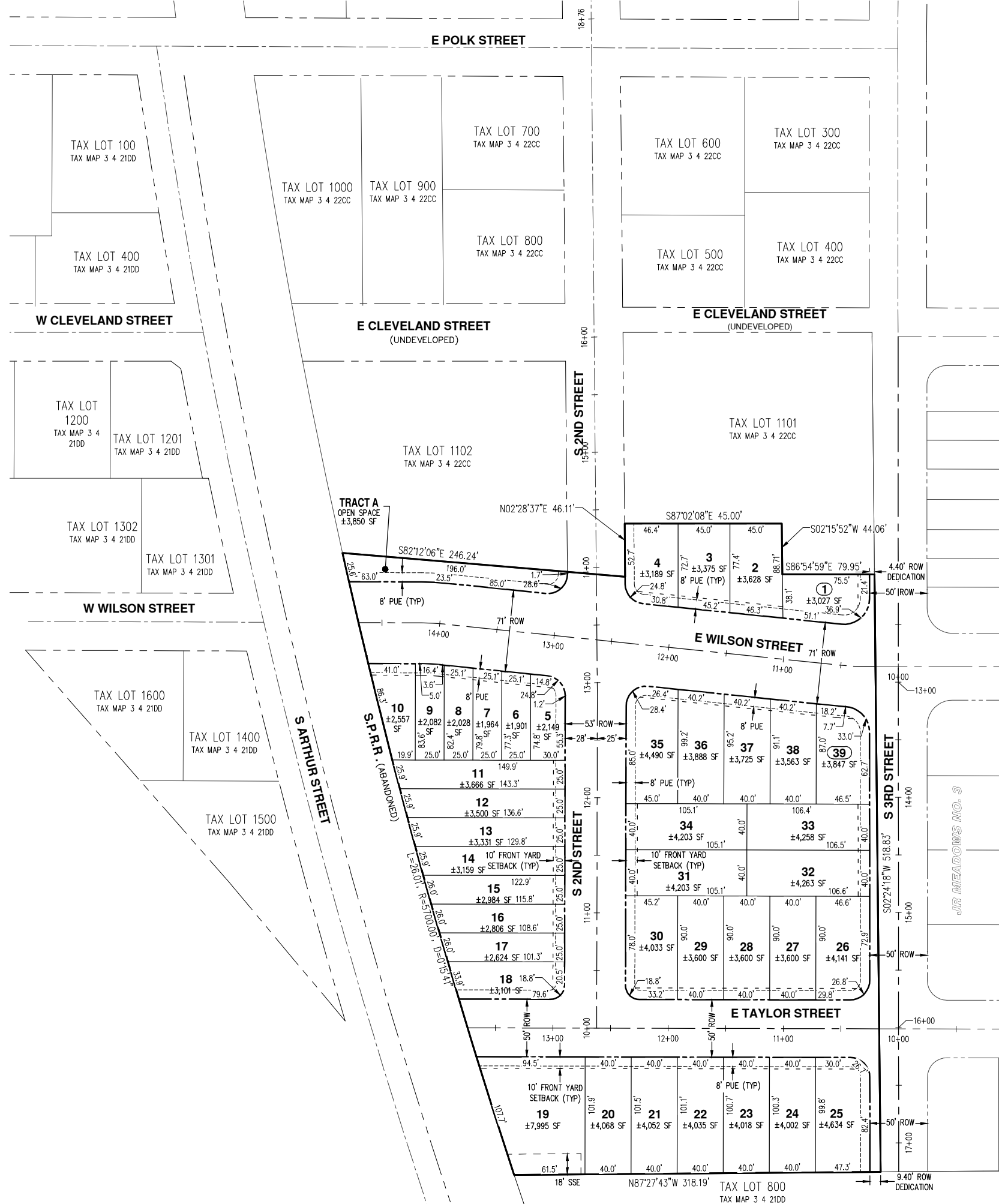
**EXISTING CONDITIONS PLAN
S 2ND STREET SUBDIVISION
CARLTON, OREGON**

REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY NOT FOR CONSTRUCTION
 JANUARY 17, 2018
 KALINA S. KALINA
 89558PLS
 RENEWS: 6/30/25

JOB NUMBER: 4206
 DATE: 10/06/2023
 DESIGNED BY:
 DRAWN BY: MTB
 CHECKED BY: MK

P-02





EASEMENT LEGEND

PUE PUBLIC UTILITY EASEMENT
 SSE PUBLIC SANITARY SEWER EASEMENT

NOTE:
 THE PURPOSE OF THIS PRELIMINARY SUBDIVISION PLAT IS TO SHOW LOT DIMENSIONS AND AREAS FOR PLANNING PURPOSES. THIS IS NOT AN OFFICIAL RECORDED FINAL PLAT AND IS NOT TO BE USED FOR SURVEY PURPOSES. ALL DIMENSIONS ARE SUBJECT TO CHANGE.

TRACT NOTES:
 1. TRACT A IS INTENDED TO BE RETAINED AND MAINTAINED BY THE DECLARANT. ALTERNATIVELY, IF THE CITY OF CARLTON WOULD LIKE TO OWN THE TRACT, THEN IT SHALL BE DEDICATED TO THE CITY.

NOTE:
 A PUBLIC SANITARY SEWER EASEMENT IS SHOWN ON LOT 19 FOR EXISTING SANITARY SEWER SERVICE TO THE BENEFIT OF TAX LOT 800.

MIXED DENSITY RESIDENTIAL (MX) DEVELOPMENT STANDARDS:

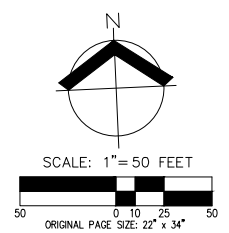
- LOT DIMENSIONS:
- NO MIN. LOT SIZE, EXCEPT AS LOT SIZE IS CONTROLLED BY OVERALL MX ZONE DENSITY AND LOT COVERAGE REQUIREMENTS.
 - MIN. LOT FRONTAGE - 25 FT
 - MAX. LOT FRONTAGE - 100 FT
 - MIN. ATTACHED LOT FRONTAGE - 6 FT/UNIT, MIN. 24 FT
 - MAX. ATTACHED LOT FRONTAGE - 30 FT/UNIT
- MIN. SETBACKS:
- FRONT - 10 FT
 - PORCHES MAY EXTEND WITHIN FRONT SETBACK TO WITHIN 5 FEET OF FRONT PROPERTY LINE.
 - NO OTHER MIN. SETBACKS.
- LOT COVERAGE:
- TOTAL LOT COVERAGE, INCLUDING BUILDINGS, ROOFED STRUCTURES, AND IMPERVIOUS PAVED SURFACES, SHALL NOT EXCEED 75%.
- DENSITY:
- AVERAGE DENSITY OF 9 DWELLING UNITS (DU) PER ACRE OR LESS.
 - AT LEAST 25% OF UNITS MUST BE EITHER IN MULTI-FAMILY OR ATTACHED SINGLE-FAMILY STRUCTURES.

NOTE:
 FUTURE SINGLE-FAMILY ATTACHED HOUSING LOTS WILL BE SUBJECT TO THE STANDARDS OF SECTION 17.106. SINGLE-FAMILY ATTACHED LOTS WILL INCLUDE SHARED DRIVEWAYS ADJACENT TO FRONT YARDS IN CONFORMANCE WITH SUBSECTION 17.106.030(F). SEE APPLICATION NARRATIVE FOR ADDITIONAL INFORMATION.

DENSITY CALCULATIONS:

GROSS SITE AREA = ±4.87 AC
 DENSITY = GROSS ACRES * DU/GROSS ACRE
 DU/GROSS ACRE = 9
 DENSITY = ±4.87 AC * 9 DU/GROSS ACRE
 = 43 UNITS
 MAXIMUM DENSITY PERMITTED = 43 UNITS
 ACHIEVED DENSITY = 39 UNITS / ±4.87 AC
 = 8.0 DU/GROSS ACRE
 % ATTACHED UNITS = 14 ATTACHED UNITS / 39 TOTAL UNITS
 = 35.9% ATTACHED SINGLE-FAMILY UNITS

NOTE:
 THESE PLANS ASSUME THE ADJACENT JR MEADOWS NO. 3 SUBDIVISION WILL BE CONSTRUCTED PRIOR TO OR CONCURRENTLY WITH THIS SUBDIVISION.

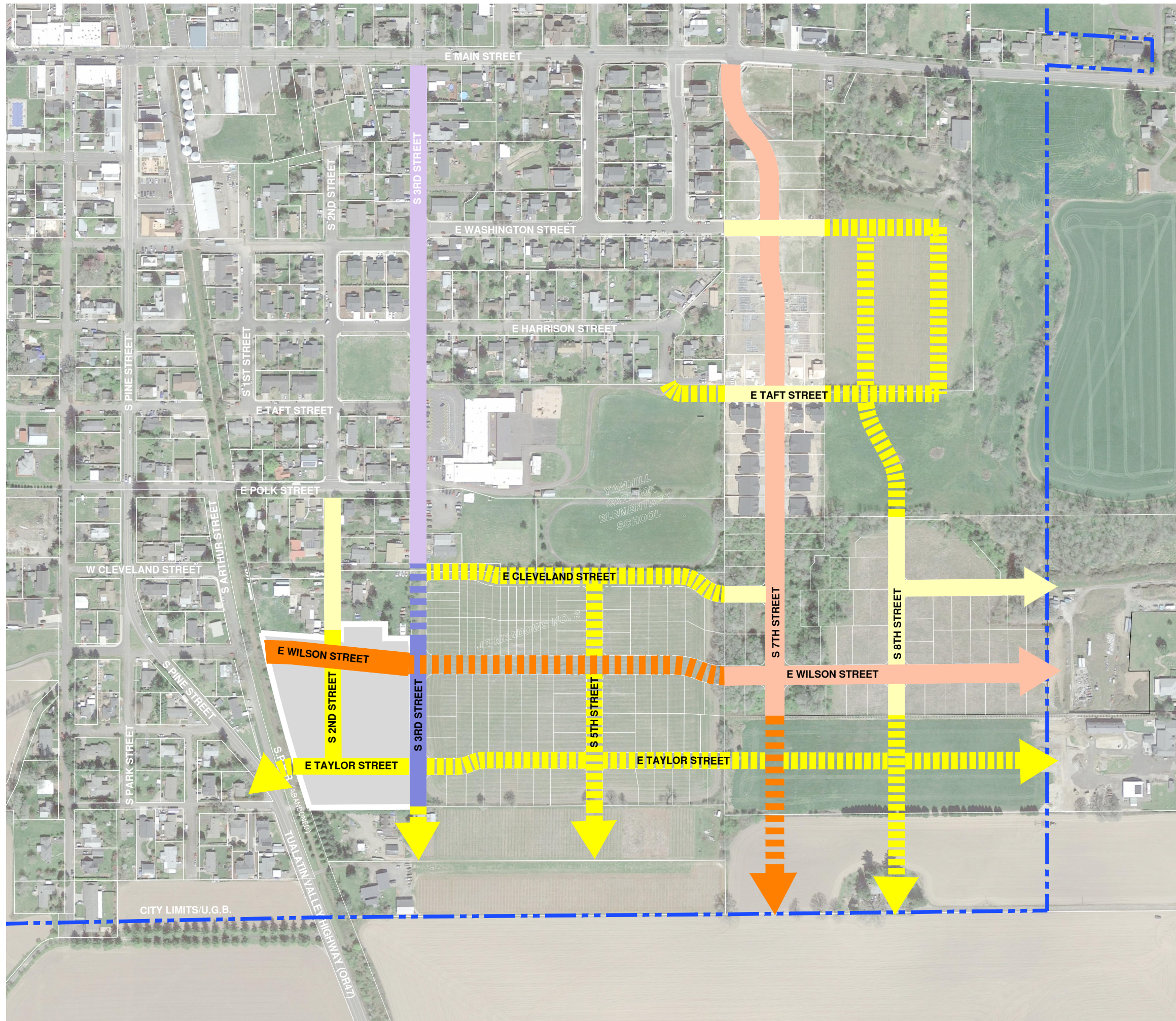


PRELIMINARY SUBDIVISION PLAT WITH FUTURE BUILDING SETBACKS
S 2ND STREET SUBDIVISION
 CARLTON, OREGON



RENEWAL DATE: 6/30/25

JOB NUMBER:	4206
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CHECKED BY:	MBH

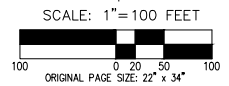
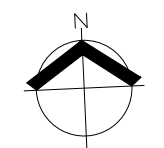


LEGEND:

CITY LIMITS/U.G.B.	
PROJECT SITE BOUNDARY	
PLANNED LOCAL STREET	
PLANNED COLLECTOR	
PLANNED SCHOOL-ZONE COLLECTOR	
CONCEPTUAL FUTURE LOCAL STREET (ON TSP)	
CONCEPTUAL FUTURE COLLECTOR (ON TSP)	
CONCEPTUAL FUTURE SCHOOL ZONE COLLECTOR (ON TSP)	
EXISTING LOCAL STREET	
EXISTING COLLECTOR	
EXISTING SCHOOL-ZONE COLLECTOR	

NOTES:

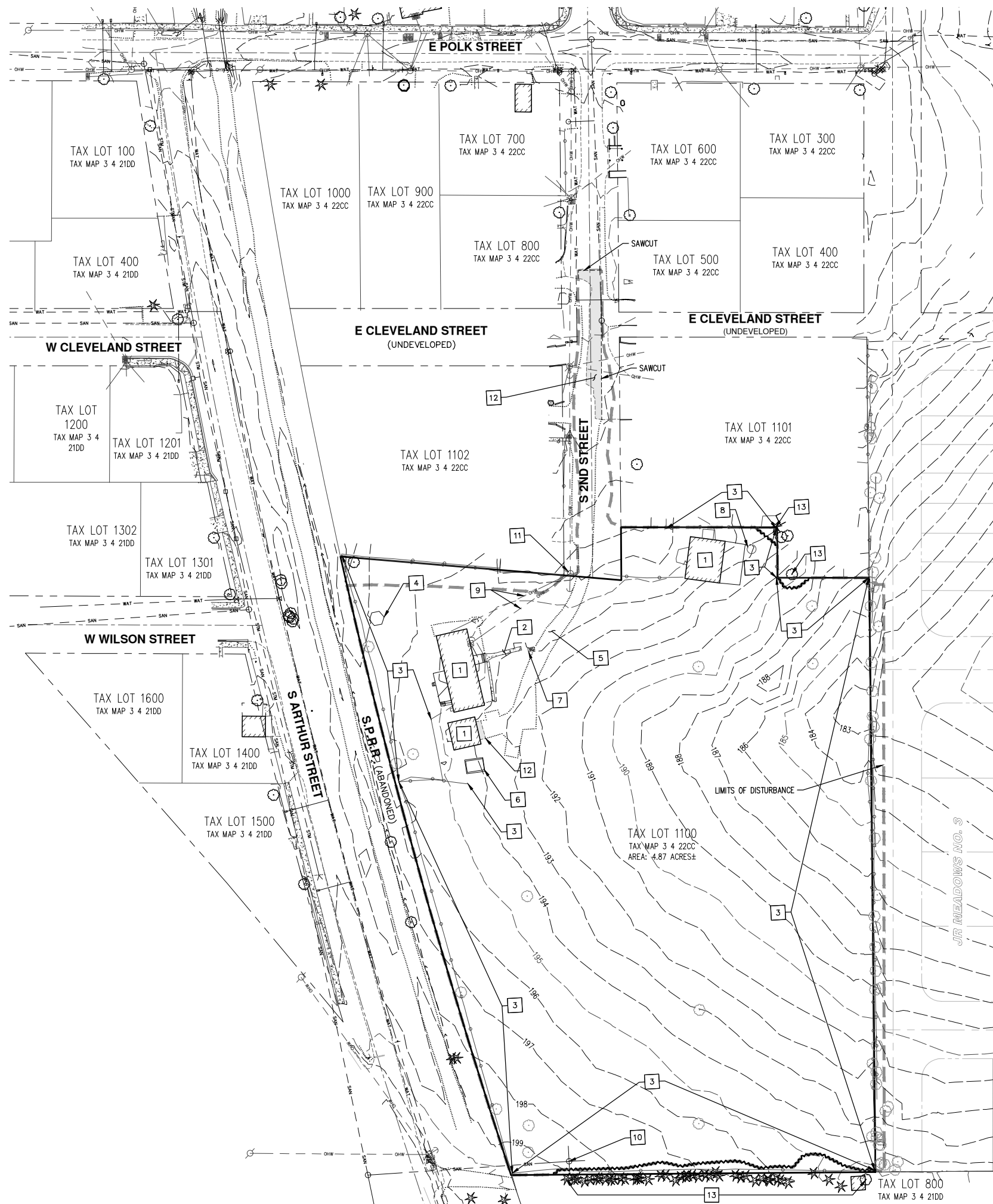
1. THIS PLAN IS INCLUDED TO MEET THE SUBMITTAL REQUIREMENTS FOR THE CITY OF CARLTON.
2. CONCEPTUAL FUTURE STREET LOCATIONS ARE SHOWN FOR ILLUSTRATIVE PURPOSES FOR THE LAND USE APPLICATION ONLY AND ARE NOT PROPOSED WITH THIS SUBDIVISION AND ARE NOT BINDING ON ANY OFF SITE PROPERTIES.
3. THIS DRAWING DOES NOT REPRESENT A FIELD VERIFIED TOPOGRAPHIC/PROPERTY BOUNDARY SURVEY.
4. DATA SOURCES FOR THIS CONCEPTUAL DRAWING INCLUDE INFORMATION EXTRAPOLATED FROM CITY OF CARLTON FUTURE STREET PLAN.
5. AREAS, DIMENSIONS, EASEMENT LOCATIONS, AERIAL PHOTO FEATURES, ETC. ARE CONSIDERED APPROXIMATE.



**CONCEPTUAL NEIGHBORHOOD CIRCULATION PLAN
S 2ND STREET SUBDIVISION
CARLTON, OREGON**



JOB NUMBER:	4206
DATE:	10/06/2023
DESIGNED BY:	CMS
DRAWN BY:	NRA/JNW
CHECKED BY:	MBH



LEGEND

EXISTING GROUND CONTOUR (1 FT)	---	194
EXISTING GROUND CONTOUR (5 FT)	- - -	195
LIMITS OF DISTURBANCE	---	
EXISTING TREE TO REMAIN	⊛	
EXISTING TREE TO BE REMOVED	⊙	
ASPHALT PAVEMENT TO BE REMOVED	▭	
TREE PROTECTION FENCE	~	

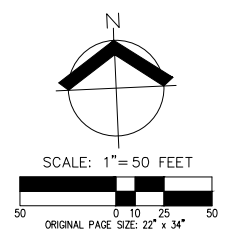
DEMOLITION KEYED NOTES

1. REMOVE EXISTING BUILDING.
2. REMOVE EXISTING CONCRETE.
3. REMOVE OR RELOCATE EXISTING FENCE.
4. REMOVE EXISTING GAZEBO.
5. REMOVE EXISTING GRAVEL DRIVEWAY AND PARKING AREA.
6. REMOVE EXISTING SHED.
7. REMOVE EXISTING MAILBOX.
8. REMOVE EXISTING WATER PUMP. SEE NOTE 1 BELOW.
9. REMOVE EXISTING OVERHEAD WIRE.
10. PRESERVE EXISTING SANITARY MANHOLE. CAP OR REMOVE ANY UNUSED STUBS.
11. REMOVE OR RELOCATE EXISTING UTILITY POLE AND GUY WIRE, COORDINATE WITH PGE.
12. SAWCUT AND REMOVE EXISTING PAVEMENT.
13. EXISTING OFFSITE/LINE TREE TO BE PRESERVED. SEE NOTE 2 BELOW.

NOTE:

1. ANY EXISTING SANITARY SEWER SEPTIC SYSTEMS AND DRAIN FIELD AN/OR WATER WELLS FOUND ON SITE SHALL BE DECOMMISSIONED PER APPLICABLE REQUIREMENTS.
2. ARBORIST OBSERVATION RECOMMENDED DURING ANY DEMOLITION ACTIVITIES DONE BEHIND THE TREE PROTECTION FENCE.

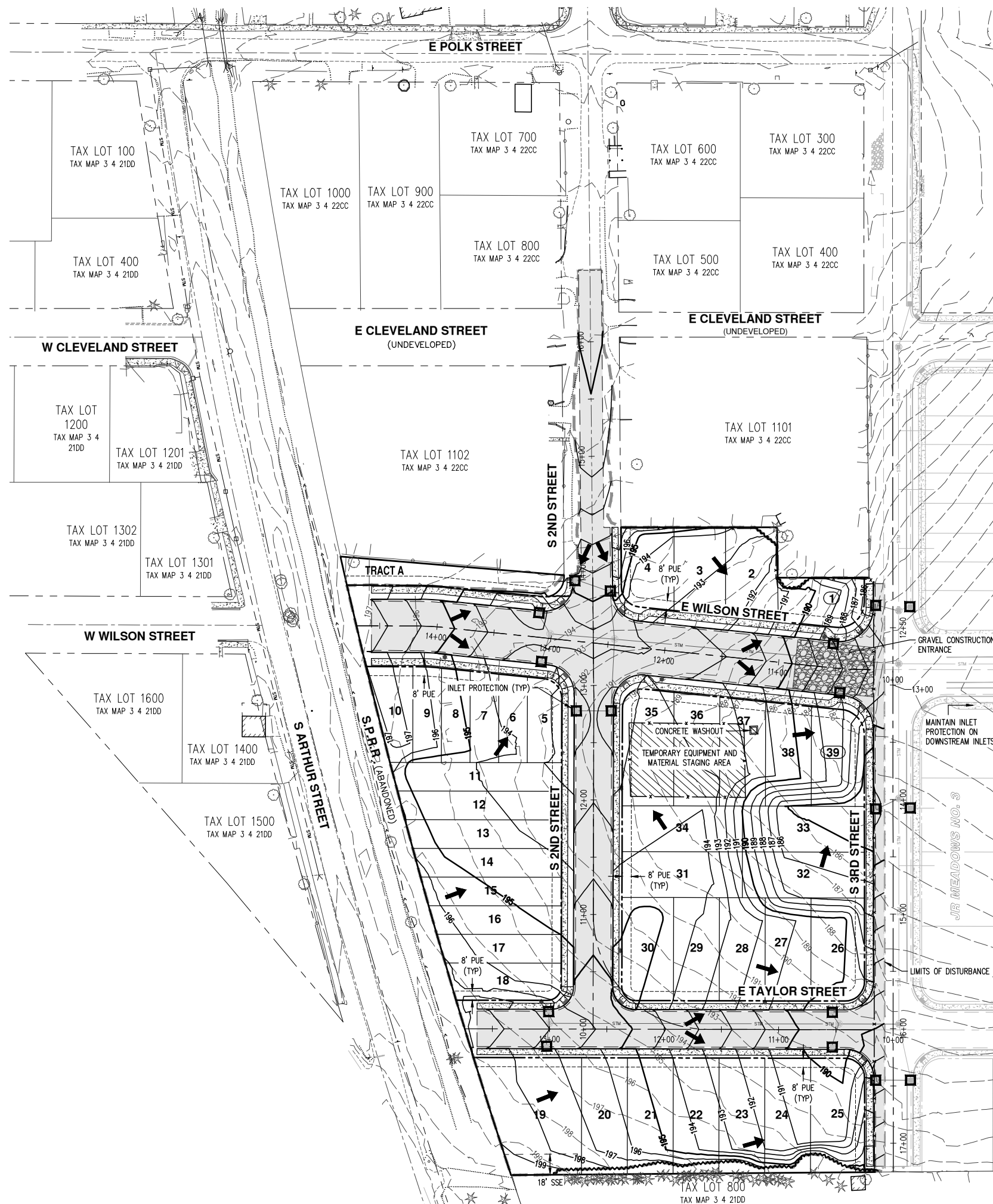
NOTE:
 THESE PLANS ASSUME THE ADJACENT JR MEADOWS NO. 3 SUBDIVISION WILL BE CONSTRUCTED PRIOR TO OR CONCURRENTLY WITH THIS SUBDIVISION.



**PRELIMINARY DEMOLITION PLAN
 S 2ND STREET SUBDIVISION
 CARLTON, OREGON**



RENEWAL DATE:	6/30/25
JOB NUMBER:	4206
DATE:	10/06/2023
DESIGNED BY:	CMS
DRAWN BY:	NRA/JNW
CHECKED BY:	MBH



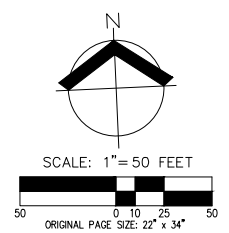
EASEMENT LEGEND

- PUE PUBLIC UTILITY EASEMENT
- SSE PUBLIC SANITARY SEWER EASEMENT

LEGEND

- EXISTING GROUND CONTOUR (1 FT) --- 189 ---
- EXISTING GROUND CONTOUR (5 FT) --- 190 ---
- FINISHED GRADE CONTOUR (1 FT) --- 189 ---
- FINISHED GRADE CONTOUR (5 FT) --- 190 ---
- SEDIMENT FENCE (TO BE INSTALLED PRIOR TO GRADING) - x - x -
- INLET PROTECTION (TYP) [Symbol]
- CONCRETE WASHOUT AREA [Symbol]
- DRAINAGE FLOW DIRECTION [Symbol]
- GRAVEL CONSTRUCTION ENTRANCE [Symbol]
- LIMITS OF DISTURBANCE [Symbol]
- TREE PROTECTION/CONSTRUCTION FENCE [Symbol]
- EXISTING TREE TO REMAIN [Symbol]

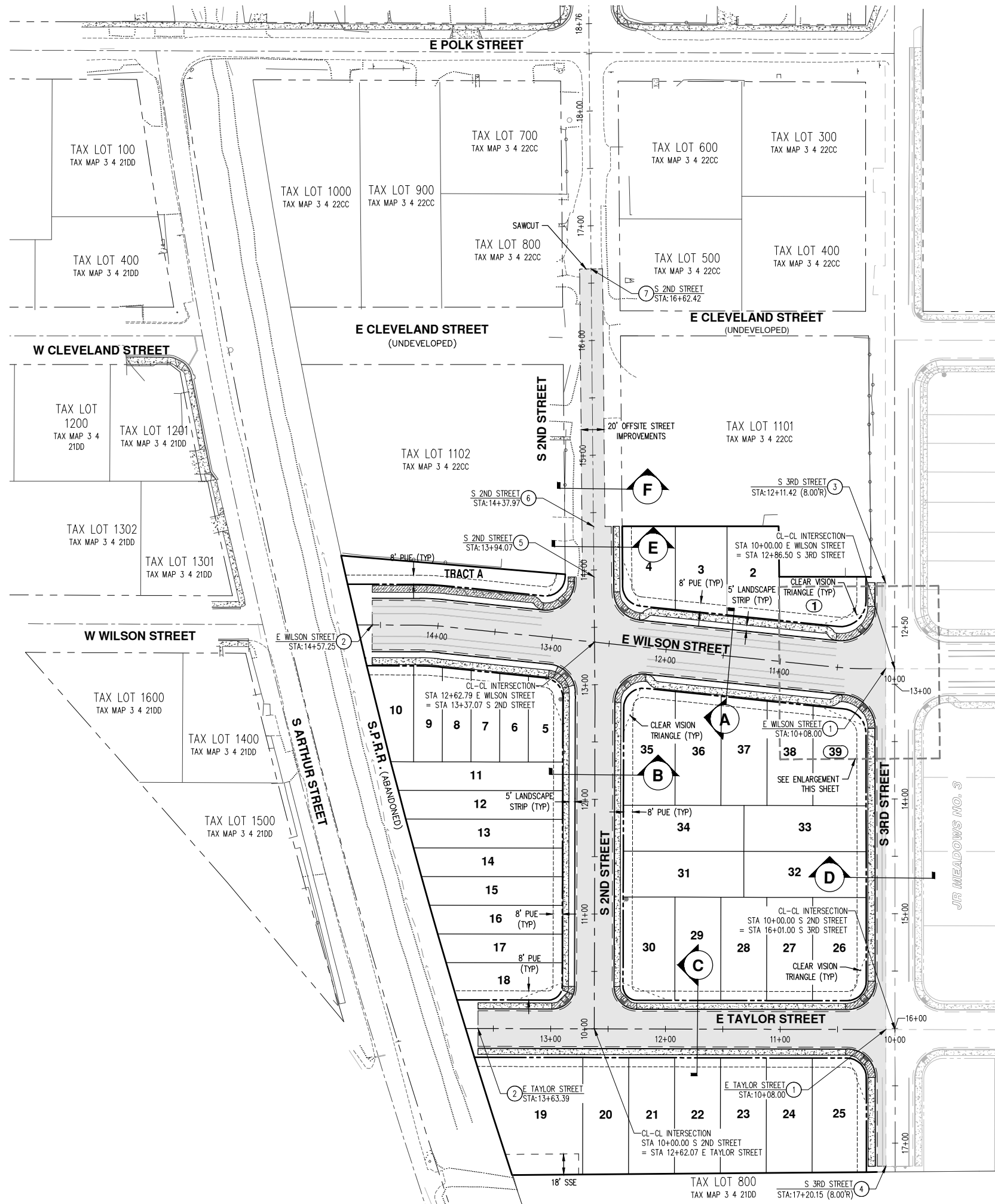
NOTE:
 THESE PLANS ASSUME THE ADJACENT JR MEADOWS NO. 3 SUBDIVISION WILL BE CONSTRUCTED PRIOR TO OR CONCURRENTLY WITH THIS SUBDIVISION.



**PRELIMINARY GRADING AND EROSION CONTROL PLAN
 S 2ND STREET SUBDIVISION
 CARLTON, OREGON**

REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY
NOT FOR CONSTRUCTION
 WALTER B. WURLEY
 RENEWAL DATE: 6/30/25

JOB NUMBER: 4206
 DATE: 10/06/2023
 DESIGNED BY: CMS
 DRAWN BY: NRA/JNW
 CHECKED BY: MBH



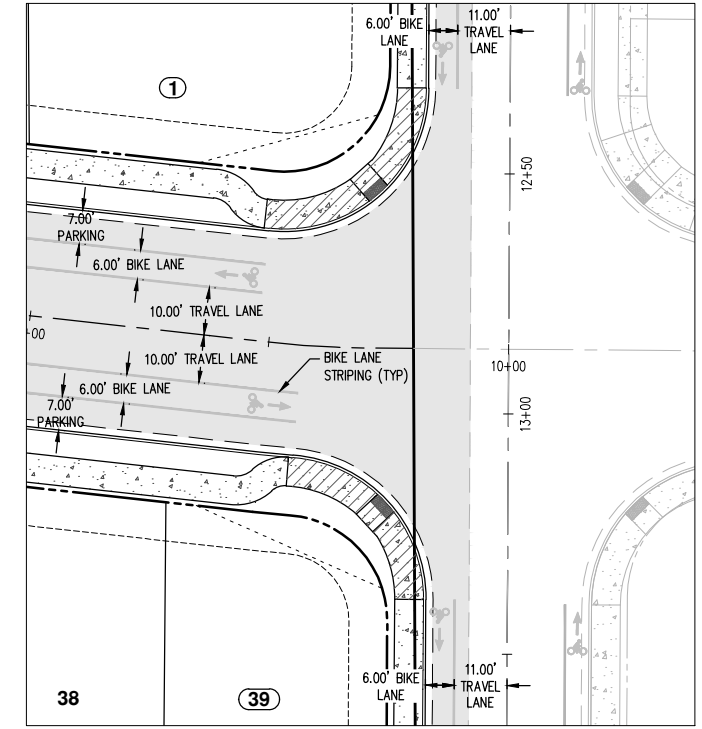
EASEMENT LEGEND

- PUE PUBLIC UTILITY EASEMENT
- SSE PUBLIC SANITARY SEWER EASEMENT

LEGEND

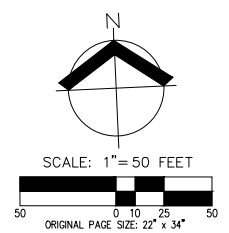
- [Pattern] SIDEWALK TO BE INSTALLED BY HOMEBUILDER
- [Pattern] SIDEWALK TO BE INSTALLED BY CONTRACTOR
- [Pattern] NEW AC PAVEMENT
- [Dashed Line] SAWCUT LINE

- KEYED NOTES**
- BEGIN STREET IMPROVEMENTS.
 - END STREET IMPROVEMENTS.
 - BEGIN PARTIAL STREET IMPROVEMENTS.
 - END PARTIAL STREET IMPROVEMENTS.
 - END FULL STREET IMPROVEMENTS. BEGIN 3/4 STREET IMPROVEMENTS.
 - END 3/4 STREET IMPROVEMENTS. BEGIN OFFSITE STREET IMPROVEMENTS.
 - END OFFSITE STREET IMPROVEMENTS.



BICYCLE STRIPING ENLARGEMENT
 SCALE: 1"=20'

NOTE:
 THESE PLANS ASSUME THE ADJACENT JR MEADOWS NO. 3 SUBDIVISION WILL BE CONSTRUCTED PRIOR TO OR CONCURRENTLY WITH THIS SUBDIVISION.

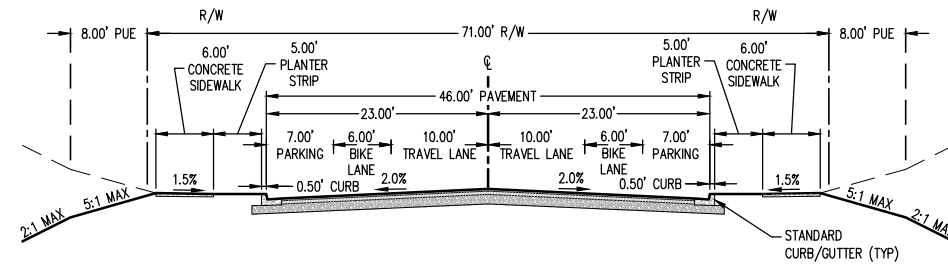


**PRELIMINARY STREET PLAN
 S 2ND STREET SUBDIVISION
 CARLTON, OREGON**

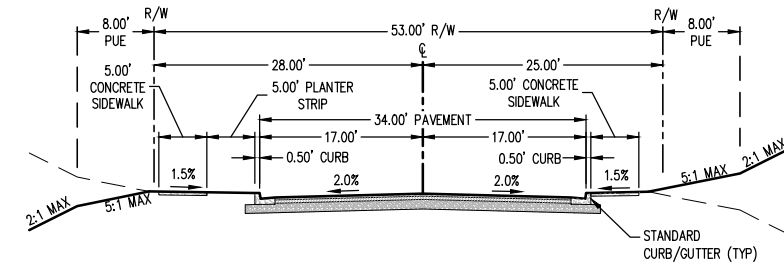
REGISTERED PROFESSIONAL ENGINEER
 PRELIMINARY
 NOT FOR CONSTRUCTION
 COURTNEY B. WURLEY

RENEWAL DATE: 6/30/25

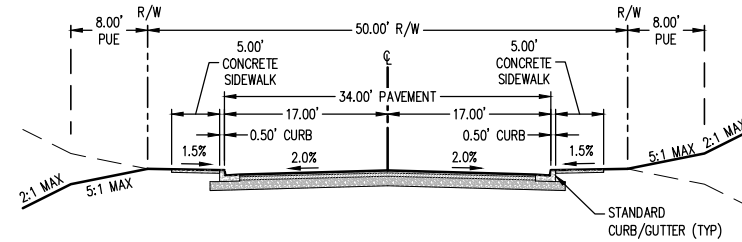
JOB NUMBER:	4206
DATE:	10/06/2023
DESIGNED BY:	CMS
DRAWN BY:	NRA/JNW
CHECKED BY:	MBH



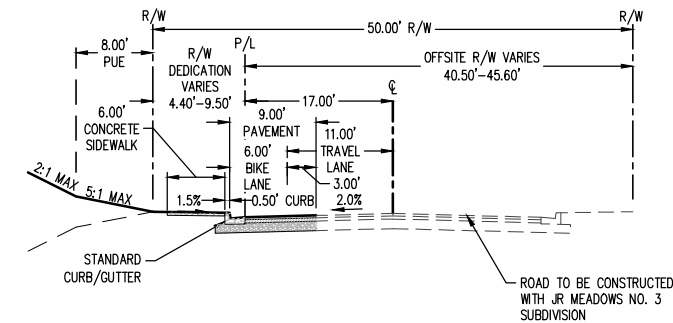
A TYPICAL COLLECTOR STREET SECTION
E WILSON STREET NOT TO SCALE



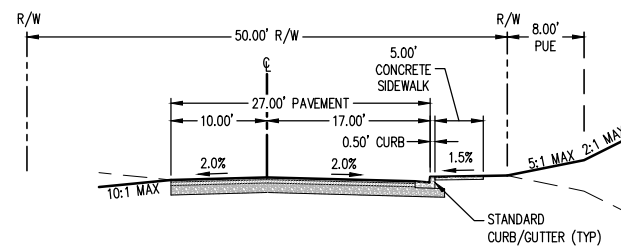
B TYPICAL LOCAL STREET SECTION WITH PLANTER STRIP - LEFT
PORTION OF S 2ND STREET NOT TO SCALE



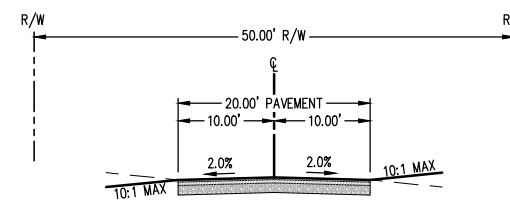
C TYPICAL LOCAL STREET SECTION
E TAYLOR STREET NOT TO SCALE



D SCHOOL ZONE COLLECTOR PARTIAL STREET SECTION
S 3RD STREET NOT TO SCALE



E LOCAL 3/4 STREET SECTION
PORTION OF S 2ND STREET NOT TO SCALE



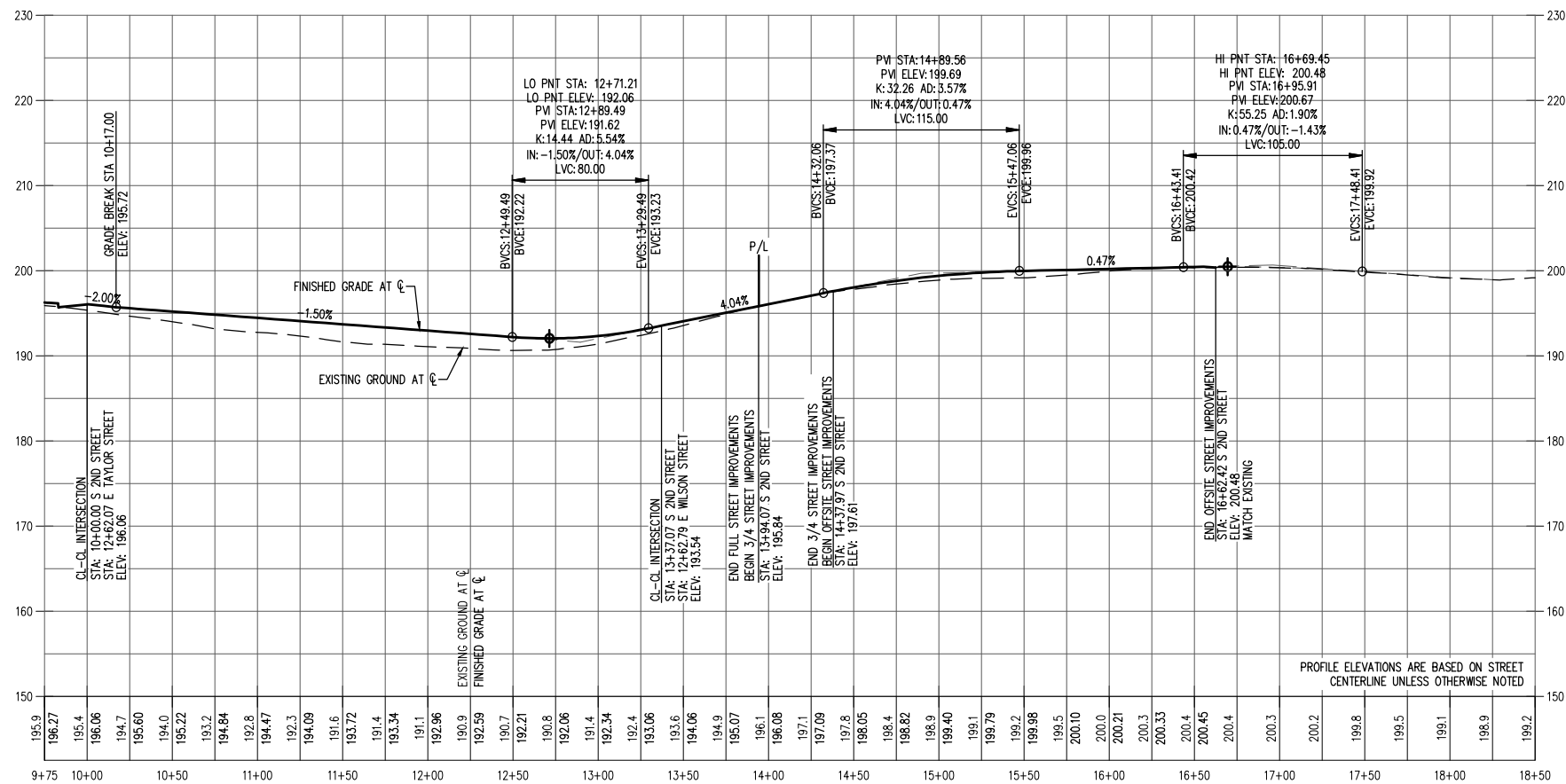
F OFFSITE LOCAL PARTIAL STREET IMPROVEMENTS
PORTION OF S 2ND STREET NOT TO SCALE

PRELIMINARY STREET CROSS SECTIONS
S 2ND STREET SUBDIVISION

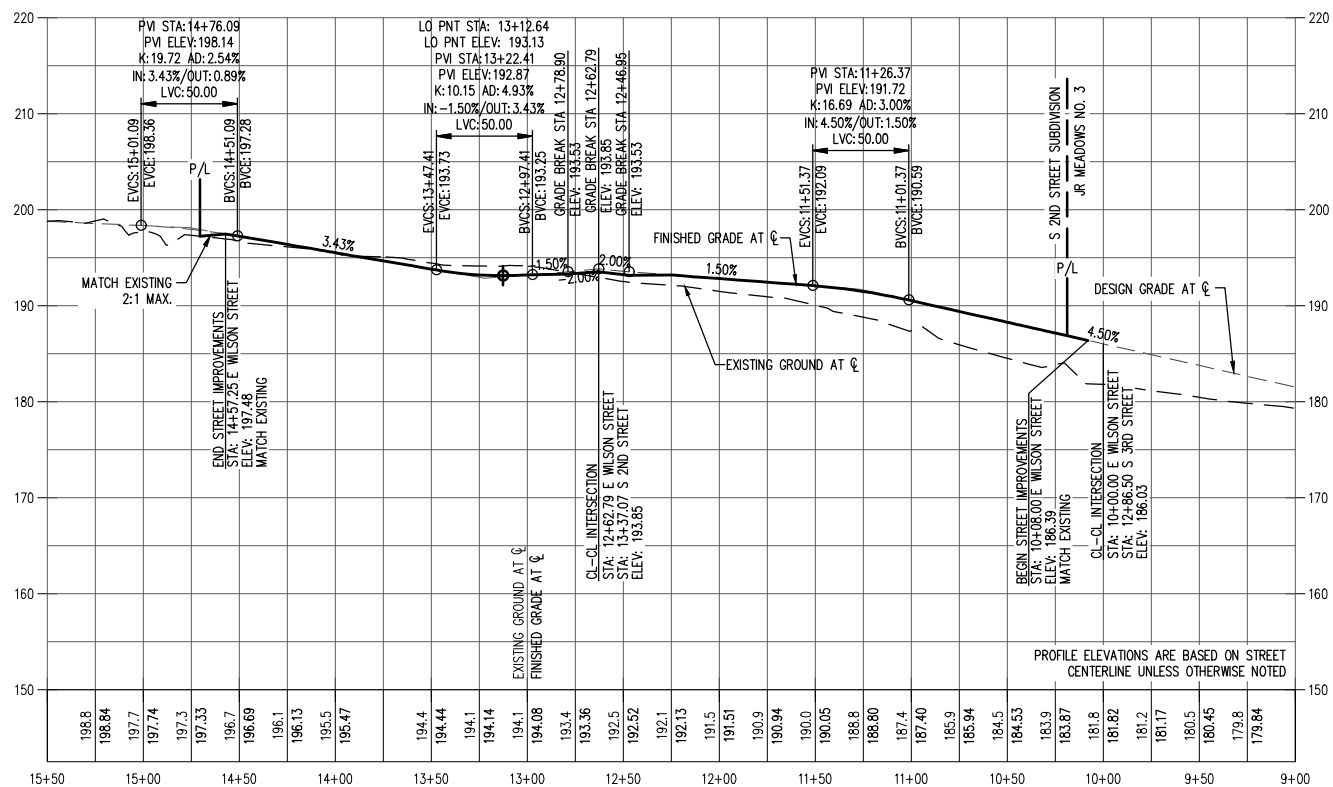
CARLTON, OREGON



RENEWAL DATE:	6/30/25
JOB NUMBER:	4206
DATE:	10/06/2023
DESIGNED BY:	CMS
DRAWN BY:	NRA/JNW
CHECKED BY:	MBH



S 2ND STREET
 HORZ. SCALE: 1" = 50'
 VERT. SCALE: 1" = 10'



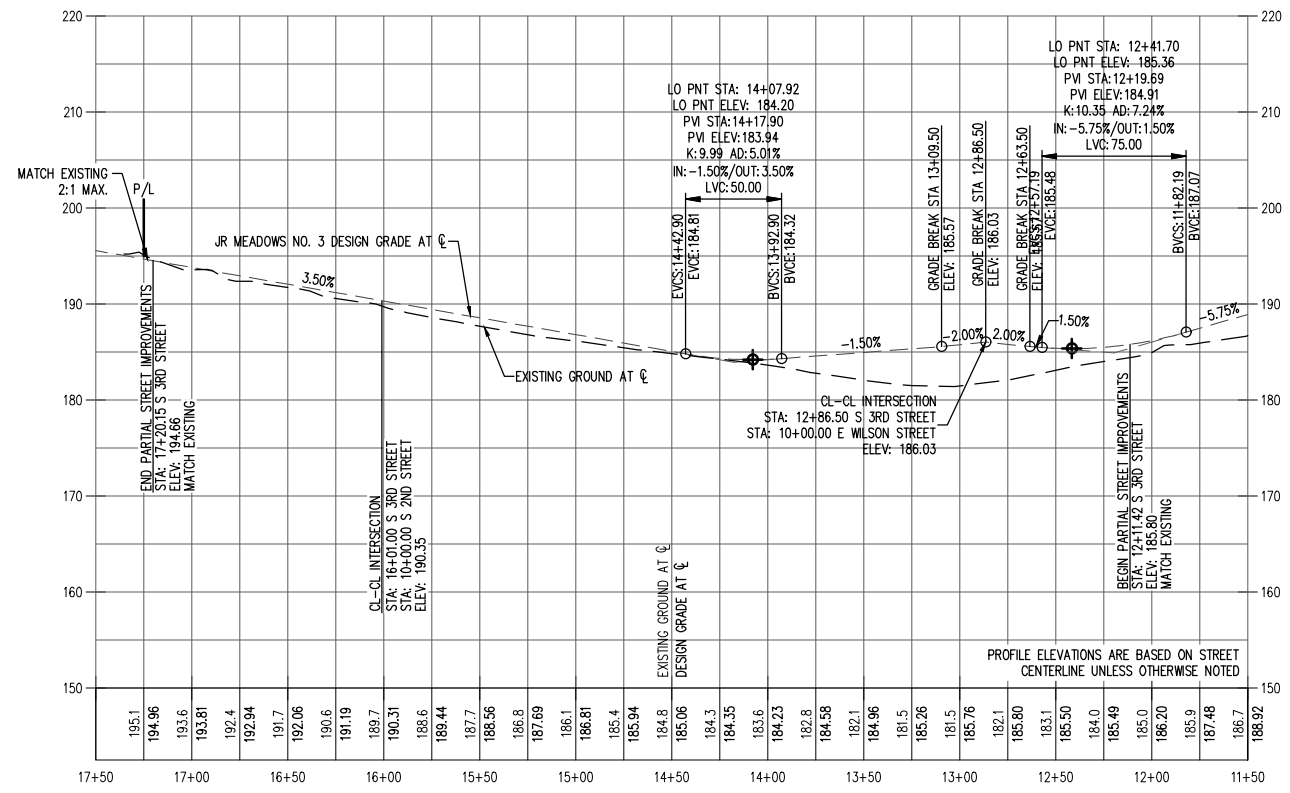
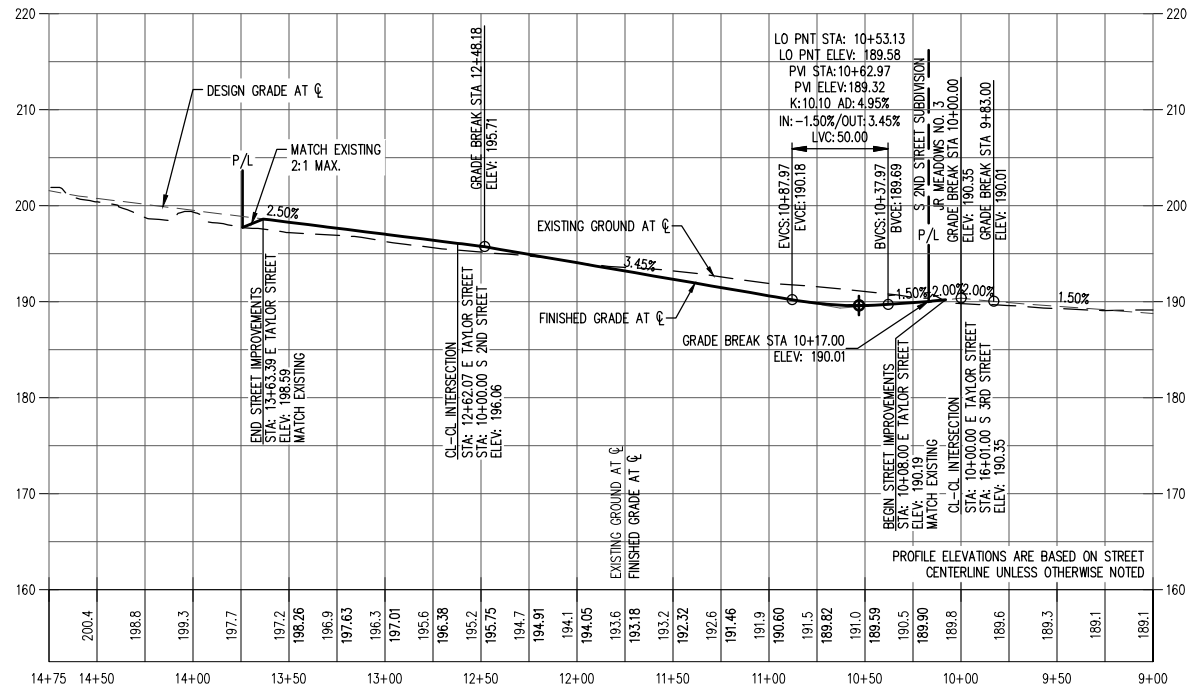
E WILSON STREET
 HORZ. SCALE: 1" = 50'
 VERT. SCALE: 1" = 10'

NOTE:
 THESE PLANS ASSUME THE ADJACENT
 JR MEADOWS NO. 3 SUBDIVISION WILL
 BE CONSTRUCTED PRIOR TO OR
 CONCURRENTLY WITH THIS SUBDIVISION.

PRELIMINARY STREET PROFILES
S 2ND STREET SUBDIVISION
CARLTON, OREGON



RENEWAL DATE:	6/30/25
JOB NUMBER:	4206
DATE:	10/06/2023
DESIGNED BY:	CMS
DRAWN BY:	NRA/JNW
CHECKED BY:	MBH

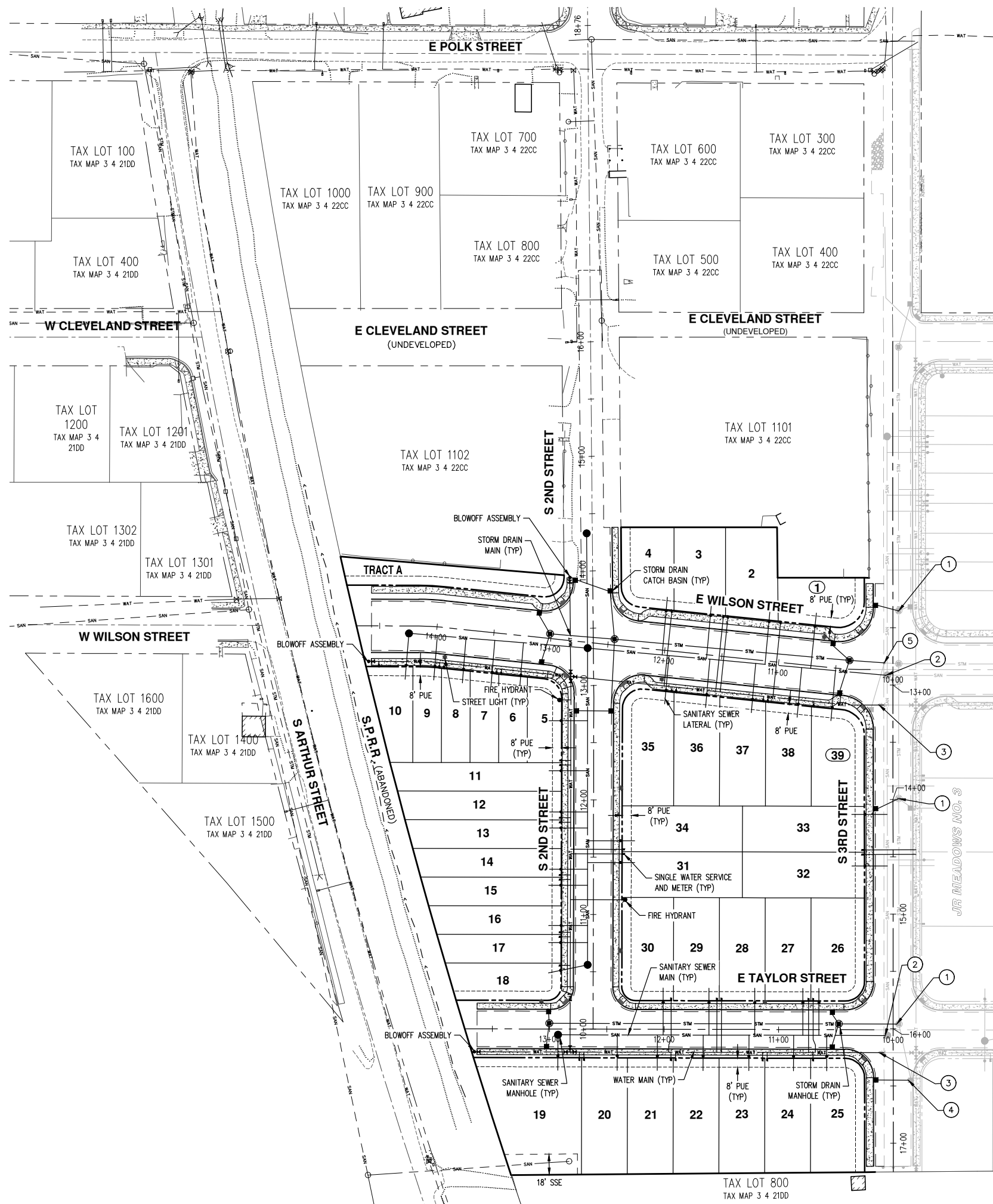


NOTE:
 THESE PLANS ASSUME THE ADJACENT JR MEADOWS NO. 3 SUBDIVISION WILL BE CONSTRUCTED PRIOR TO OR CONCURRENTLY WITH THIS SUBDIVISION.

PRELIMINARY STREET PROFILES
S 2ND STREET SUBDIVISION
CARLTON, OREGON



RENEWAL DATE:	6/30/25
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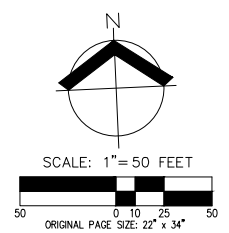
EASEMENT LEGEND

PUE PUBLIC UTILITY EASEMENT
 SSE PUBLIC SANITARY SEWER EASEMENT

- # KEYED NOTES**
- CONNECT TO JR MEADOWS NO. 3 STORMWATER MANHOLE.
 - CONNECT TO JR MEADOWS NO. 3 SANITARY SEWER MANHOLE.
 - CONNECT TO JR MEADOWS NO. 3 WATER MAIN.
 - CONNECT TO JR MEADOWS NO. 3 STORMWATER CATCH BASIN.
 - CONNECT TO JR MEADOWS NO. 3 STORMWATER CLEANOUT.

NOTE:
 ALL LOTS SHALL UTILIZE CURB WEEP HOLES FOR ROOF DRAIN CONNECTIONS.

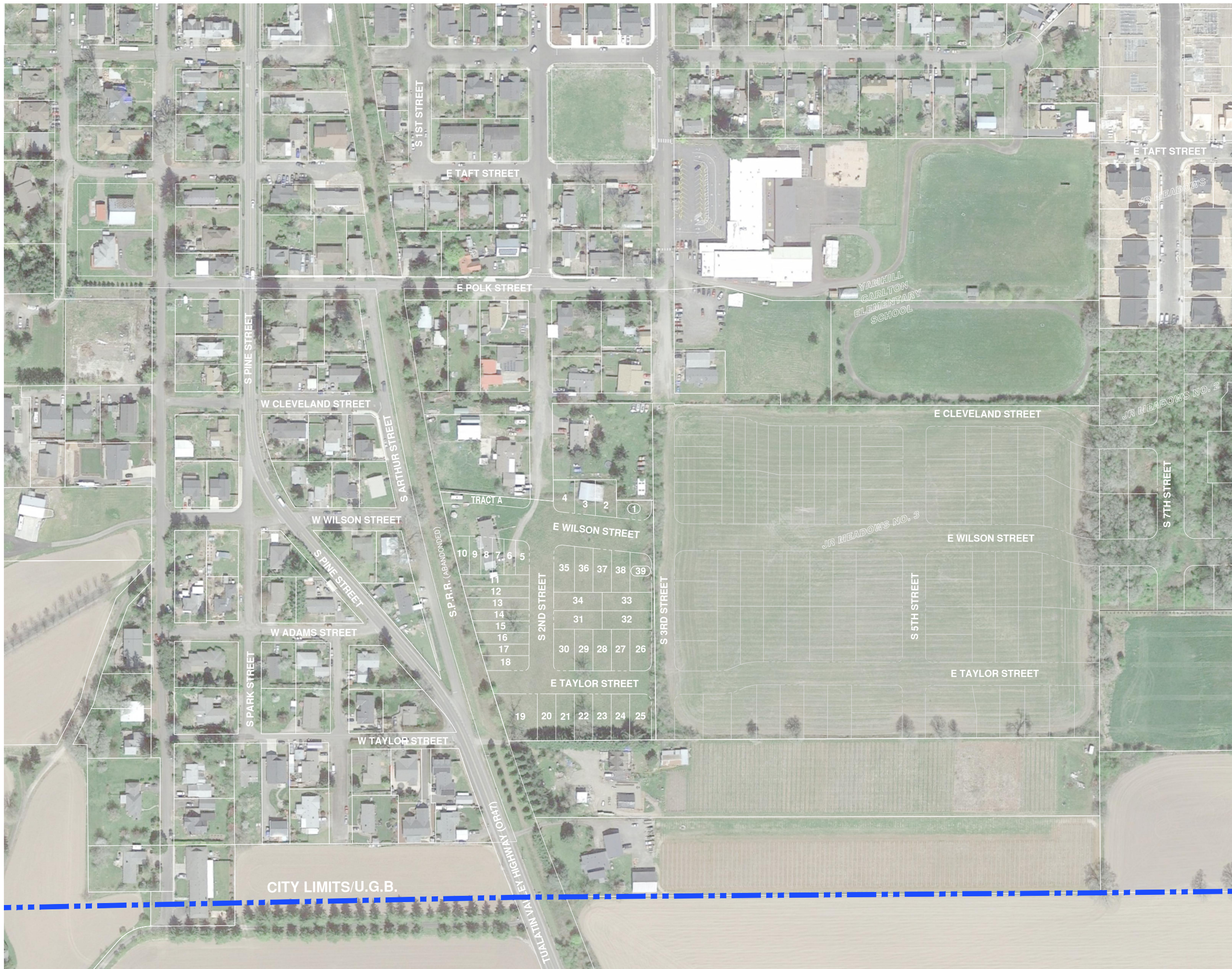
NOTE:
 THESE PLANS ASSUME THE ADJACENT JR MEADOWS NO. 3 SUBDIVISION WILL BE CONSTRUCTED PRIOR TO OR CONCURRENTLY WITH THIS SUBDIVISION.



**PRELIMINARY COMPOSITE UTILITY PLAN
 S 2ND STREET SUBDIVISION
 CARLTON, OREGON**

REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY
NOT FOR CONSTRUCTION
 WALTER B. WURLEY
 RENEWAL DATE: 6/30/25

JOB NUMBER: 4206
 DATE: 10/06/2023
 DESIGNED BY: CMS
 DRAWN BY: NRA/JNW
 CHECKED BY: MBH



**PRELIMINARY AERIAL PHOTOGRAPH PLAN
S 2ND STREET SUBDIVISION**

CARLTON, OREGON



RENEWAL DATE: 6/30/25
JOB NUMBER: 4206
DATE: 10/06/2023
DESIGNED BY: CMS
DRAWN BY: NRA/JNW
CHECKED BY: MBH

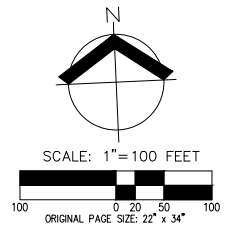




Exhibit B: Application Form and Checklist

City of Carlton
191 E. Main St.
Carlton, OR 97111
Phone: 503-852-7575
Fax: 503-852-7761
www.ci.carlton.or.us



Subdivision

A subdivision means to divide a tract of land into four (4) or more lots within a single calendar year when such land exists as a unit or contiguous units under a single ownership at the beginning of the year. Lots created through the subdivision process shall meet the Development Standards for Land Divisions found in Carlton Development Code (CDC) Chapter 17.88*, and other applicable development standards found in the Carlton Development Code and Public Works Design Standards (PWDS). Each lot shall satisfy the dimensional standards of the applicable zoning district, unless a variance from these standards is approved. In addition, adequate public facilities shall be available to serve the existing and newly created lots (CDC 17.176).

A master plan is required for any application that leaves a portion of the subject property capable of redevelopment (CDC 17.176.010).

Application Process

Subdivisions are reviewed through a two-step process. Preliminary plats for subdivisions are first reviewed in accordance with the Type II land use review procedures found in CDC Section 17.188.020. The Planning Commission conducts a public hearing to review the request and makes a final decision on whether or not to grant preliminary subdivision approval. The Planning Commission's decision may be appealed to the City Council by filing an appeal application within twelve (12) days following the final written notice of the Commission's decision.

Upon receiving preliminary subdivision approval, the applicant has eighteen (18) months to complete the required conditions of approval and record the final survey plat. Final plats are reviewed in accordance with the provisions found in CDC 17.176.040-17.176.050. No final plat shall be approved by the city unless:

1. The plat is in substantial conformance with the Carlton Development Code and the provisions of the preliminary plan as approved, including any conditions imposed in connection therewith;
2. The plat contains free and clear of all liens and encumbrances a donation to the public of all common improvements, including but not limited to streets, roads, sewage disposal and water supply systems, the donation of which is required by the Carlton Development Code or was made a condition of the approval of the preliminary plat;

3. Explanations of all common improvements required as conditions of approval of the preliminary plan have been recorded and referenced on the plat;
4. All reserve blocks shown on the preliminary plan or required as conditions of approval have been deeded in fee simple to the city;
5. The city has received adequate assurances that the applicant has agreed to make all public improvements that are required as conditions of approval of the preliminary plan. The following constitute acceptable adequate assurances:
 - a. Certification by the City Engineer that all required public improvements are completed and approved by the city; or
 - b. The City Engineer certifies that seventy-five (75) percent of the improvements are completed and a performance guarantee as provided by Section 17.216.010.

Application Requirements

To request a subdivision, there shall be submitted to the City Recorder:

One (1) paper copy and one (1) electronic copy (PDF format preferred) of the application form and the application attachments. Copies must be clear and legible.

Application filing fee

Expiration of Approval

If the final survey plat is not recorded within eighteen (18) months, the preliminary approval shall lapse. The City Manager shall upon written request by the applicant and payment of the required fee; grant an extension not to exceed six (6) months provided that:

1. No changes are made to the approved preliminary plat;
2. There have been no changes in existing conditions, facts, or applicable policies or ordinance provisions on which the original approval was based (CDC 17.172.050).

The Planning Commission may extend the approval period for any subdivision or PUD for not more than one (1) additional year at a time. Requests for extension of approval time shall be submitted in writing thirty (30) days prior to the expiration date of the approval period.

*The Carlton Development Code is available online at: www.ci.carlton.or.us/municode

Subdivision Application

City of Carlton

Docket No.: _____

Date: _____

Fee: _____

Receipt No.: _____

Applicant: Name _____
Mailing Address _____
Phone _____

Applicant's Consultant:
AKs Engineering & Forestry
Chris Goodell, AICP, LEED
12965 SW Herman Road, Ste. 100
Tualatin, OR 97062
503-563-6151
chrisg@aks-eng.com

Title Holder: Name _____
Mailing Address _____

Surveyor and/or Engineer (if applicable):

Name _____
Phone _____

Location: Street Address _____
Tax Lot Number _____ Map _____

Description: Comprehensive Plan Designation _____
Current Zoning _____

Prerequisites: In accordance with Carlton Development Code Section 17.12.020, Subdivision is defined as:

Subdivision: To divide a tract of land into four or more lots within a single calendar year when such land exists as a unit or contiguous units under a single ownership at the beginning of the year.

To request a hearing and approval of a subdivision by the City Planning Commission, there shall be submitted to the City Recorder with this application and filing fee, the following information:

_____ A preliminary subdivision plan on sheets that are no larger than 24 by 36 inches in size. Preliminary plans shall be drawn to a scale of one-inch equals 100 feet or larger.

1. The following general information shall be shown on the preliminary plan:
 - a. Vicinity map extending 1,200 feet in each direction showing all streets, property lines, streams, and other pertinent data to locate the proposal.
 - b. North arrow, scale of drawing, and date of preparation.
 - c. Tax map and tax lot number or tax account of the subject property.
 - d. Dimensions and size in square feet or acres of the subject property.
 - e. The names and addresses of the property owner, subdivider (if different), and engineer, surveyor, or other individual responsible for laying out the partition.
 - f. Location of all existing easements within the property.
 - g. Location of City utilities (water, sanitary sewer, storm drainage) within or adjacent to the property proposed for use to serve the development.
 - h. The location and direction of watercourses or drainage swales. The location and disposition of any wells, wetlands identified on the State Wetland Inventory, septic tanks, and drain fields in the development.
 - i. Existing uses of the property, including location of existing structures on the property. It should be noted whether the existing structures are to be removed or to remain on the property.
 - j. Contour lines related to an established benchmark, having the following minimum intervals:
 - (1) Areas with less than 5% slope: One-foot contours
 - (2) Areas with slope between 5% and 10%: Two-foot contours.
 - (3) Areas with slope greater than 10%: Five-foot contours.
2. The preliminary plan shall clearly show to scale the following:
 - a. Proposed name of the PUD or subdivision.
 - b. Locations, approximate dimensions and area in square feet of all proposed lots. Identification of each lot and block by number.
 - c. Proposed streets and their names, approximate grade, radius of curves, and right-of-way widths.
 - d. Any other legal access to the subdivision or PUD, other than a public street.
 - e. Location, width and purpose of any proposed easements.
 - f. If the development is to be constructed in phases, indicate the area of each phase.
3. Supplemental Information.
 - a. Proposed deed restrictions, if any, in outline form.

The names and addresses of all property owners within 100 feet of the site boundaries, as shown on the last preceding tax roll of the Yamhill County Assessor. Note: A list of property owner names and addresses within 100 feet of the property may be obtained from a title company or the Yamhill County Assessor Department located at: 535 NE 5th Street, Room 42, McMinnville, OR, phone: (503) 434-7521.

One (1) paper copy and one (1) electronic copy (PDF format preferred) of this application and all of the application attachments. Copies must be clear and legible.

Review Standards: All subdivisions shall conform to all applicable Zoning District standards, development standards, and other provisions of the Carlton Development Code.

Variance Application: When necessary, the Planning Commission may authorize variances to the requirements of the Carlton Development Code in conjunction with a subdivision request. Application for a variance shall be made by petition of the subdivider, stating fully the grounds for the application. The Planning Commission shall review the Variance in accordance with Development Code Section 17.148. An Application for a Variance Does Does Not accompany this subdivision application.

I HEREBY CERTIFY THAT ALL STATEMENTS CONTAINED HEREIN, ALONG WITH THE EVIDENCE SUBMITTED, ARE IN ALL RESPECTS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.


Applicant's Signature

2/2/23
Date

Applicant's Signature

Date


Title Holder's Signature

2/2/23
Date

Title Holder's Signature

Date

NOTE: ALL OWNERS MUST SIGN THIS APPLICATION OR SUBMIT LETTERS OF CONSENT. INCOMPLETE OR MISSING INFORMATION MAY DELAY THE APPROVAL PROCESS.



Exhibit C: Preliminary Stormwater Report (Updated September 2023)

S 2nd Street Subdivision Carlton, Oregon

Preliminary Stormwater Report

Date: October 2023

Client: Max & Jannette Nardoni
13800 NE Brookside Lane
Carlton, OR 9711

Engineering Contact: Monty Hurley, PE

Prepared By: Nathaniel Ahrend, PE

Engineering Firm: AKS Engineering & Forestry, LLC
12965 SW Herman Road Suite 100
Tualatin, OR 97062

AKS Job Number: 4206



RENEWAL DATE: 6/30/25



www.aks-eng.com

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4.0	Design Parameters	1
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4.1.2.	Land Use.....	1
4.2.	Post-Developed Site Topography and Land Use.....	1
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Appendices

Appendix A: Vicinity Map

Appendix B: Pre-Developed Catchment Map

Appendix C: Post-Developed Downstream Conveyance Catchment Map

Appendix D: City of Carlton Stormwater Management Standards

Appendix E: StreamStats Report

Appendix F: Pre-Developed Storm Event Analysis (10-year) Using the Rational Method

Appendix G: Post-Developed Storm Event Analysis (10-year) Using the Rational Method

Appendix H: JR Meadows No. 2 Overall Storm Drainage Plan

Appendix I: Surcharge Calculations and HGL Exhibit

Appendix J: Stormwater Routing Diagram

Preliminary Stormwater Report

S 2ND STREET SUBDIVISION, YAMHILL COUNTY, OREGON

1.0 Purpose of Report

The purpose of this report is to analyze the effects the proposed development will have on the existing drainage patterns, document the criteria the proposed stormwater system was designed to meet, identify the sources of information on which the analysis was based, detail the design methodology, and document the results of the analysis.

2.0 Project Location/Description

The development is located on Tax Lot 1100 of Yamhill County Assessor's Map 3S 4W 22CC. The subject site is located northeast of the intersection of S Arthur Street and Oregon State Highway 47. The site is approximately ±4.87 acres. The site area generally slopes to the northeast.

3.0 Design Methodology

Per the February 2010 City of Carlton *Public Works Design Standards* (Standards), Section 3.10, the Rational Method was used to calculate the peak design discharges of stormwater, following the methodology of the April 2014 Oregon Department of Transportation (ODOT) *Hydraulics Manual*, Appendix F (See Appendix D of this report for details).

4.0 Design Parameters

4.1. Pre-developed Site Topography and Land Use

4.1.1. Site Topography

The existing area generally slopes toward the northeast corner of the site. Vegetative cover on the site consists primarily of grass with some trees along portions of the site perimeter.

4.1.2. Land Use

The site is currently being used as a single-family residence with additional structures, grass, and trees.

4.2. Post-Developed Site Topography and Land Use

4.2.1. Site Topography

The post-developed site topography will be altered from the predeveloped site topography with cuts and fills to allow the construction of the development, including public streets, single-family homes, and other associated infrastructure and features.

4.2.2. Land Use

The post developed land use will consist of 25 lots for detached single-family homes, 14 lots for attached single-family homes, public streets, and underground utilities.

4.2.3. Post-Developed Input Parameters

The time of concentration was calculated using the travel time for overland sheet flow. The rainfall intensity was determined using the ODOT Zone 8 Intensity-Duration-Frequency (IDF) Curve Tabular Data

(Carlton) included in the City Standards. The flow rate was determined using the 10-year storm event. Calculations are shown in Appendix G. Catchment areas are provided in Appendix C.

4.2.4. Description of Off-Site Contributing Basin

The properties to the north and south drain a small amount of stormwater through the subject site. These areas have been analyzed based on future development as a part of the overall post-developed catchment flow rate calculations. All upstream areas within the city currently zoned as Agricultural Holding (AH) are assumed to be zoned residential in the future for the purpose of determining the runoff coefficients. Area outside the Urban Growth Boundary (UGB) is assumed to remain cultivated land for the purpose of determining runoff coefficients.

5.0 Calculation Methodology

5.1. Proposed Stormwater Conduit Sizing and Inlet Spacing

Stormwater inlets for the site will be placed at locations that will adequately capture stormwater runoff from streets. The on-site stormwater conduit pipes will be sized using Manning's equation, based on the peak flows for the 10-year storm event.

5.2. Downstream Analysis

Stormwater from the subject site and upstream sites flows through the conceptual approved JR Meadows No. 3 (JR3) development to the east, then to the recently constructed JR Meadows No. 2 (JR2) development. Stormwater is then conveyed through the JR2 underground piped stormwater system and eventually directed towards Hawn Creek via two different routes. The analysis of downstream pipes and outfalls within JR2 described below is illustrated in Appendix H. A diagram of the stormwater routing through JR3 to JR2 is also included in Appendix J.

Stormwater from the subject site and upstream sites that is conveyed through JR3 and collected at the west end of E Cleveland Street of JR2 (Pipe A) discharges to an existing drainage channel that flows to Tax Lot 1800 (Tax Map 3 4 22) to the north. The capacity of the existing Pipe A is less than the flow that would surpass the pre-developed flow rate of Discharge Point A when combined with runoff from JR2 that is routed to this location. Thus, Pipe A may be surcharged under fully developed 10-year design storm conditions; however, the stormwater system in this area has sufficient depth to allow for a surcharge without causing any surface overflow. Flow from the subject site and JR3 directed to Pipe A and ultimately to Discharge Point A will be controlled utilizing a flow splitter manhole proposed within JR3 to keep the post-developed flow rate below the pre-developed flow rate at Discharge Point A.

For stormwater from the subject site and upstream sites that is conveyed through JR3 and collected at the west end of E Wilson Street of JR2 (Pipe B1), a portion of the runoff discharges to a wetland and then to an existing drainage channel that flows to Tax Lot 1800 to the north (Discharge Point A), and the remaining runoff continues to an outfall at the east end of E Cleveland Street within JR2 (Discharge Point B). The portion of the runoff that is routed to Discharge Point A is currently controlled by an existing flow splitter manhole installed with JR2 that limits flow to this location based on the outlet pipe capacity, so there will be no increase in the flow to Discharge Point A from this location due to the added flow from the development of the subject site.

The remaining runoff collected from the subject site and upstream sites that is not directed to Discharge Point A will be routed through the JR3 and JR2 stormwater systems and continue to an outfall at the east end of E Cleveland Street within JR2 (Discharge Point B). A small portion of the most downstream pipes in JR2 (Pipe B2) may be surcharged under fully developed 10-year design storm conditions; however, the stormwater system in this area has sufficient depth to allow for a surcharge without causing any surface overflow. This downstream analysis assumes that all stormwater pipes within JR3 will be sized to convey runoff from the subject site and upstream sites, and that the stormwater pipe network will be designed to route the runoff as described above.

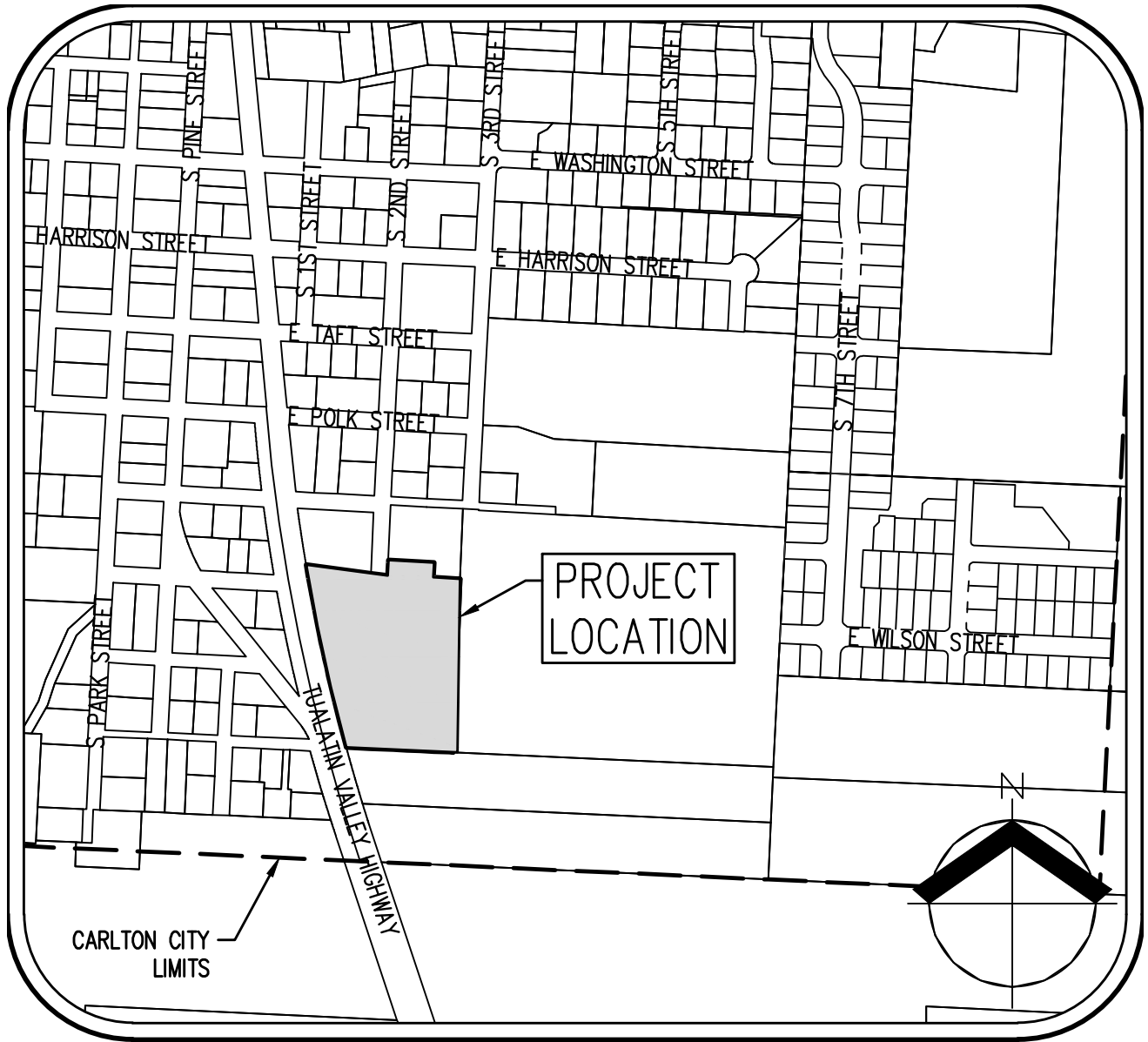
5.3. Surchage Summary

The level of surcharge within the JR2 storm system varies, and the worst-case scenario occurs at existing manhole STM 2-3, which is approximately 4’ deep. The surcharge elevation at this manhole is approximately ±1.7 feet below the rim elevation, which is within the typical acceptable freeboard limits of 1 foot between the hydraulic grade line (HGL) and the top of the structure. Surchage calculations and approximate HGL elevations are included in Appendix I. The surcharge calculations present a conservative analysis, applying the flow present at the most downstream manhole to the subsequent upstream manholes.

5.4. Pre-Developed and Post-Developed Summary

	Discharge Point A TC (Min)	Discharge Point B TC (Min)	Discharge Point A Flow (CFS)	Discharge Point B Flow (CFS)
Pre-Developed	41.17	40.91	14.62	3.80
Post-Developed	25.00	33.59	13.35	13.06

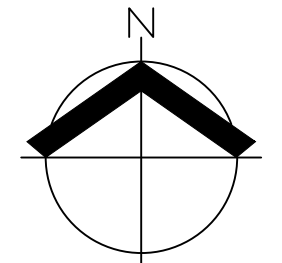
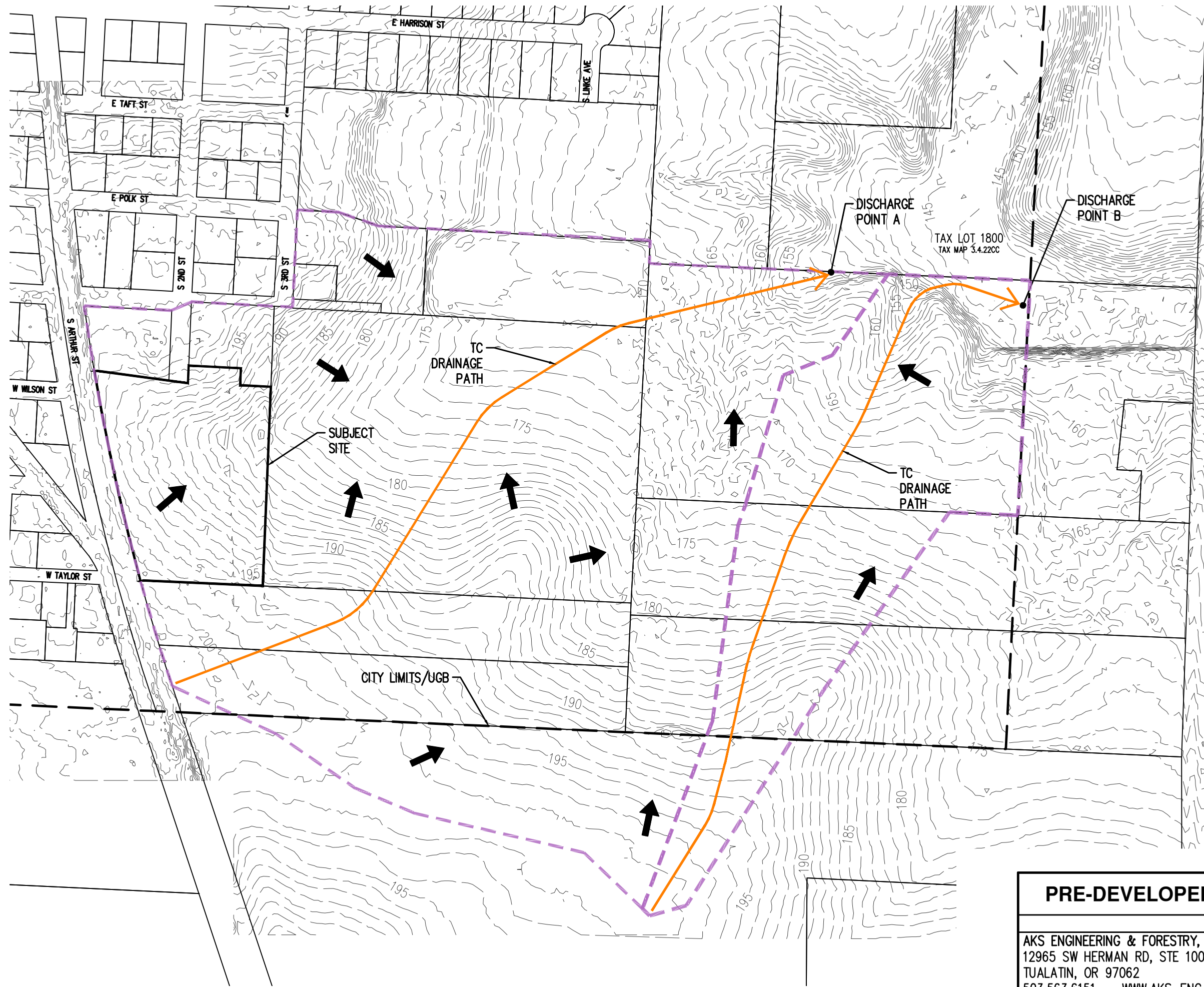
Appendix A: Vicinity Map



VICINITY MAP

NTS

Appendix B: Pre-Developed Catchment Map



SCALE: 1" = 250 FEET



ORIGINAL PAGE SIZE: 11" x 17"

DATE: 05/16/2023

PRE-DEVELOPED CATCHMENT MAP

EXHIBIT

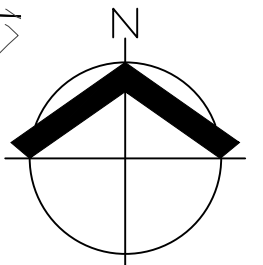
B

AKS ENGINEERING & FORESTRY, LLC
 12965 SW HERMAN RD, STE 100
 TUALATIN, OR 97062
 503.563.6151 WWW.AKS-ENG.COM

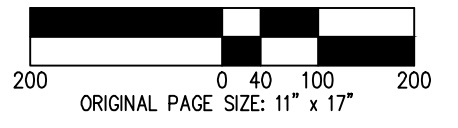


DRWN: NRA
 CHKD: CMS
 AKS JOB:
 4206

Appendix C: Post-Developed Downstream Conveyance Catchment Map



SCALE: 1" = 200 FEET



DATE: 09/26/2023

**POST-DEVELOPED DOWNSTREAM
CONVEYANCE CATCHMENT MAP**

EXHIBIT
C

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM



DRWN: NRA
CHKD: CMS
AKS JOB:
4206

DWG: 4206 POST CONVEYANCE BASIN MAP | P-03

Appendix D: City of Carlton Stormwater Management Standards

- j) Maintenance, including accessibility for cleaning and inspection personnel and equipment.

3.10 **DESIGN CALCULATIONS AND CAPACITY**

a. **Design Calculations**

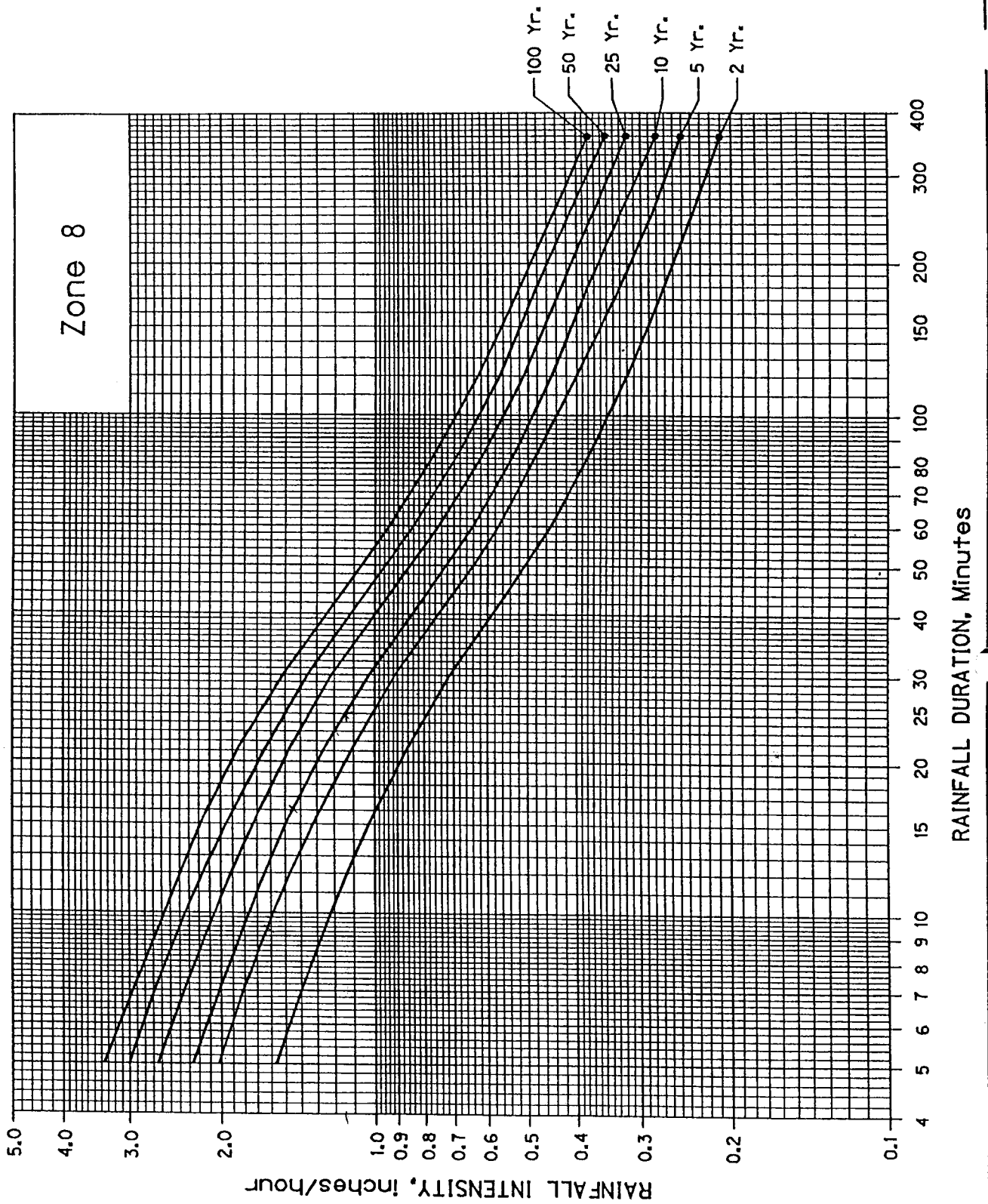
- 1) Design calculations shall be submitted for all drainage facilities. These drainage calculations shall be included on the site plan drawings and shall be stamped by a professional engineer licensed in the State of Oregon.
- 2) Peak design discharges shall be computed using the rational formula, $Q=CiA$.
- 3) If use of a Santa Barbara Urban Hydrograph (SBUH) based computer program is proposed for use in sizing storm drain pipes for peak discharge, a 50 year SBUH storm event must be used in lieu of the 10 year or 25 year rational storm frequency to provide equivalent capacity. All CN parameters shall be as or more conservative than the equivalent runoff coefficients listed in these standards. The City Engineer reserves the right to verify all calculations using the rational method, and require larger pipe sizes if the rational calculations result in higher flows than the SBUH methodology.

b. **Design Storm**

- 1) Rainfall Intensity-Duration Curve - The rainfall intensity-duration-frequency (IDF) curve for use in the City of Carlton is the ODOT Zone 8 IDF curve (enclosed herein).
- 2) Design Frequency - The intensity-duration design frequency is based on the time of concentration for the area and the size of the drainage facility. The adopted criteria are listed in the following table.

DESIGN STORM FREQUENCY	
AREA	FREQUENCY
Residential areas	10-year storm
Commercial and high value districts	10-year storm
Trunk lines (18" pipe and larger)	25-year storm
Minor creeks and drainage ways (not shown as a flood plain on the Flood Insurance Rate Map (FIRM))	50-year storm
Major creeks (shown as a flood plain on the FIRM)	100-year storm

RAINFALL INTENSITY - DURATION - FREQUENCY CURVES



ODOT Zone 8 IDF Curve Tabular Data (Carlton)

Rainfall Duration (Min)	Rainfall Intensity, inches/hour				
	5 year Storm	10 year Storm	25 year Storm	50 year Storm	100 year Storm
5	2.01	2.25	2.63	3.00	3.35
6	1.90	2.12	2.50	2.81	3.12
7	1.81	2.01	2.35	2.68	2.95
8	1.71	1.91	2.24	2.55	2.80
9	1.65	1.83	2.14	2.43	2.69
10	1.60	1.78	2.07	2.33	2.58
11	1.51	1.70	1.98	2.25	2.48
12	1.48	1.65	1.90	2.18	2.40
13	1.41	1.60	1.85	2.10	2.31
14	1.38	1.55	1.79	2.01	2.24
15	1.32	1.50	1.72	1.95	2.19
20	1.13	1.30	1.50	1.69	1.90
25	1.00	1.14	1.35	1.50	1.69
30	0.91	1.02	1.21	1.36	1.51
35	0.82	0.92	1.10	1.21	1.38
40	0.75	0.84	0.98	1.11	1.24
45	0.69	0.78	0.92	1.02	1.15
50	0.64	0.73	0.85	0.95	1.08
55	0.60	0.68	0.80	0.89	1.00
60	0.57	0.64	0.75	0.84	0.94
70	0.53	0.59	0.68	0.76	0.85
80	0.49	0.54	0.63	0.70	0.78
90	0.46	0.52	0.59	0.66	0.74
100	0.44	0.49	0.56	0.62	0.69
110	0.42	0.47	0.53	0.60	0.66
120	0.40	0.45	0.51	0.57	0.63
130	0.385	0.44	0.49	0.55	0.60
140	0.37	0.420	0.48	0.53	0.58
150	0.36	0.410	0.46	0.520	0.56
160	0.35	0.400	0.45	0.50	0.540
170	0.340	0.390	0.44	0.49	0.53
180	0.33	0.38	0.43	0.48	0.52

- 3) If use of a Santa Barbara Urban Hydrograph (SBUH) based computer program is proposed for use in sizing storm drain pipes for peak discharge, a 50 year SBUH storm event must be used in lieu of the 10 year or 25 year rational storm frequency to provide equivalent capacity. All CN parameters shall be as or more conservative than the equivalent runoff coefficients listed in these standards. The City Engineer reserves the right to verify all calculations using the rational method, and require larger pipe sizes if the rational calculations result in higher flows than the SBUH methodology.

c. **Runoff Coefficients**

- 1) The coefficients of runoff "C" are listed below. Use of coefficients other than those listed must be based on field investigations which demonstrate conclusively that the proposed coefficients are justified.

RUNOFF COEFFICIENTS			
SOIL COVER	FLAT TERRAIN S<2%	ROLLING TERRAIN 2%<S≤10%	STEEP TERRAIN S>10%
Cultivated Land	0.30	0.35	0.40
Parks & Cemeteries	0.15	0.20	0.30
Woodlands & Forests	0.10	0.15	0.20
Meadows & Pasture Land	0.25	0.30	0.35
1) Single-family residential in urban areas, except corner lots with duplex potential	0.40	0.45	0.50
2) Gravel parking lots	0.50	0.55	0.60
3) Mobile home parks	0.60	0.65	0.70
4) Multi-family residential, zero-lot-line single-family residential and potential duplex lots in single-family residential	0.70	0.75	0.80
Highly impermeable (roofs and paved areas)	0.90	0.90	0.90

d. **Time of Concentration**

- 1) For land in a pre-development condition, the minimum time of concentration

from the most remote point in the basin to the first defined channel (e.g. gutter, ditch or pipe) shall be 10 minutes. Pre-development shall be defined as a site with natural vegetation on native soil.

- 2) For developed residential and commercial/industrial property, the maximum time of concentration from the most remote point in the development to the closest inlet shall be 10 minutes, unless calculations by an acceptable method show the time to be longer.

3.11 OPEN CHANNELS

- a. Within the UGB, creation of new open channels will not generally be allowed. Where allowed by the City, ditches shall be located along or adjacent to lot lines.
- b. For reasons of maintenance and safety, bank slopes generally shall be 3H:1V or flatter unless otherwise required by the Public Works Superintendent or the Public Works Superintendent.
- c. The maximum allowable design velocity shall be 7 fps.
- d. The minimum allowable design velocity shall be 2 fps. The installation of a concrete lined low-flow channel may be required to achieve minimum velocity.
- e. Unless otherwise approved by the City Engineer, all piped discharges to open channels (existing or new) shall be mitered to match the channel side slope and include a reinforced concrete collar (6" minimum thickness) to prevent settlement or erosion of the pipe trench at the discharge location, and to protect the end of the pipe. Unless otherwise approved by Public Works and the City Engineer, the concrete collar shall extend from the channel bottom to the top of bank. Grates shall be provided on all inlets or outlets 18" or larger unless otherwise specifically approved by Public Works and the City Engineer, as well as at any locations required by Public Works to accommodate maintenance or mowing requirements.

3.12 ALIGNMENT AND LOCATION

a. General

- 1) Generally, storm drains shall be laid on a straight alignment between catch basins and between manholes. Lines 15-inch in diameter and smaller may be laid on horizontal curves conforming to the street curvature provided the radius of the horizontal curve is not less than 200 feet.
- 2) Variance for horizontal curves on larger size pipes shall be reviewed by the City Engineer on a case by case basis.
- 3) Where storm drains are being designed for installation parallel to other utility

Appendix E: StreamStats Report

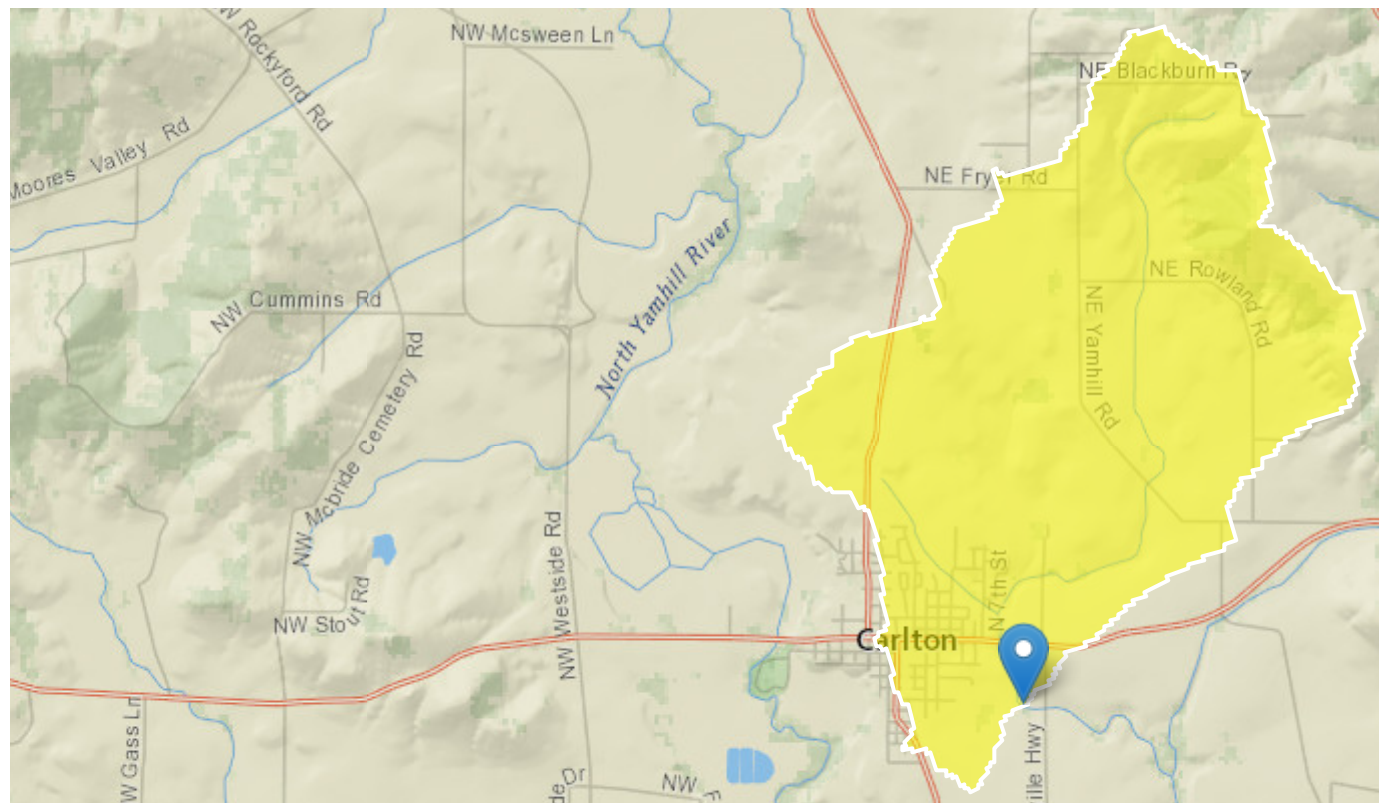
StreamStats Report

Region ID: OR

Workspace ID: OR20220823171209221000

Clicked Point (Latitude, Longitude): 45.29024, -123.16642

Time: 2022-08-23 10:12:32 -0700



+ Collapse All

➤ Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	3.21	degrees
DRNAREA	Area that drains to a point on a stream	3.84	square miles
ELEV	Mean Basin Elevation	243	feet
I24H2Y	Maximum 24-hour precipitation that occurs on average once in 2 years - Equivalent to precipitation intensity index	1.97	inches

Parameter Code	Parameter Description	Value	Unit
JANMAXT2K	Mean Maximum January Temperature from 2K resolution PRISM 1961-1990 data	45.9	degrees F
JANMINT2K	Mean Minimum January Temperature from 2K resolution PRISM PRISM 1961-1990 data	33.1	degrees F
ORREG2	Oregon Region Number	10001	dimensionless
SOILPERM	Average Soil Permeability	0.75	inches per hour
WATCAPORC	Available water capacity from STATSGO data using methods from SIR 2005-5116	0.18	inches

➤ Peak-Flow Statistics

Peak-Flow Statistics Parameters [Reg 2B Western Interior LT 3000 ft Cooper]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.84	square miles	0.37	7270
BSLOPD	Mean Basin Slope degrees	3.21	degrees	5.62	28.3
I24H2Y	24 Hour 2 Year Precipitation	1.97	inches	1.53	4.48
ELEV	Mean Basin Elevation	243	feet		
ORREG2	Oregon Region Number	10001	dimensionless		

Peak-Flow Statistics Disclaimers [Reg 2B Western Interior LT 3000 ft Cooper]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Peak-Flow Statistics Flow Report [Reg 2B Western Interior LT 3000 ft Cooper]

Statistic	Value	Unit
2 year peak flood	94.3	ft ³ /s
5 year peak flood	140	ft ³ /s
10 year peak flood	173	ft ³ /s

Statistic	Value	Unit
25 year peak flood	216	ft ³ /s
50 year peak flood	248	ft ³ /s
100 year peak flood	280	ft ³ /s
500 year peak flood	358	ft ³ /s

Peak-Flow Statistics Citations

Cooper, R.M., 2005, Estimation of Peak Discharges for Rural, Unregulated Streams in Western Oregon: U.S. Geological Survey Scientific Investigations Report 2005-5116, 76 p. (<http://pubs.usgs.gov/sir/2005/5116/pdf/sir2005-5116.pdf>)

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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.10.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

Appendix F: Pre-Developed Storm Event Analysis (10-year) Using the Rational Method

Project Name: S 2nd Street Subdivision
 Job #: 4206
 Date: May 2023

SUBJECT: Pre-Developed Flow Using Rational Method

10-year

Pre-Developed Flow at Point A

$L_1 =$	300 feet
$L_2 =$	1,800 feet
$V =$	4.5
$n =$	0.15
$i =$	0.84 inches/hr
$S =$	0.015 ft/ft
$T_c =$	$0.93 * (300^{0.6} * 0.15^{0.6}) / (0.84^{0.4} * 0.015^{0.3}) + 1800 / (60 * 4.5)$
Time of Concentration =	41.17 minutes
$A = 1S$	52.74 acres
$C =$	0.33 (Per JR No. 2 Storm Report)
$i =$	0.84 inches/hr
$Q = CiA =$	14.62 ft³/sec

Pre-Developed Flow at Point B

$L_1 =$	300 feet
$L_2 =$	1,730 feet
$V =$	4.5
$n =$	0.15
$i =$	0.84 inches/hr
$S =$	0.015 ft/ft
$T_c =$	$0.93 * (300^{0.6} * 0.15^{0.6}) / (0.84^{0.4} * 0.015^{0.3}) + 1730 / (60 * 4.5)$
Time of Concentration =	40.91 minutes
$A = 1S$	15.07 acres
$C =$	0.30 (Per JR No. 2 Storm Report)
$i =$	0.84 inches/hr
$Q = CiA =$	3.80 ft³/sec

Appendix G: Post-Developed Storm Event Analysis (10-year) Using the Rational Method

Project Name: S 2nd Street Subdivision
 Job #: 4206
 Date: September 2023

SUBJECT: Post-Developed Downstream Conveyance Flow Using Rational Method

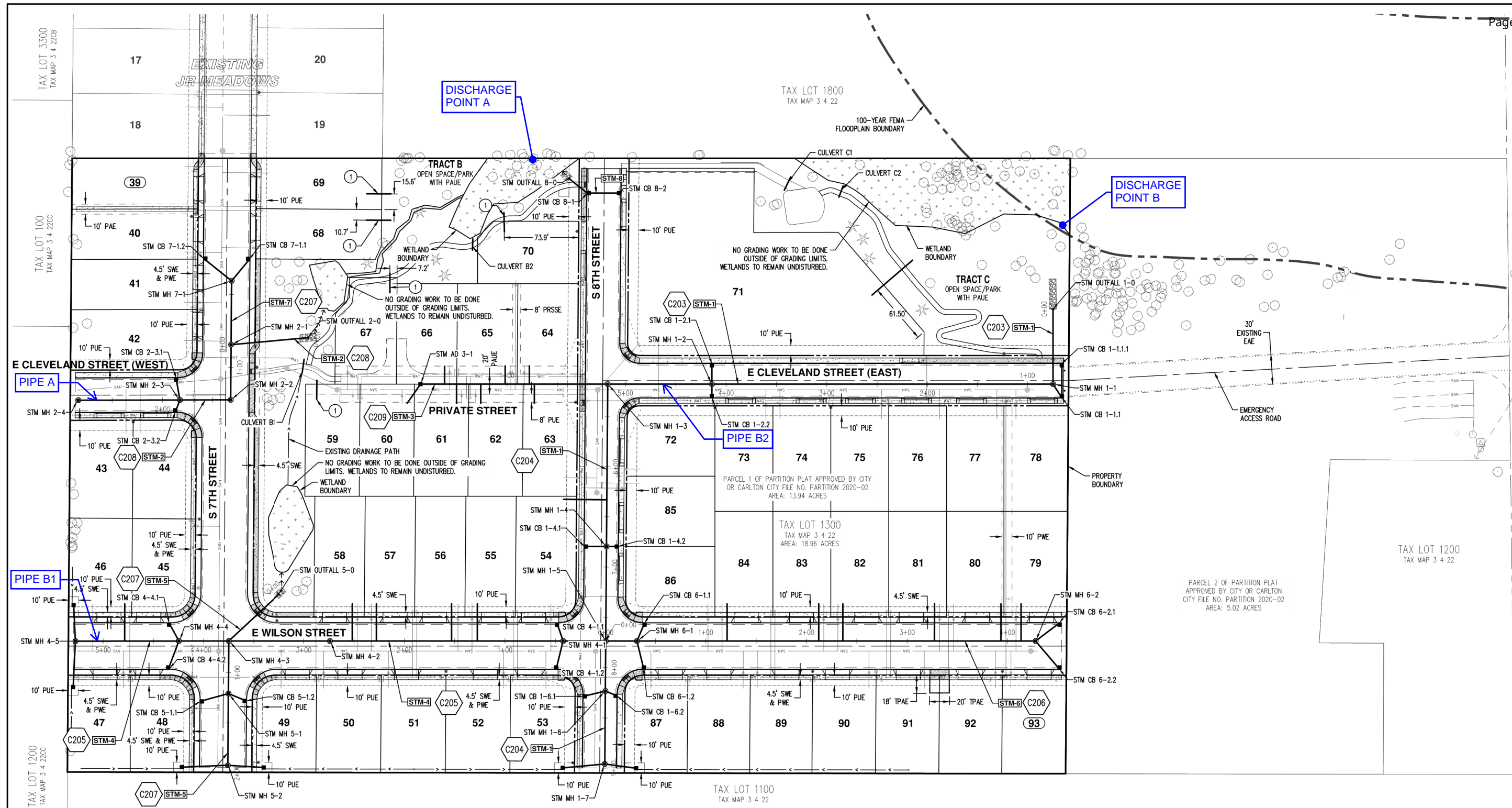
10-year

Basin A Flow at Pipe A			
$L_1 =$		215 feet	
$n =$		0.15	
$i =$		1.14 inches/hr	
$S =$		0.015 ft/ft	
$T_c =$		$0.93 * (215^{0.6} * 0.15^{0.6}) / (1.14^{0.4} * 0.015^{0.3})$	
Time of Concentration =		25.00 minutes	
A = Basin A		21.39 acres	
	Single Family Detached	15.16 acres	C= 0.45
	Single Family Attached	3.35 acres	C= 0.75
	Park (School Field)	2.88 acres	C= 0.20
Composite C =		0.46	
$i =$		1.14 inches/hr	
Q = CiA =		11.30 ft³/sec	
Non-Surcharged Capacity of Pipe A		8.72 ft³/sec	

Basin B Flow at Pipe B1			
$L_1 =$		300 feet	
$n =$		0.24	
$i =$		0.84 inches/hr	
$S =$		0.02 ft/ft	
$T_c =$		$0.93 * (220^{0.6} * 0.24^{0.6}) / (0.92^{0.4} * 0.02^{0.3})$	
Time of Concentration =		33.59 minutes	
A = Basin B		13.24 acres	
	Single Family Detached	12.39 acres	C= 0.45
	Cultivated Land (Outside UGB)	0.85 acres	C= 0.35
Composite C =		0.44	
$i =$		0.92 inches/hr	
Q = CiA =		5.40 ft³/sec	
Capacity of Pipe B1		5.40 ft³/sec	

Basin C Flow at Pipe B2			
$L_1 =$		300 feet	
$n =$		0.24	
$i =$		0.84 inches/hr	
$S =$		0.02 ft/ft	
$T_c =$		$0.93 * (300^{0.6} * 0.24^{0.6}) / (0.84^{0.4} * 0.02^{0.3})$	
Time of Concentration =		41.00 minutes	
A = Basin C		25.82 acres	
	Single Family Detached	19.09 acres	C= 0.45
	Cultivated Land (Outside UGB)	6.73 acres	C= 0.35
Composite C =		0.42	
$i =$		0.84 inches/hr	
Q = CiA =		9.19 ft³/sec	
Basin B Flow at Pipe B2			
Total Flow from Basin B at Pipe B1		5.40 ft ³ /sec	
Flow routed to Discharge Point A		2.05 ft ³ /sec	
Remaining Basin B Flow at Pipe B1		3.35 ft³/sec	
Total Flow at Pipe B2		12.55 ft³/sec	
Non-Surcharged Capacity of Pipe B2		10.73 ft³/sec	

Appendix H: JR Meadows No. 2 Overall Storm Drainage Plan



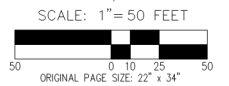
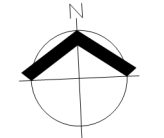
KEY NOTES:

- CONSTRUCT TYPICAL 6-INCH DI STORMWATER LATERAL AT 2% MINIMUM SLOPE.

= SHEET

EASEMENT LEGEND

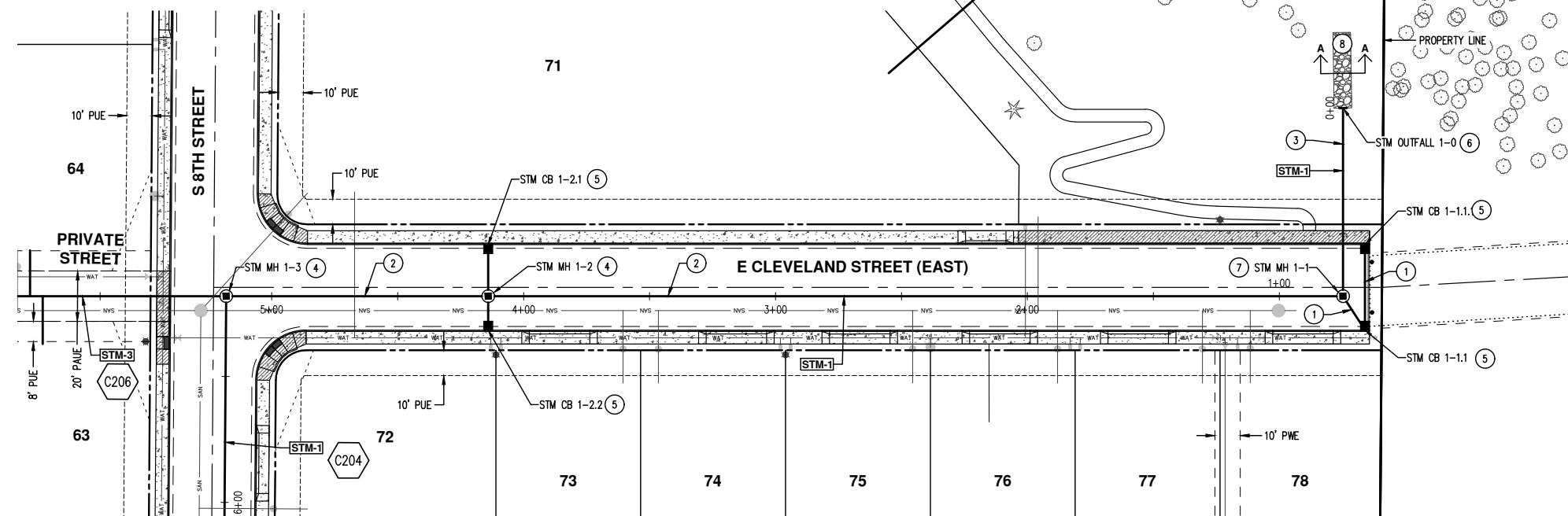
- PUE = PUBLIC UTILITY EASEMENT
- SDE = PUBLIC STORM DRAINAGE EASEMENT
- SSE = PUBLIC SANITARY SEWER EASEMENT
- PWE = PUBLIC WATER EASEMENT
- EAE = EMERGENCY ACCESS EASEMENT
- PAUE = PUBLIC ACCESS & UTILITY EASEMENT
- SWE = SIDEWALK EASEMENT
- TPAE = TEMPORARY PUBLIC ACCESS EASEMENT
- PRSS = PRIVATE SANITARY SEWER EASEMENT



AKS DRAWING FILE: 7395-01_C200_STM.DWG | LAYOUT: C201

Appendix I: Surcharge Calculations and HGL Exhibit

CB	TYPE	TOP OF CURB ELEV	IE OUT	SUMP	PIPE	SLOPE	LENGTH	DS MH	STATION & OFFSET	ALIGNMENT
STM CB 1-1.1	CB DET 310	165.99 165.95	161.96 161.91	1.0' 1.1'	10" PVC	0.1844 0.2002	16.08 LF	STM MH 1-1	14+57.07 17.00 R	E CLEVELAND STREET (EAST)
STM CB 1-1.1.1	CB DET 310	165.99 165.93	162.50 162.27	1.0' 1.5'	10" PVC	0.0190 0.0085	34.00 LF	STM CB 1-1.1	14+57.07 17.00 L	E CLEVELAND STREET (EAST)
STM CB 1-2.1	CB DET 310	165.10 165.11	161.80 161.64	1.0' 1.5'	10" PVC	0.1220 0.1209	20.51 LF	STM MH 1-2	11+09.00 17.00 L	E CLEVELAND STREET (EAST)
STM CB 1-2.2	CB DET 310	165.10 165.16	161.46 161.33	1.0' 1.4'	10" PVC	0.1690 0.1594	13.49 LF	STM MH 1-2	11+09.00 17.00 R	E CLEVELAND STREET (EAST)

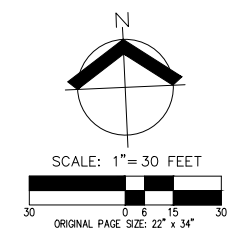


- NOTES:**
- MANHOLE COVERS SHALL BE INSTALLED PER STD. DWG. 405, SHEET C210.
 - PIPE BEDDING AND TRENCH BACKFILL SHALL BE PER STD. DWG. 301, SHEET C210.
 - CATCH BASINS SHALL BE INSTALLED PER STD. DWG. 310 AND 312, SHEET C210.
 - ALL LOTS SHALL HAVE 3" CURB AND GUTTER WEEP HOLES INSTALLED 5 FEET FROM EACH PROPERTY LINE PER STD. DWG. 210, SHEET C210.
 - STANDARD MANHOLES SHALL BE INSTALLED PER STD. DWG. 401, SHEET C210.
 - FLAT TOP MANHOLES SHALL BE INSTALLED PER STD. DWG. 402, SHEET C210.

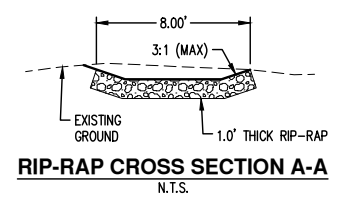
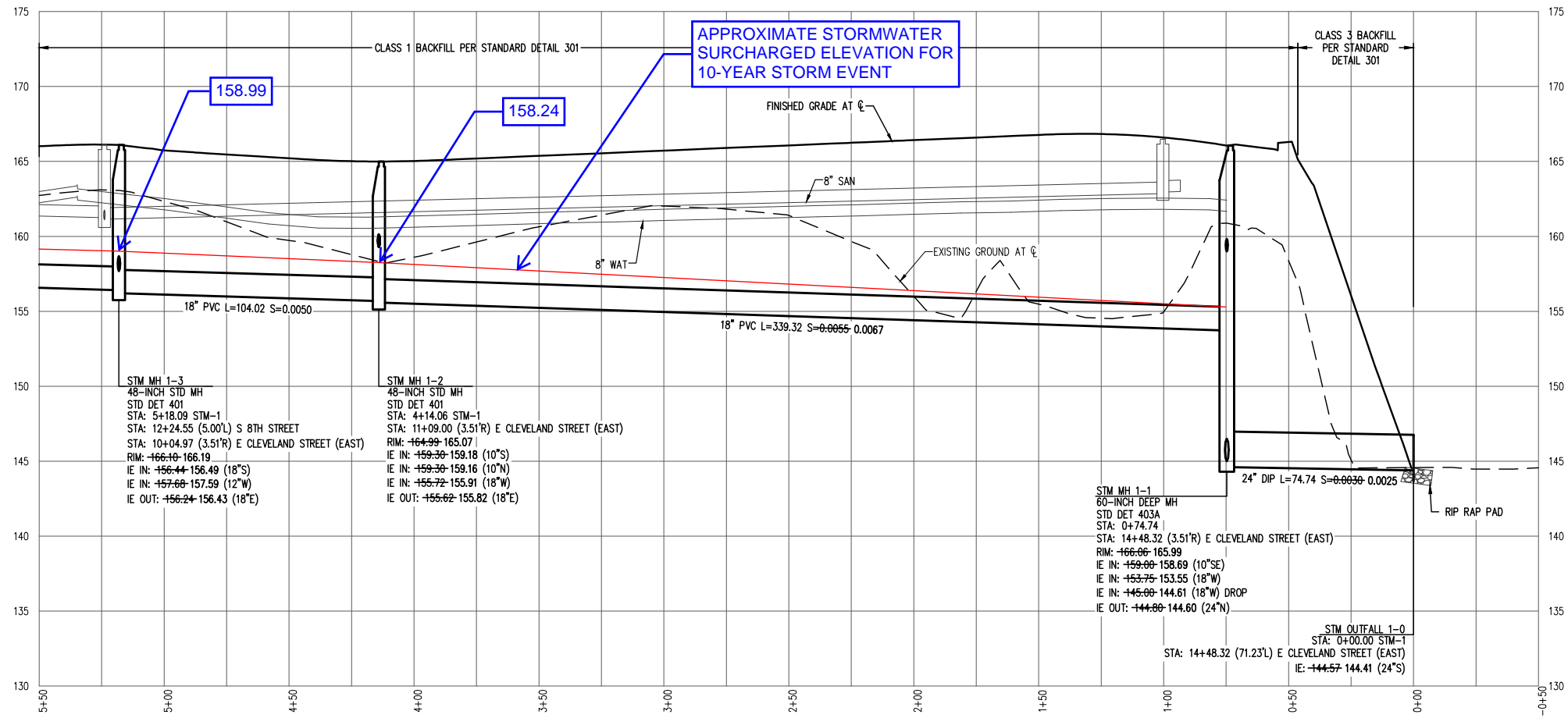
- KEY NOTES:**
- CONSTRUCT 10-INCH STORM DRAINAGE PIPE.
 - CONSTRUCT 18-INCH STORM DRAINAGE PIPE.
 - CONSTRUCT 24-INCH STORM DRAINAGE PIPE.
 - INSTALL STANDARD MANHOLE PER STD. DWG. 401, SHEET C210.
 - INSTALL CATCH BASIN PER STD. DWG. 310, SHEET C210.
 - INSTALL CL-200 RIP-RAP PAD OVER GEOTEXTILE FABRIC AT STORM DRAINAGE OUTLET, L=30.0', W=8.0', D=1.0', H=3.4'.
 - CONSTRUCT DEEP MANHOLE WITH DROP PER STD. DWG. 403A AND DWG. 060, SHEET C211.
 - CONTRACTOR SHALL GRADE OUTFALL TO DRAIN DIRECTLY NORTH TO HAWN CREEK.

EASEMENT LEGEND

- PUE = PUBLIC UTILITY EASEMENT
- SDE = PUBLIC STORM DRAINAGE EASEMENT
- SSE = PUBLIC SANITARY SEWER EASEMENT
- PWE = PUBLIC WATER EASEMENT
- EAE = EMERGENCY ACCESS EASEMENT
- PAE = PUBLIC ACCESS EASEMENT
- PAUE = PUBLIC ACCESS & UTILITY EASEMENT
- SWE = SIDEWALK EASEMENT
- TPAE = TEMPORARY PUBLIC ACCESS EASEMENT
- PRSE = PRIVATE SANITARY SEWER EASEMENT



CONTRACTOR SHALL CONTACT PROJECT ENGINEER TO FIELD VERIFY EXACT LOCATION OF STORM OUTFALL PRIOR TO INSTALLATION.



STM-1 - PROFILE
 STM-1 STA: -0+50 TO 5+50
 HOR: 1" = 30'
 VERT: 1" = 5'

PROFILE STATIONING AND ELEVATIONS ARE BASED ON PIPE CENTERLINE UNLESS OTHERWISE NOTED.

AKS
 AKS ENGINEERING & FORESTRY, LLC
 12965 SW HERMAN RD, STE 100
 TUALATIN, OR 97062
 503.563.6151
 WWW.AKS-ENG.COM

JR MEADOWS NO. 2 AS-BUILTS
 OREGON
 CARLTON
 YAMHILL COUNTY TAX MAP 3 4 22

E CLEVELAND ST (E) STORM DRAINAGE PLAN & PROFILE

DESIGNED BY: AID
 DRAWN BY: NLB
 MANAGED BY: MBH
 CHECKED BY: RSW
 DATE: 4/21/2022

REGISTERED PROFESSIONAL ENGINEER
 58542 P.E.
 REVIEW COPY
 MARGHERY B. HURLEY
 MAY 8, 2008
 RENEWAL DATE: 6/30/25

JOB NUMBER: 7395-01
 SHEET: C203

AKS DRAWING FILE: 7395-01_C200_STM.DWG | LAYOUT: C203

AS-BUILT DISCLAIMER:
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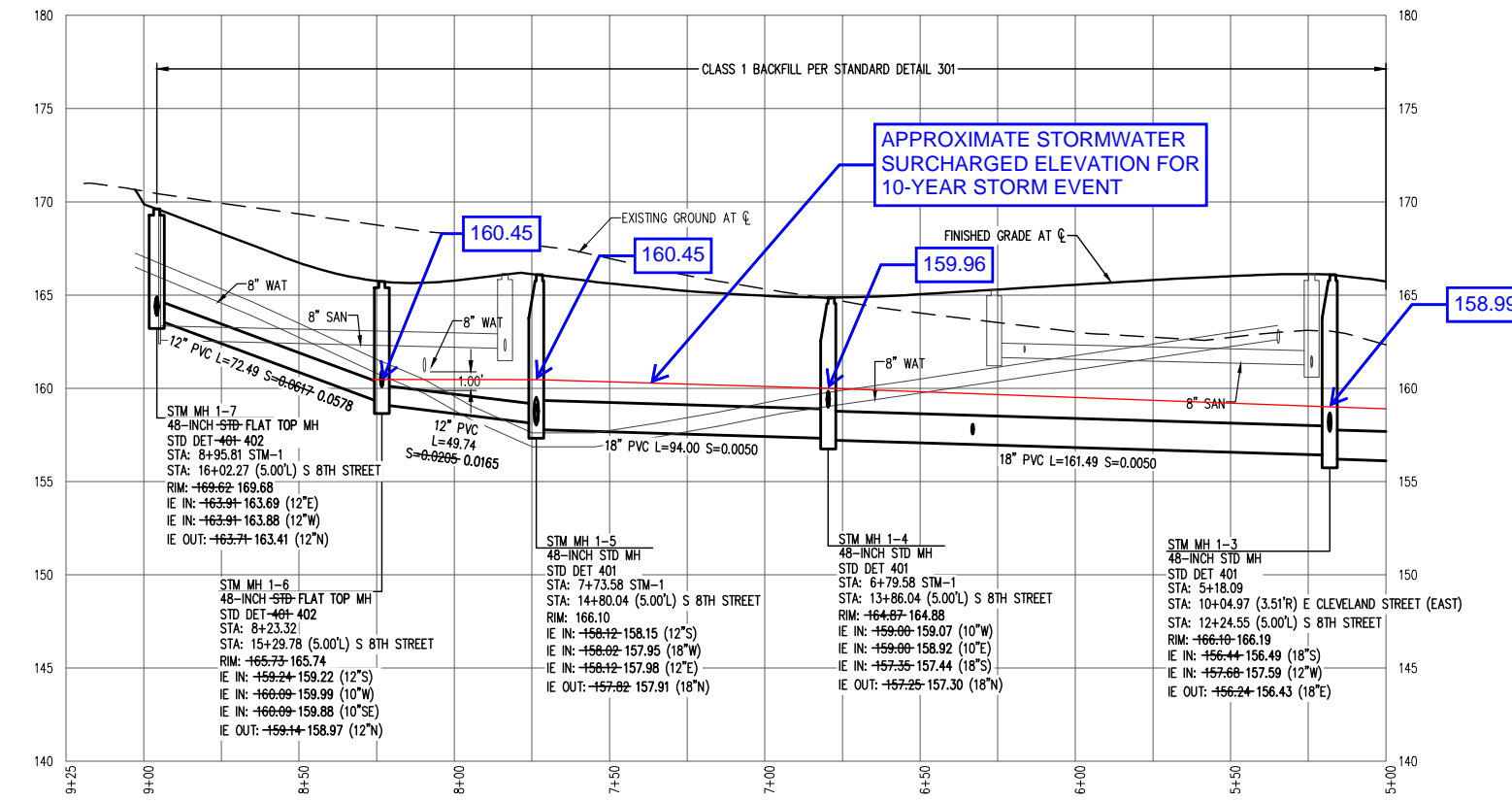
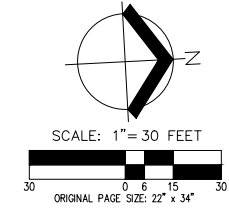
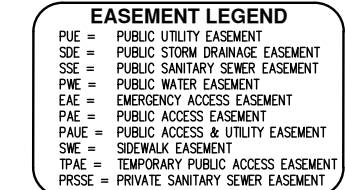
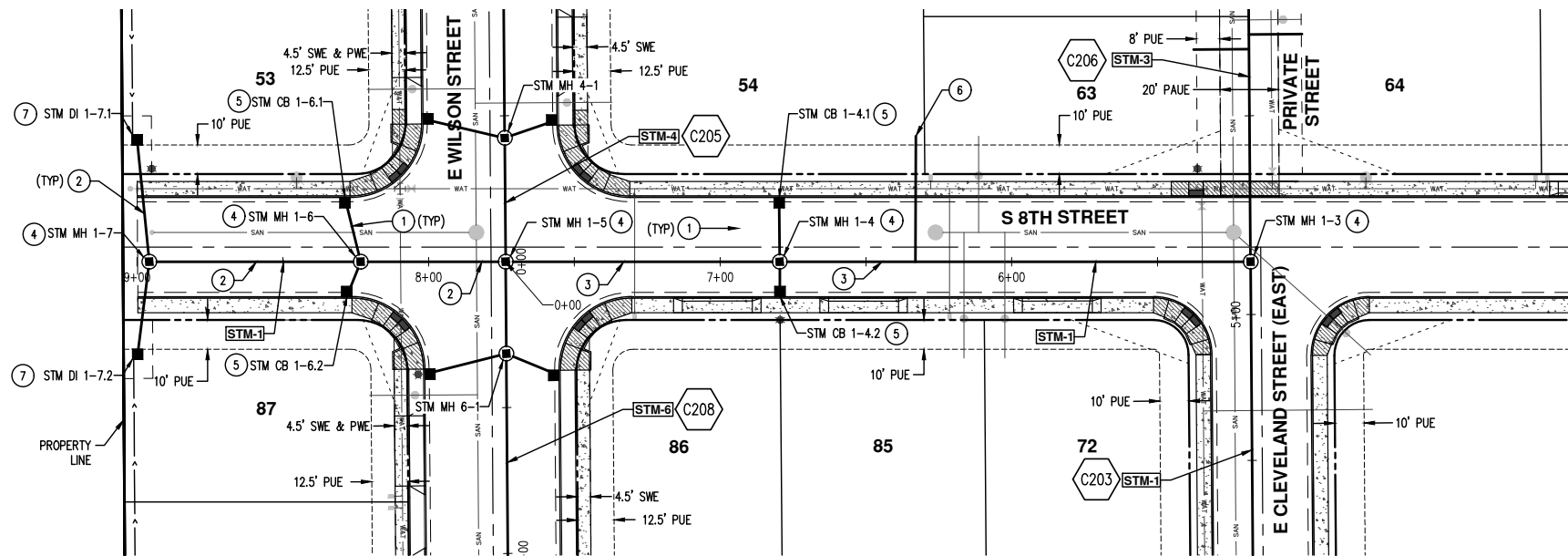
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NOTES:

- A. MANHOLE COVERS SHALL BE INSTALLED PER STD. DWG. 405, SHEET C210.
- B. PIPE BEDDING AND TRENCH BACKFILL SHALL BE PER STD. DWG. 301, SHEET C210.
- C. CATCH BASINS SHALL BE INSTALLED PER STD. DWG. 310 AND 312, SHEET C210.
- D. ALL LOTS SHALL HAVE 3" CURB AND GUTTER WEEP HOLES INSTALLED 5 FEET FROM EACH PROPERTY LINE PER STD. DWG. 210, SHEET C210.
- E. STANDARD MANHOLES SHALL BE INSTALLED PER STD. DWG. 401, SHEET C210.
- F. FLAT TOP MANHOLES SHALL BE INSTALLED PER STD. DWG. 402, SHEET C210.

KEY NOTES:

- 1. CONSTRUCT 10-INCH STORM DRAINAGE PIPE.
- 2. CONSTRUCT 12-INCH STORM DRAINAGE PIPE.
- 3. CONSTRUCT 18-INCH STORM DRAINAGE PIPE.
- 4. INSTALL STANDARD MANHOLE PER STD. DWG. 401, SHEET C210.
- 5. INSTALL CATCH BASIN PER STD. DWG. 310, SHEET C210.
- 6. INSTALL STORM DRAINAGE LATERAL PER STD. DWG. 415, SHEET C211.
- 7. INSTALL TYPE 3 DITCH INLET PER STD. DWG. 313, SHEET C210.



STM-1 - PROFILE
 STM-1 STA: 5+00 TO 9+25
 HOR: 1" = 30'
 VERT: 1" = 5'

PROFILE STATIONING AND ELEVATIONS ARE BASED ON PIPE CENTERLINE UNLESS OTHERWISE NOTED.

STORMWATER DITCH INLET TABLE

INLET	TYPE	TOP OF GRATE ELEV	IE OUT	PIPE	SLOPE	LENGTH	DS MH	STATION & OFFSET	ALIGNMENT
STM DI 1-7.1	DI DET 313	+178.08 +169.90	+164.33 +164.48	12" PVC	-0.0100 0.0143	41.96 LF	STM MH 1-7	16+06.45 36.75 R	S 8TH STREET
STM DI 1-7.2	DI DET 313	+168.00 +167.97	+164.23 +164.38	12" PVC	-0.0099 0.0219	32.00 LF	STM MH 1-7	16+06.27 36.75 L	S 8TH STREET

STORMWATER CATCH BASIN TABLE

CB	TYPE	TOP OF CURB ELEV	IE OUT	SUMP	PIPE	SLOPE	LENGTH	DS MH	STATION & OFFSET	ALIGNMENT
STM CB 1-4.1	CB DET 310	+168.09 +165.05	+161.99 +161.76	+1.6'	10" PVC	-0.1314 0.1223	22.00 LF	STM MH 1-4	13+86.21 17.00 R	S 8TH STREET
STM CB 1-4.2	CB DET 310	+168.09 +165.04	+161.99 +161.45	+1.6'	10" PVC	-0.2408 0.2108	12.00 LF	STM MH 1-4	13+85.95 17.00 L	S 8TH STREET
STM CB 1-6.1	CB DET 310	+166.06 +165.88	+160.54 +160.23	1.0'	10" PVC	-0.0289 0.0106	22.65 LF	STM MH 1-6	15+35.16 17.00 R	S 8TH STREET
STM CB 1-6.2	CB DET 310	+166.06 +165.92	+162.56 +162.24	+1.0'	10" PVC	-0.1918 0.1829	12.90 LF	STM MH 1-6	15+34.51 17.00 L	S 8TH STREET

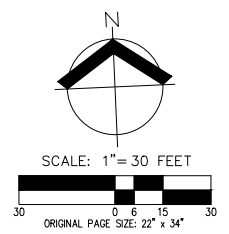
STORMWATER LATERAL TABLE*

LOT	STATION	ALIGNMENT	PIPE DIA./TYPE	LENGTH	SLOPE	COVER AT LOT	IE AT LOT	IE AT MAINLINE
54	6+33.06	STM-1	6" PVC	43.02	0.0510	6.3	159.75	157.56

*NOT AS-BUILT

AKS DRAWING FILE: 7395-01_C200_STM.DWG | LAYOUT: C204

STORMWATER CATCH BASIN TABLE										
CB	TYPE	TOP OF CURB ELEV	IE OUT	SUMP	PIPE	SLOPE	LENGTH	DS MH	STATION & OFFSET	ALIGNMENT
STM CB 2-3.1	CB DET 310	167.10 167.06	164.24 164.47	1.0' 2.5'	10" DIP	0.0050 0.0166	22.32 LF	STM MH 2-3	10+49.32 17.00 R	E CLEVELAND STREET (WEST)
STM CB 2-3.2	CB DET 310	167.10 167.06	164.19 164.25	1.0' 2.1'	10" DIP	0.0050 0.0109	12.87 LF	STM MH 2-3	10+50.19 17.00 L	E CLEVELAND STREET (WEST)

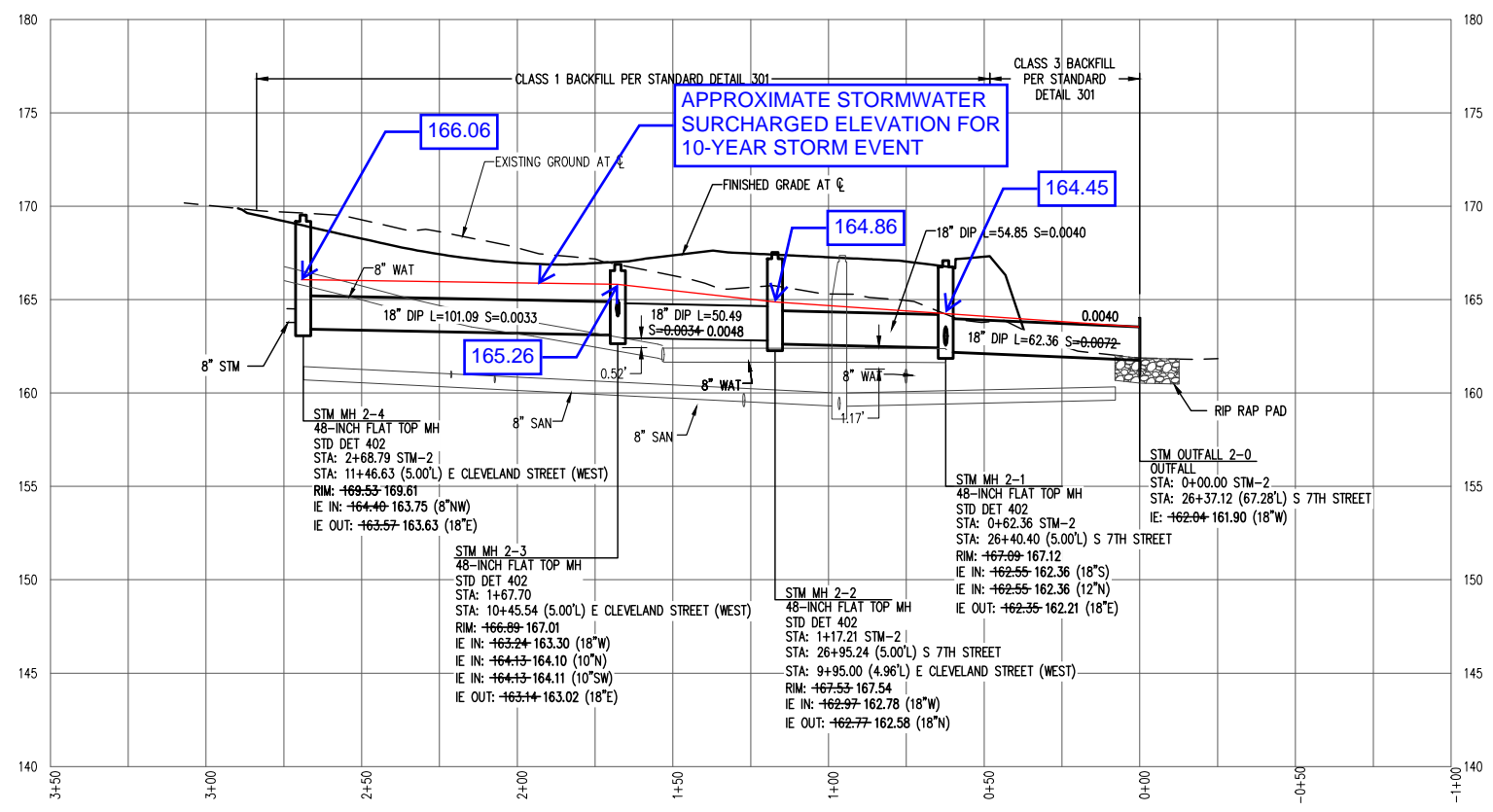
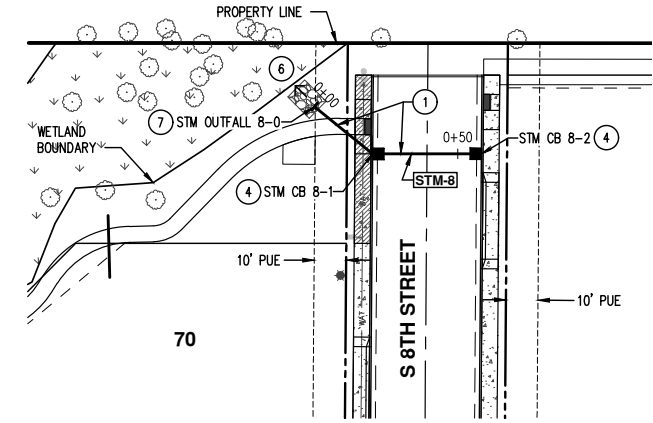
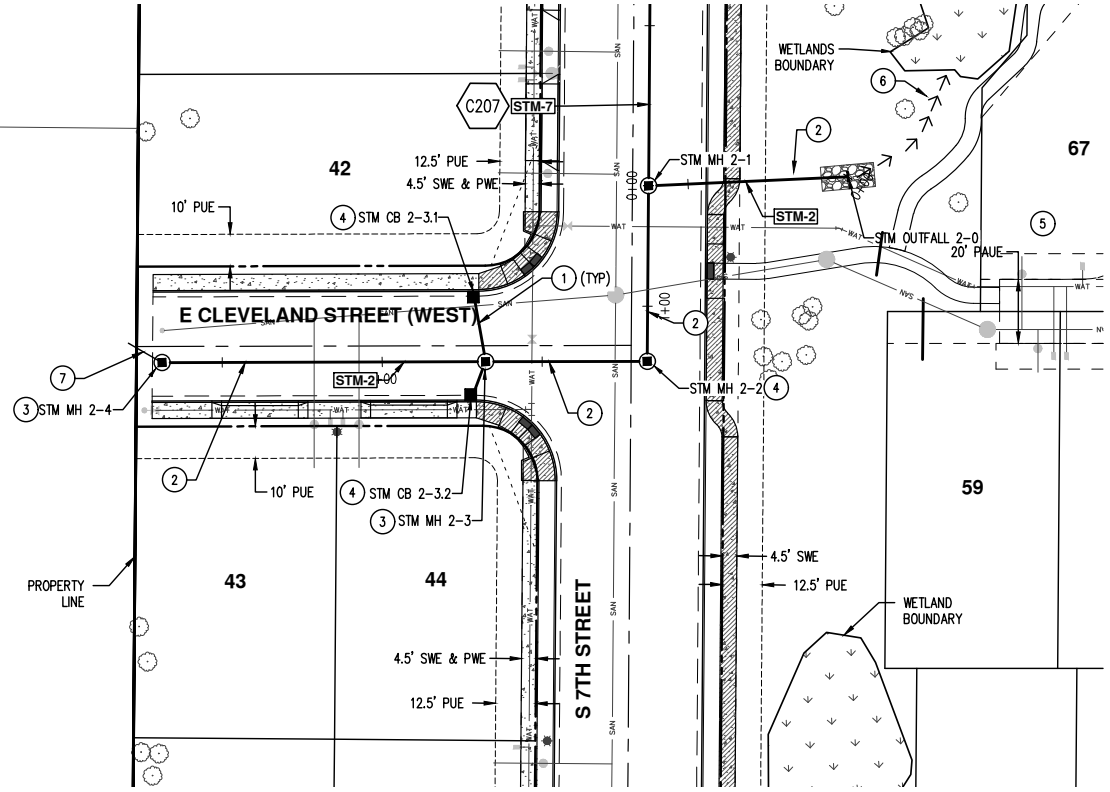


- NOTES:**
- MANHOLE COVERS SHALL BE INSTALLED PER STD. DWG. 405, SHEET C210.
 - PIPE BEDDING AND TRENCH BACKFILL SHALL BE PER STD. DWG. 301, SHEET C210.
 - CATCH BASINS SHALL BE INSTALLED PER STD. DWG. 310 AND 312, SHEET C210.
 - ALL LOTS SHALL HAVE 3" CURB AND GUTTER WEEP HOLES INSTALLED 5 FEET FROM EACH PROPERTY LINE PER STD. DWG. 210, SHEET C210.
 - STANDARD MANHOLES SHALL BE INSTALLED PER STD. DWG. 401, SHEET C210.
 - FLAT TOP MANHOLES SHALL BE INSTALLED PER STD. DWG. 402, SHEET C210.

- KEY NOTES:**
- CONSTRUCT 10-INCH STORM DRAINAGE PIPE.
 - CONSTRUCT 18-INCH STORM DRAINAGE PIPE.
 - INSTALL FLAT TOP MANHOLE PER STD. DWG. 402, SHEET C210.
 - INSTALL CATCH BASIN PER STD. DWG. 310, SHEET C210.
 - INSTALL CL-200 RIP-RAP PAD OVER GEOTEXTILE FABRIC AT STORM DRAINAGE OUTLET, L=10.0', W=7.5', D=1.0', H=2.8'.
 - CONTRACTOR SHALL GRADE TO DRAIN TO WETLAND. CONTRACTOR SHALL NOT DISTURB WETLAND.
 - INSTALL 8" STORM DRAINAGE PIPE.

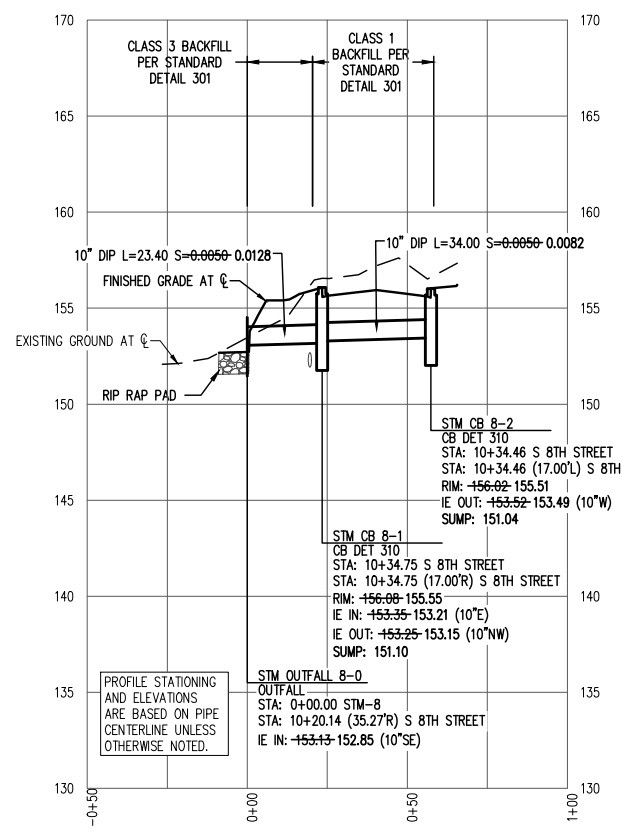
- EASEMENT LEGEND**
- PUE = PUBLIC UTILITY EASEMENT
 - SDE = PUBLIC STORM DRAINAGE EASEMENT
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CONTRACTOR SHALL CONTACT PROJECT ENGINEER TO FIELD VERIFY EXACT LOCATION OF STORM OUTFALL PRIOR TO INSTALLATION.



STM-2 - PROFILE
 STM-2 STA: -1+00 TO 3+50
 HOR: 1" = 30'
 VERT: 1" = 5'

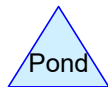
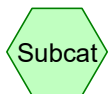
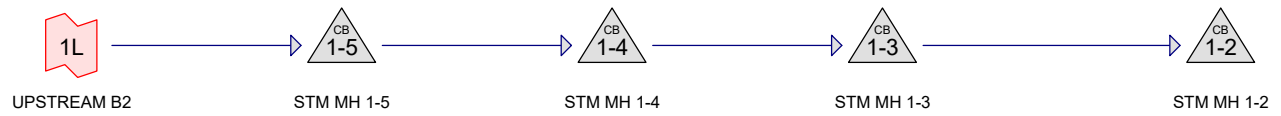
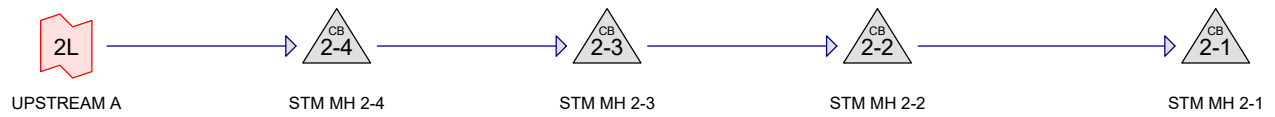
PROFILE STATIONING AND ELEVATIONS ARE BASED ON PIPE CENTERLINE UNLESS OTHERWISE NOTED.



STM-8 - PROFILE
 STM-8 STA: -0+50 TO 1+00
 HOR: 1" = 30'
 VERT: 1" = 5'

PROFILE STATIONING AND ELEVATIONS ARE BASED ON PIPE CENTERLINE UNLESS OTHERWISE NOTED.

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Routing Diagram for 4206 Surcharged Calculation
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4206 Surcharged Calculation

Prepared by AKS Engineering & Forestry, LLC

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Page 2

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1-2	155.82	153.55	339.3	0.0067	0.009	18.0	0.0	0.0
2	1-3	156.43	155.91	104.0	0.0050	0.009	18.0	0.0	0.0
3	1-4	157.30	156.49	161.5	0.0050	0.009	18.0	0.0	0.0
4	1-5	157.91	157.44	94.0	0.0050	0.009	18.0	0.0	0.0
5	2-1	162.21	161.90	62.4	0.0050	0.009	18.0	0.0	0.0
6	2-2	162.58	162.36	54.8	0.0040	0.009	18.0	0.0	0.0
7	2-3	163.02	162.78	50.5	0.0048	0.009	18.0	0.0	0.0
8	2-4	163.63	163.30	101.1	0.0033	0.009	18.0	0.0	0.0

4206 Surcharged Calculation*Rainfall Duration=41 min, Inten=0.84 in/hr*

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Time span=0.00-3.00 hrs, dt=0.01 hrs, 301 points

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 1-2: STM MH 1-2	Peak Elev=158.24'	Inflow=12.55 cfs	135,992 cf
18.0" Round Culvert n=0.009 L=339.3' S=0.0067 '/	Outflow=12.55 cfs	135,992 cf	
Pond 1-3: STM MH 1-3	Peak Elev=158.99'	Inflow=12.55 cfs	135,992 cf
18.0" Round Culvert n=0.009 L=104.0' S=0.0050 '/	Outflow=12.55 cfs	135,992 cf	
Pond 1-4: STM MH 1-4	Peak Elev=159.96'	Inflow=12.55 cfs	135,992 cf
18.0" Round Culvert n=0.009 L=161.5' S=0.0050 '/	Outflow=12.55 cfs	135,992 cf	
Pond 1-5: STM MH 1-5	Peak Elev=160.45'	Inflow=12.55 cfs	135,992 cf
18.0" Round Culvert n=0.009 L=94.0' S=0.0050 '/	Outflow=12.55 cfs	135,992 cf	
Pond 2-1: STM MH 2-1	Peak Elev=164.45'	Inflow=11.30 cfs	122,447 cf
18.0" Round Culvert n=0.009 L=62.4' S=0.0050 '/	Outflow=11.30 cfs	122,447 cf	
Pond 2-2: STM MH 2-2	Peak Elev=164.86'	Inflow=11.30 cfs	122,447 cf
18.0" Round Culvert n=0.009 L=54.8' S=0.0040 '/	Outflow=11.30 cfs	122,447 cf	
Pond 2-3: STM MH 2-3	Peak Elev=165.26'	Inflow=11.30 cfs	122,447 cf
18.0" Round Culvert n=0.009 L=50.5' S=0.0048 '/	Outflow=11.30 cfs	122,447 cf	
Pond 2-4: STM MH 2-4	Peak Elev=166.06'	Inflow=11.30 cfs	122,447 cf
18.0" Round Culvert n=0.009 L=101.1' S=0.0033 '/	Outflow=11.30 cfs	122,447 cf	
Link 1L: UPSTREAMB2	Manual Hydrograph	Inflow=12.55 cfs	135,992 cf
		Primary=12.55 cfs	135,992 cf
Link 2L: UPSTREAMA	Manual Hydrograph	Inflow=11.30 cfs	122,447 cf
		Primary=11.30 cfs	122,447 cf

4206 Surcharged Calculation*Rainfall Duration=41 min, Inten=0.84 in/hr*

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Summary for Pond 1-2: STM MH 1-2

RIM: 165.07

Inflow	=	12.55 cfs @	0.00 hrs,	Volume=	135,992 cf
Outflow	=	12.55 cfs @	0.00 hrs,	Volume=	135,992 cf, Atten= 0%, Lag= 0.0 min
Primary	=	12.55 cfs @	0.00 hrs,	Volume=	135,992 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 158.24' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	155.82'	18.0" Round Culvert L= 339.3' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 155.82' / 153.55' S= 0.0067 '/ Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=12.55 cfs @ 0.00 hrs HW=158.24' (Free Discharge)↑**1=Culvert** (Barrel Controls 12.55 cfs @ 7.10 fps)

4206 Surcharged Calculation*Rainfall Duration=41 min, Inten=0.84 in/hr*

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Summary for Pond 1-3: STM MH 1-3

RIM: 166.19

Inflow	=	12.55 cfs @	0.00 hrs,	Volume=	135,992 cf
Outflow	=	12.55 cfs @	0.00 hrs,	Volume=	135,992 cf, Atten= 0%, Lag= 0.0 min
Primary	=	12.55 cfs @	0.00 hrs,	Volume=	135,992 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 158.99' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	156.43'	18.0" Round Culvert L= 104.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 156.43' / 155.91' S= 0.0050 '/ Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=12.55 cfs @ 0.00 hrs HW=158.99' (Free Discharge)↑**1=Culvert** (Barrel Controls 12.55 cfs @ 7.10 fps)

4206 Surcharged Calculation

Rainfall Duration=41 min, Inten=0.84 in/hr

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Summary for Pond 1-4: STM MH 1-4

RIM: 164.88

Inflow	=	12.55 cfs @	0.00 hrs,	Volume=	135,992 cf
Outflow	=	12.55 cfs @	0.00 hrs,	Volume=	135,992 cf, Atten= 0%, Lag= 0.0 min
Primary	=	12.55 cfs @	0.00 hrs,	Volume=	135,992 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 159.96' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	157.30'	18.0" Round Culvert L= 161.5' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 157.30' / 156.49' S= 0.0050 '/ Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=12.55 cfs @ 0.00 hrs HW=159.96' (Free Discharge)↑**1=Culvert** (Barrel Controls 12.55 cfs @ 7.10 fps)

4206 Surcharged Calculation*Rainfall Duration=41 min, Inten=0.84 in/hr*

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Summary for Pond 1-5: STM MH 1-5

RIM: 166.10

Inflow	=	12.55 cfs @	0.00 hrs,	Volume=	135,992 cf
Outflow	=	12.55 cfs @	0.00 hrs,	Volume=	135,992 cf, Atten= 0%, Lag= 0.0 min
Primary	=	12.55 cfs @	0.00 hrs,	Volume=	135,992 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 160.45' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	157.91'	18.0" Round Culvert L= 94.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 157.91' / 157.44' S= 0.0050 '/ Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=12.55 cfs @ 0.00 hrs HW=160.45' (Free Discharge)↑**1=Culvert** (Barrel Controls 12.55 cfs @ 7.10 fps)

4206 Surcharged Calculation*Rainfall Duration=41 min, Inten=0.84 in/hr*

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Summary for Pond 2-1: STM MH 2-1

RIM: 167.12

Inflow	=	11.30 cfs @	0.00 hrs,	Volume=	122,447 cf
Outflow	=	11.30 cfs @	0.00 hrs,	Volume=	122,447 cf, Atten= 0%, Lag= 0.0 min
Primary	=	11.30 cfs @	0.00 hrs,	Volume=	122,447 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 164.45' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	162.21'	18.0" Round Culvert L= 62.4' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 162.21' / 161.90' S= 0.0050 '/ Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=11.30 cfs @ 0.00 hrs HW=164.45' (Free Discharge)↑**1=Culvert** (Barrel Controls 11.30 cfs @ 6.39 fps)

4206 Surcharged Calculation*Rainfall Duration=41 min, Inten=0.84 in/hr*

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Summary for Pond 2-2: STM MH 2-2

RIM: 167.54

Inflow	=	11.30 cfs @	0.00 hrs,	Volume=	122,447 cf
Outflow	=	11.30 cfs @	0.00 hrs,	Volume=	122,447 cf, Atten= 0%, Lag= 0.0 min
Primary	=	11.30 cfs @	0.00 hrs,	Volume=	122,447 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 164.86' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	162.58'	18.0" Round Culvert L= 54.8' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 162.58' / 162.36' S= 0.0040 '/ Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=11.30 cfs @ 0.00 hrs HW=164.86' (Free Discharge)↑**1=Culvert** (Barrel Controls 11.30 cfs @ 6.39 fps)

4206 Surcharged Calculation

Rainfall Duration=41 min, Inten=0.84 in/hr

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Summary for Pond 2-3: STM MH 2-3

RIM: 167.01

Inflow	=	11.30 cfs @	0.00 hrs,	Volume=	122,447 cf
Outflow	=	11.30 cfs @	0.00 hrs,	Volume=	122,447 cf, Atten= 0%, Lag= 0.0 min
Primary	=	11.30 cfs @	0.00 hrs,	Volume=	122,447 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 165.26' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	163.02'	18.0" Round Culvert L= 50.5' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 163.02' / 162.78' S= 0.0048 '/ Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=11.30 cfs @ 0.00 hrs HW=165.26' (Free Discharge)

↑1=Culvert (Barrel Controls 11.30 cfs @ 6.39 fps)

4206 Surcharged Calculation

Rainfall Duration=41 min, Inten=0.84 in/hr

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Page 11

Summary for Pond 2-4: STM MH 2-4

RIM: 169.61

Inflow	=	11.30 cfs @	0.00 hrs,	Volume=	122,447 cf
Outflow	=	11.30 cfs @	0.00 hrs,	Volume=	122,447 cf, Atten= 0%, Lag= 0.0 min
Primary	=	11.30 cfs @	0.00 hrs,	Volume=	122,447 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 166.06' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	163.63'	18.0" Round Culvert L= 101.1' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 163.63' / 163.30' S= 0.0033 '/ Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=11.30 cfs @ 0.00 hrs HW=166.06' (Free Discharge)↑**1=Culvert** (Barrel Controls 11.30 cfs @ 6.39 fps)

4206 Surcharged Calculation*Rainfall Duration=41 min, Inten=0.84 in/hr*

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Page 12

Summary for Link 1L: UPSTREAM B2

Inflow = 12.55 cfs @ 0.00 hrs, Volume= 135,992 cf
Primary = 12.55 cfs @ 0.00 hrs, Volume= 135,992 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Constant Inflow= 12.55 cfs

4206 Surcharged Calculation*Rainfall Duration=41 min, Inten=0.84 in/hr*

Prepared by AKS Engineering & Forestry, LLC

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Page 13

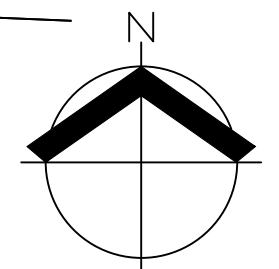
Summary for Link 2L: UPSTREAM A

Inflow = 11.30 cfs @ 0.00 hrs, Volume= 122,447 cf
Primary = 11.30 cfs @ 0.00 hrs, Volume= 122,447 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Constant Inflow= 11.30 cfs

Appendix J: Stormwater Routing Diagram



SCALE: 1" = 200 FEET



ORIGINAL PAGE SIZE: 11" x 17"

DATE: 09/26/2023

PRELIMINARY STORMWATER ROUTING DIAGRAM

EXHIBIT

J

AKS ENGINEERING & FORESTRY, LLC
 12965 SW HERMAN RD, STE 100
 TUALATIN, OR 97062
 503.563.6151 WWW.AKS-ENG.COM



DRWN: NRA
 CHKD: CMS
 AKS JOB:
 4206



Exhibit D: Transportation Impact Analysis (Updated September 2023)

Memorandum

To: **Scott Whyte, AICP**
Mid-Willamette Valley Council of Governments

From: **Daniel Stumpf, PE**

Date: **September 26, 2023**

Subject: **S 2nd Street Subdivision Transportation Impact Study** **RENEWS: 6/30/2024**
City of Carlton Review Comments – Comments Response & Addendum



Introduction

This memorandum serves as a response to an Incomplete Notice received from the City of Carlton pertaining to the *Second Street Subdivision* application (Case File SUB 2023-02) and may also serve as an addendum to the project's Transportation Impact Study (TIS).

Relevant transportation related comments and advisory notes received are *italicized* and **bolded** with responses following.

City of Carlton Comments

Comment #4, Page 2

Page 40 of written statement and Traffic Study (observation by Gordon Munro, City Engineer). 17.100.070.B identifies the thresholds and requirements for conducting a traffic study. While a traffic study is provided, there is one street (Second Street, existing) not addressed by the study. Staff observe how certain off-site improvements are proposed on Second Street, which will likely direct some traffic from the subdivision to Second Street over to Polk. Staff observe how the TIA does not study the intersection at Second/Polk for forecasted AM / PM peak trip generation / movement / distribution. As Second Street is currently sub-standard (i.e., less paving and improvement levels comparatively to Street Standards of CMC 17.64 and city Street Design Manual for construction) the impact of additional trips on existing improvement should be studied. Also, staff observe the traffic study to account for certain street improvements approved for the JR Meadows No. 3 subdivision, but these improvements are not under construction. In part, the traffic study assumes the improvement of JR Meadows 3 to be constructed.

To evaluate future operation of the S 2nd Street at E Polk Street intersection with buildout of the proposed subdivision, the following methodology to develop traffic volumes and analyse the intersection was used.

Traffic Volumes

To develop existing year traffic volumes at the intersection of S 2nd Street at E Polk Street, minor-street (i.e. S 2nd Street) turning movement volumes were estimated utilizing data from land use codes 110, *General Light Industrial*, and 210, *Single-Family Detached Housing*, in the *Trip Generation Manual*¹. Given the number of existing residential houses and businesses which would reasonably travel through the intersection to access either S Pine Street or E Main Street, the following were assumed:

- Seven existing houses currently take access to the south leg of the intersection. This results in the generation of 5 morning peak hour trips (1 entering and 4 exiting) and 7 evening peak hour trips (4 entering and 3 exiting).
- Although highly conservative, all residences and industrial/commercial uses with direct access to E Washington Street, E Harrison Street, E Taft Street, S 1st Street, and S 2nd Street to the north/west of E Polk Street and S 3rd Street were assumed to utilize the north intersection leg of S 2nd Street. Specifically, the following were assumed:
 - 41 dwelling units (29 single-family houses and 6 duplexes)
 - An approximate 9,800 square foot light industrial building

The above results in the generation of 36 morning peak hour trips (13 entering and 23 exiting) and 45 evening peak hour trips (25 entering and 20 exiting).

Consistent with the TIS, approximately 60% of these trips at the S 2nd Street at E Polk Street intersection were estimated to travel to/from the west along E Polk Street while the remaining 40% would travel to/from the east.

To estimate major-street (i.e. E Polk Street) volumes at the intersection, volumes were balanced with the adjacent study intersections of S Pine Street at E/W Polk Street and S 3rd Street at E Polk Street, where the higher of directional volumes from each adjacent study intersection were utilized. The following were referenced to develop these volumes:

- Both existing year and future year 2026 background volumes at the intersection were estimated using Figures 4 and 5 from the TIS.
- To estimated future year 2026 volumes at the intersection with the proposed development constructed, site trip assignment as depicted in Figure 3 of the TIS were applied to the estimated year 2026 background volumes at the intersection of S 2nd Street at E Polk Street.
- To estimated future year 2026 volumes at the intersection with both the proposed development and the JR Meadows No. 3 Subdivision constructed, additional trips from the JR Meadows project were added as shown in Figure 7 of the TIS.

Trip generation calculations for the existing land uses which may potentially impact the minor-street approaches of the S 2nd Street at E Polk Street intersection are included as an attachment to this memorandum. A figure depicting existing year and future year traffic volume projections at the intersection is also included in the attachments.

¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.



Capacity Analysis

Utilizing peak hour factors, heavy vehicle percentages, and other input parameters similar to those recorded for the intersection of S 3rd Street at E Polk Street, a capacity and delay analysis was conducted for the intersection of S 2nd Street at E Polk Street in a manner consistent to the methodologies used in the TIS.

The LOS, delay, and v/c ratio results of the capacity analysis are shown in Table 1 for the morning and evening peak hours. For the two-way stop-controlled intersection, the highest minor-street delay, LOS, and v/c ratio at the intersection was reported regardless of approach. Detailed calculations are included as an attachment to this memorandum.

Table 1: Intersection Capacity Analysis Summary

	AM Peak Hour			PM Peak Hour		
	LOS	Delay (s)	v/c	LOS	Delay (s)	v/c
A. S 2nd Street at E Polk Street						
Existing Conditions	A	10	0.05	A	9	0.03
2026 Background Conditions	A	10	0.05	A	9	0.03
2026 Buildout Conditions	B	10	0.05	A	9	0.03
2026 Buildout Conditions w/ JRM No. 3	B	11	0.06	A	10	0.03

Table Notes: **BOLDED** text indicates intersection operation above jurisdictional standards.

The intersection of S 2nd Street at E Polk Street is projected to operate acceptably through the 2026 site buildout year, with or without the nearby JR Meadows No. 3 Subdivision constructed. No capacity related mitigation is necessary or recommended at the intersection as part of the S 2nd Street Subdivision application.

Crash History Review

According to ODOT's Crash Data System and online TransGIS website, there were no reported crashes at the intersection of S 2nd Street at E Polk Street from between January 2016 through December 2021 (six years). Therefore, the intersection is expected to operate safely by year 2026 with respect to potential crashes. No safety related mitigation is necessary or recommended at the intersection as part of the S 2nd Street Subdivision application.

JR Meadows No. 3 Construction

The construction of JR Meadows No. 3 Subdivision to the east of the project site is expected to occur prior to the development of the S 2nd Street Subdivision project. Utility connections to the S 2nd Street Subdivision will be provided through the JR Meadows No. 3 Subdivision, therefore, JR Meadows No. 3 will need to be largely constructed prior to full development/occupancy of the S 2nd Street Subdivision.



Advisory Notes #4, Page 3

S. 2nd Street at E Polk Street (observation by Gordon Munro, City Engineer). As mentioned above, staff observe the traffic study to account for certain street improvements approved for the JR Meadows 3 (via Preliminary Subdivision) but not constructed or under construction. P. 4 (Summary item #5) identifies safety, and crossing pedestrians, at the intersection of S 3rd Street at E Polk Street ("expected to operate efficiently and safely through the 2026") and refers to improvements identified for JR Meadows 3. Staff observe certain improvements (i.e., bike lanes to 3rd) that can be mentioned. Staff also recommend the study to examine safety and crossing pedestrians at the intersection of S 2nd & E Polk Street.

As reported in the preceding section, the intersection of S 2nd Street at E Polk Street is projected to operate at either LOS A or B for all analysis scenarios. Additionally, there were no reported crashes at the intersection over the most recent six years of available crash data.

Utilizing count data at the intersection of S 3rd Street at E Polk Street, specifically referring to pedestrians traveling to/from the west and potentially impacting the intersection of S 2nd Street at E Polk Street, on days when the elementary school was in session, up to 15 pedestrians were counted that could potentially have walked through the intersection of S 2nd Street at E Polk Street between the hours of 7:00 AM and 9:00 AM (two-hour period). Between 2:00 PM to 6:00 PM (four-hour period), which includes the afternoon bell time of the nearby elementary school, 6 pedestrians could potentially have walked through the intersection of S 2nd Street at E Polk Street. According to the *Manual on Uniform Traffic Control Devices, 2009 Edition, Chapter 4C.06 Warrant 5, School Crossing*, the installation of a traffic signal at an intersection may be considered if adequate vehicular gaps to cross the intersection are unavailable and if a minimum of 20 school children cross during the highest hour of traffic. Since no more than 15 pedestrians were counted over a two-hour period that could have crossed through the intersection of S 2nd Street at E Polk Street, the minimum pedestrian threshold for requiring a traffic signal to accommodate school children would not be met. Since the intersection operates at LOS A/B, adequate gaps in traffic for pedestrians crossing the intersection are expected to be available.

Based on a review of operation, safety, and crossing pedestrians, the intersection of S 2nd Street at E Polk Street is expected to operate efficiently and safely through the 2026 site buildout year with the nearby JR Meadows No. 3 Subdivision also constructed.

If you have any questions regarding this comment's response memorandum/TIS addendum, feel free to contact me.





Exhibit E: FEMA Flood Insurance Rate Maps (FIRM and FIRMette)

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 10. The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSM-C-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was derived from multiple sources. Base map files were provided in digital format by the State of Oregon. This information was compiled from the U.S. Geological Survey (2007), Oregon Department of Transportation (2007), OR/WA Bureau of Land Management (2005), Oregon Department of Forestry (2003), NGS (2007), and USDA-FSA (2006) at a scale of 1:24,000.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-338-2627) or visit the FEMA website at <http://www.fema.gov/business/nfip/>.



LEGEND

- SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently destroyed. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
- OTHERWISE PROTECTED AREAS (OPAs)
- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% Annual Chance Floodplain Boundary
- 0.2% Annual Chance Floodplain Boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation line and value; elevation in feet*
- Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- Cross section line
- Transect line
- 45° 02' 08", 93° 02' 12" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
- 3100000 FT 5000-foot ticks: Oregon State Plane North Zone (FIPS Zone 3601), Lambert Conformal Conic projection
- 1000-meter Universal Transverse Mercator grid values, zone 10N
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile
- MAP REPOSITORIES
Refer to Map Repositories list on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
March 2, 2010
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0191D

FIRM
FLOOD INSURANCE RATE MAP
YAMHILL COUNTY,
OREGON
AND INCORPORATED AREAS

PANEL 191 OF 675
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARLTON, CITY OF	410251	0191	D
YAMHILL COUNTY	410249	0191	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
41071C0191D
EFFECTIVE DATE
MARCH 2, 2010
Federal Emergency Management Agency



Exhibit F: Yamhill County Assessor's Map

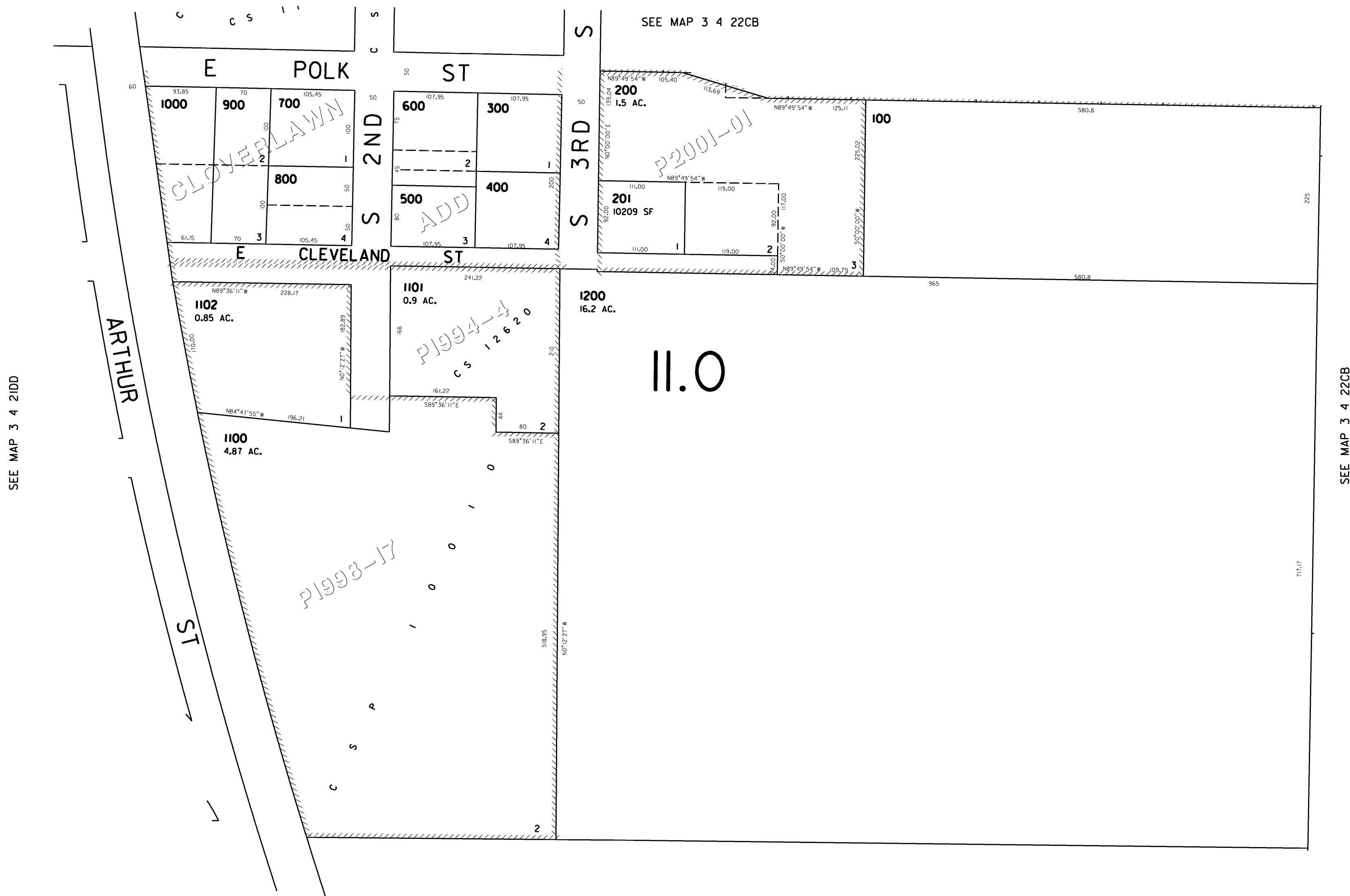
THIS MAP WAS PREPARED FOR
ASSESSMENT PURPOSE ONLY

SW 1/4 SW 1/4 SEC22 T3S R4W W.M.
YAMHILL COUNTY

3 4 22CC
CARLTON

1" = 100'

CANCELLED
202
1101



SEE MAP 3 4 21DD

SEE MAP 3 4 22CB

SEE MAP 3 4 22CB

SEE MAP 3 4 22

3 4 22CC



Exhibit G: Ownership Information

FIRST AMERICAN TITLE

Property Research Report

SUBJECT PROPERTY

751 S 2nd St
98628
R3422CC01100
Yamhill

OWNER

Entrust Group Inc The Fbo
Nardoni Janette F Ira #02-37346

DATE PREPARED

Date: 01/26/2023

PREPARED BY

gparilla@firstam.com



First American Title

Customer Service Department

503.219.8746

cs.oregon@firstam.com

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First American Title

Customer Service Department
503.219.8746
cs.oregon@firstam.com
Date: 01/26/2023

OWNERSHIP INFORMATION

Owner: Entrust Group Inc The Fbo
CoOwner: Nardoni Janette F Ira #02-37346
Site: 751 S 2nd St Carlton OR 97111
Mail: 555 12th St Suite 1250 Oakland CA 94607

Parcel #: 98628
Ref Parcel #: R3422CC01100
TRS: 03S / 04W / 22 / SW
County: Yamhill

PROPERTY DESCRIPTION

Map Grid: 741-A1
Census Tract: 030400 Block: 5053
Neighborhood: SC1 MFH With Land
School Dist: 1 Yamhill-Carlton School District
Impr Type: 11 - 1 Story
Subdiv/Plat:
Land Use: 109 - Residential - Manufactured structure
Std Land Use: CMOB - Mobile Home Parks, Trailers
Zoning: MX - Mixed-Density Residential
Lat/Lon: 45.288602 / -123.174549
Watershed: Yamhill River
Legal: Township 3S Range 4W Section 22 Qtr C QQtr C
TaxLot 01100

ASSESSMENT AND TAXATION

Market Land: \$776,179.00
Market Impr: \$182,839.00
Market Total: \$959,018.00 (2022)
% Improved: 19.00%
Assessed Total: \$383,981.00 (2022)
Levy Code: 11.0
Tax: \$6,328.97 (2022)
Millage Rate: 16.4825
Exemption:
Exemption Type:

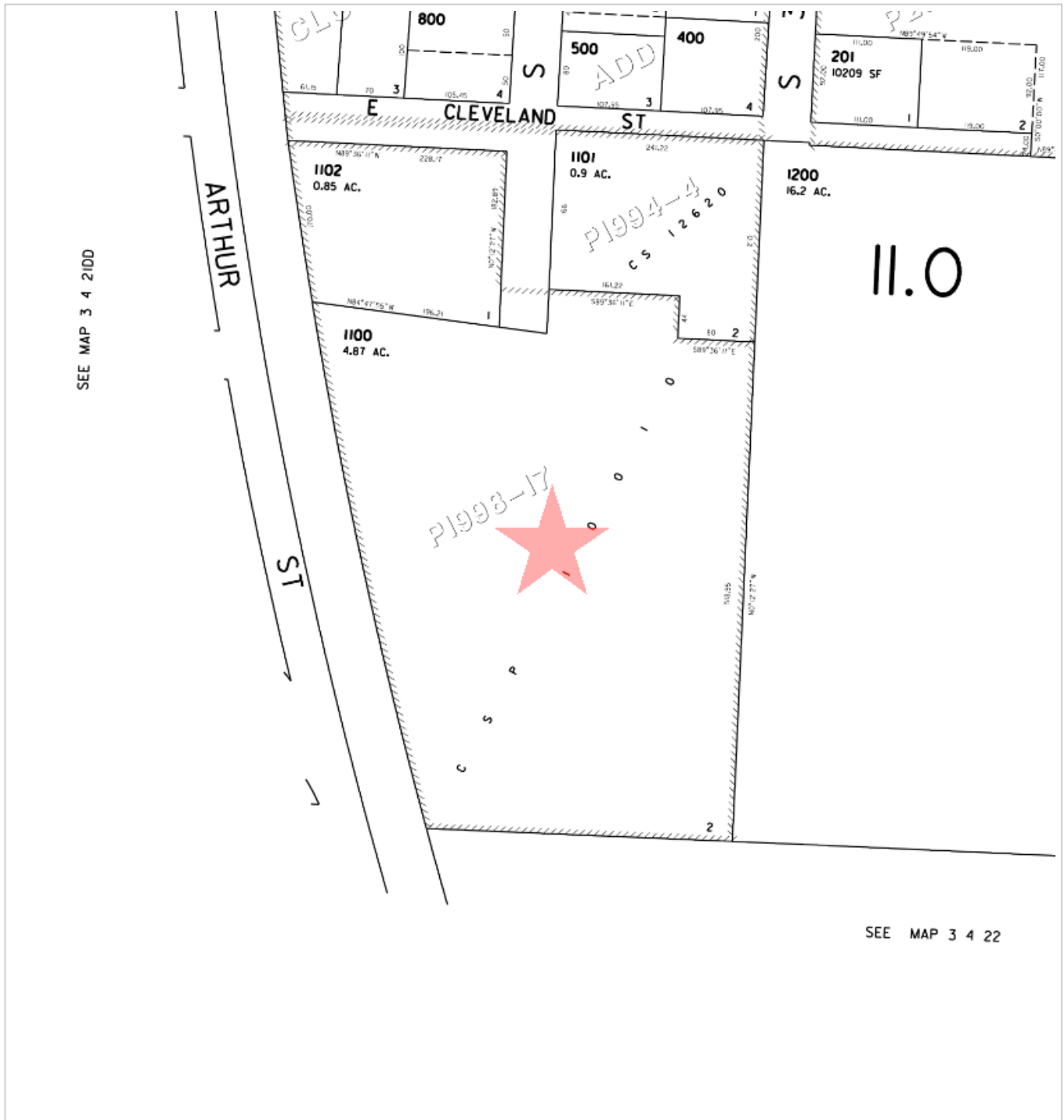
PROPERTY CHARACTERISTICS

Bedrooms: 3	Total SqFt: 1,782 SqFt	Year Built: 2002
Baths, Total: 2	First Floor: 1,782 SqFt	Eff Year Built:
Baths, Full: 2	Second Floor:	Lot Size Ac: 4.87 Acres
Baths, Half:	Basement Fin:	Lot Size SF: 212,137 SqFt
Total Units:	Basement Unfin:	Lot Width:
# Stories: 1	Basement Total:	Lot Depth:
# Fireplaces:	Attic Fin:	Roof Material: Composition Shingle
Cooling:	Attic Unfin:	Roof Shape: Gable
Heating:	Attic Total:	Ext Walls: MAS - Masonite
Building Style: RM2 - Mobile Home Double Wide	Garage: Unfinished Detached Garage 576 SqFt	Const Type:

SALES AND LOAN INFORMATION

Owner	Date	Doc #	Sale Price	Deed Type	Loan Amt	Loan Type
JANETTE F NARDONI	07/28/2015	11665	\$350,000.00	Deed		Conv/Unk
NW BND R/E HOLDINGS CARLTON LL	06/19/2012	8142		Foreclosure		Conv/Unk
REDHILLS DEV CO LLC	05/30/2007	11909		Multi Cnty/St Or Open-End- mtg	\$1,398,000.00	Conv/Unk
WINE COUNTRY VENTURES LLC	12/03/2004	24570	\$320,000.00	Deed		Conv/Unk
REDHILLS DEV CO LLC	12/03/2004	24571	\$376,000.00	Deed		Conv/Unk
ROLAND G CUTRIGHT	09/15/2003	23604		Deed Of Trust	\$110,000.00	Conventional
ROLAND G CUTRIGHT	07/18/2002	14139		Deed Of Trust	\$91,800.00	Conventional
ROLAND CUTRIGHT	08/22/2001	14673		Deed		Conv/Unk
TERRY A MCINTYRE	01/01/1999	7357	\$255,000.00	Deed		Conv/Unk
ROLAND G CUTRIGHT	01/01/1998	6150		Foreclosure		Conv/Unk
ROLAND G CUTRIGHT	02/22/1994	2937		Deed Of Trust	\$71,500.00	Conventional
	04/08/1992	2820	\$120,000.00	Deed		Conv/Unk
RECORD OWNER				Deed		Conv/Unk
ROLAND G CUTRIGHT				Foreclosure		Conv/Unk

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.

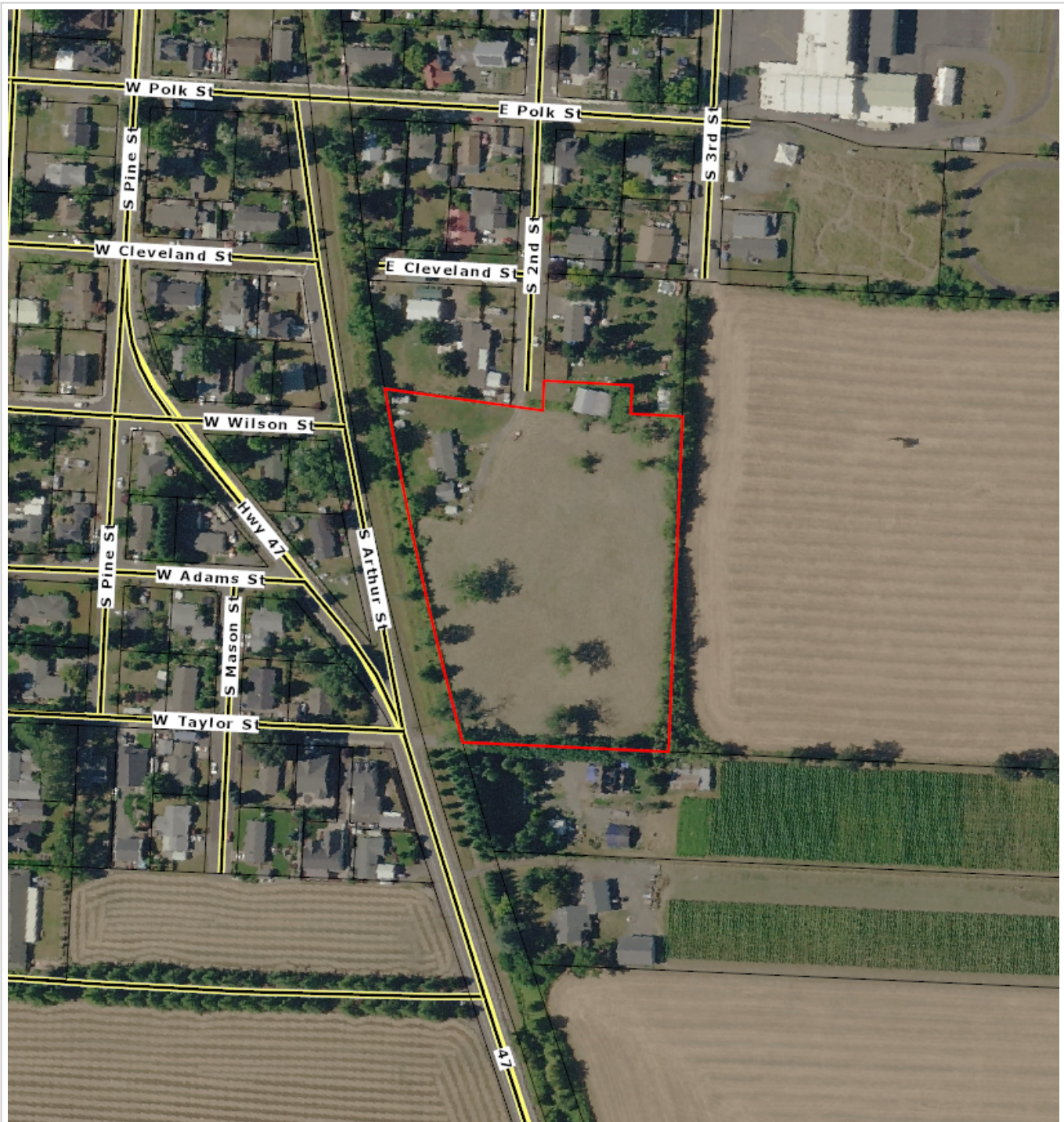


First American Title

Parcel ID: 98628

Site Address: 751 S 2nd St

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.



First American Title

Parcel ID: 98628

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.

RECORDING REQUESTED BY:

GRANTOR'S NAME:
NW Bend Real Estate Holdings Carlton, LLC
4675 MacArthur Court, 15th Floor
Newport Beach, CA 92660

GRANTEE'S NAME:
The Entrust Group Inc. FBO Janette F. Nardoni
IRA #02-37346
555 12th Street, Suite 1250
Oakland, CA 94607

SEND TAX STATEMENTS TO:
The Entrust Group Inc. FBO Janette F. Nardoni
IRA #02-37346
555 12th Street, Suite 1250
Oakland, CA 94607

AFTER RECORDING RETURN TO:
The Entrust Group Inc. FBO Janette F. Nardoni
IRA #02-37346
555 12th Street, Suite 1250
Oakland, CA 94607

Escrow No:

Yamhill County Official Records	201511665
DMR-DDMR	
Stn=6 SUTTONS	07/28/2015 09:51:23 AM
2Pgs \$10.00 \$11.00 \$5.00 \$20.00	\$46.00
I, Brian Van Bergen, County Clerk for Yamhill County, Oregon, certify that the instrument identified herein was recorded in the Clerk records.	
Brian Van Bergen - County Clerk	

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STATUTORY SPECIAL WARRANTY DEED

NW Bend Real Estate Holdings Carlton, LLC, an Oregon limited liability company, Grantor, conveys and specially warrants to **The Entrust Group Inc. FBO Janette F. Nardoni IRA #02-37346, Grantee,** the following described real property, free of encumbrances created or suffered by the Grantor except as specifically set forth herein:

Parcel(s) 2, PARTITION PLAT 98-17, in the City of Carlton, County of Yamhill, State of Oregon.

This property is free of encumbrances created or suffered by the Grantor, EXCEPT: none

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009 AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

THE TRUE CONSIDERATION FOR THIS CONVEYANCE IS \$350,000.00. (See ORS 93.030)

FNT 45140507213

DATED: July 17, 2015

NW Bend Real Estate Holdings Carlton, LLC
an Oregon limited liability company

By: Sabal Financial Group, L.P.,
Its Manager

By: [Signature]
Name: R. PATTERSON JACKSON
Title: CHIEF EXECUTIVE OFFICER

"A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document."

STATE OF CALIFORNIA)
COUNTY OF ORANGE)

On July 17, 2015, before me, Jaclyn Mary Lanning, Notary Public, personally appeared R. Patterson Jackson, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/~~she~~/they executed the same in his/~~her~~/their authorized capacity(ies), and that by his/~~her~~/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature [Signature] (SEAL)
Signature of Notary Public

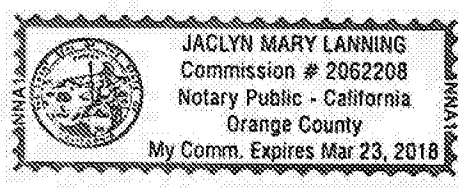




Exhibit H: List of Surrounding Property Owners



Date of Production: 01/26/2023

TERMS AND CONDITIONS OF INFORMATION REPORTS

IMPORTANT - READ CAREFULLY: AN INFORMATION REPORT IS **NOT** AN INSURED PRODUCT OR SERVICE OR A REPRESENTATION OF THE CONDITION OF TITLE TO REAL PROPERTY. IT IS NOT AN ABSTRACT, LEGAL OPINION, OPINION OF TITLE, TITLE INSURANCE COMMITMENT OR PRELIMINARY REPORT, OR ANY FORM OF TITLE INSURANCE OR GUARANTY. THE INFORMATION REPORT IS ISSUED EXCLUSIVELY FOR THE BENEFIT OF THE REQUESTOR, AND MAY NOT BE USED OR RELIED UPON BY ANY OTHER PERSON. THE INFORMATION REPORT MAY NOT BE REPRODUCED IN ANY MANNER WITHOUT FIRST AMERICAN TITLE'S PRIOR WRITTEN CONSENT. FIRST AMERICAN TITLE DOES NOT REPRESENT OR WARRANT THAT THE INFORMATION CONTAINED IN THE INFORMATION REPORT IS COMPLETE OR FREE FROM ERROR, AND THE INFORMATION THEREIN IS PROVIDED WITHOUT ANY WARRANTIES OF ANY KIND, AS-IS, AND WITH ALL FAULTS. AS A MATERIAL PART OF THE CONSIDERATION GIVEN IN EXCHANGE FOR THE ISSUANCE OF AN INFORMATION REPORT, REQUESTOR AGREES THAT FIRST AMERICAN TITLE'S SOLE LIABILITY FOR ANY LOSS OR DAMAGE CAUSED BY AN ERROR OR OMISSION DUE TO INACCURATE INFORMATION OR NEGLIGENCE IN PREPARING THE INFORMATION REPORT SHALL BE LIMITED TO THE GREATOR OF THE FEE CHARGED FOR THE INFORMATION REPORT OR \$15. REQUESTOR ACCEPTS THE INFORMATION REPORT WITH THIS LIMITATION AND AGREES THAT FIRST AMERICAN TITLE WOULD NOT HAVE ISSUED THE INFORMATION REPORT BUT FOR THE LIMITATION OF LIABILITY DESCRIBED ABOVE. FIRST AMERICAN TITLE MAKES NO REPRESENTATION OR WARRANTY AS TO THE LEGALITY OR PROPRIETY OF REQUESTOR'S USE OF THE INFORMATION CONTAINED IN THE INFORMATION REPORT.

R3422CC 01101
Kaitlyn & Jeramie Clements
Po Box 264
Carlton, OR 97111

R3421DD 01400
Gwendolyn & Samuel White
130 W Wilson
Carlton, OR 97111

R3421DD 01500
Ian Barr
901 S Arthur St
Carlton, OR 97111

R3422CC 01102
Robin Kay
749 S 2nd St
Carlton, OR 97111

R3422CC 01100
The Entrust Group Inc
555 12th St STE 1250
Oakland, CA 94607

R3422CC 01200
Gabriela Vargas & Teofilo Pobre III
709 N Sitka Ave
Newberg, OR 97132

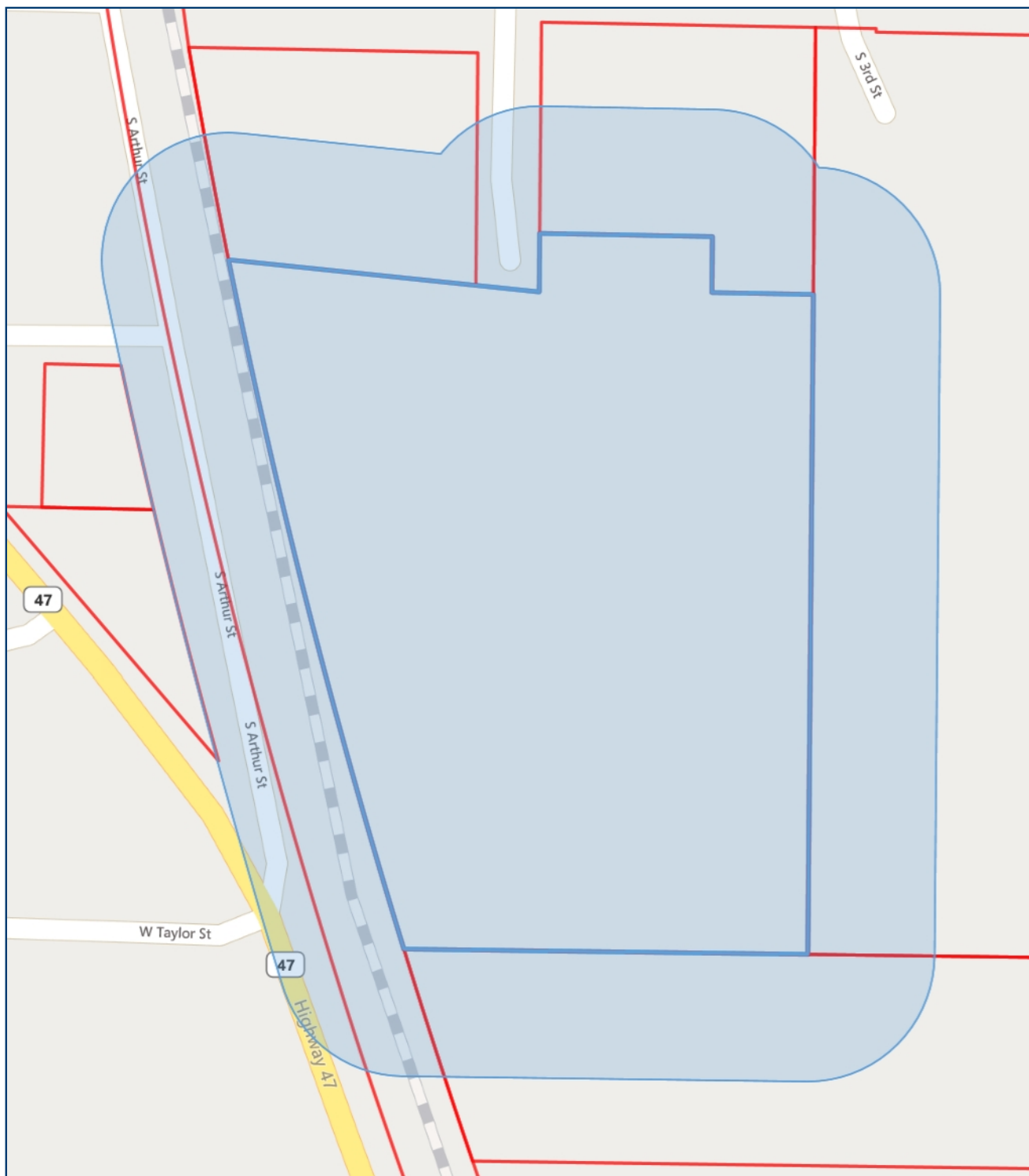
R4403 01300
Yamhill County
535 NE 5th St
Mcminnville, OR 97128

R3422 00800
Terry McIntyre & Carol Fredrick
Po Box 691
Carlton, OR 97111



100 ft Buffer

751 S 2nd St, Carlton, OR 97111
Report Generated: 1/26/2023



The present data and maps are intended for informational purposes only. Some information has been procured from third-party sources and has not been independently verified. Individual parts are owned by their respective copyright owners and not by First American. First American Title Company makes no express or implied warranty respecting the information presented and assumes no responsibility for errors or omissions.



Ownership

Legal Owner(s): Entrust Group Inc The	Parcel #: R3422CC 01100
Site Address: 751 S 2nd St Carlton, OR 97111	APN: 98628
Mailing Address: 555 12th St STE 1250 Oakland, CA 94607	County: Yamhill

Property Characteristics

Bedrooms: 3	Year Built: 2002	Lot SqFt: 212137
Total Bathrooms: 2	Building SqFt: 1782	Lot Acres: 4.87
Full Bathrooms: 2	First Floor SqFt: 1782	Roof Type: Composition
Half Bathrooms: 0	Basement Sqft: 0	Roof Shape: GABLE
Units: 1	Basment Type:	Porch Type:
Stories: 1.00		Building Style: Mobile Home
Fire Place: N		Garage: Detached Garage
Air Conditioning:		Garage SqFt: 576
Heating Type: Forced air unit		Parking Spots: 2
Electric Type:		Pool:

Property Information

Land Use: RESIDENTIAL	Zoning: MX
Improvement Type: Mobile home	School District: Yamhill Carlton
Legal Description: TOWNSHIP 3S RANGE 4W SECTION 22 QTR C QQTR C TAXLOT 01100	Neighborhood:
	Subdivision:

Assessor & Tax

2022 Market Land: \$675,433	2022 Taxes \$6,328.97
2022 Market Total: \$807,287	% Improved: 19
2022 Market Structure: \$131,854	Levy Code:
2022 Assessed Total: \$383,981	Millage Rate:

Sale History

Last Sale Date: 7/28/2015	Doc #: 201511665	Last Sale Price: \$350,000
Prior Sale Date: 6/19/2012	Prior Doc #: 2012-08142	Prior Sale Price: \$0

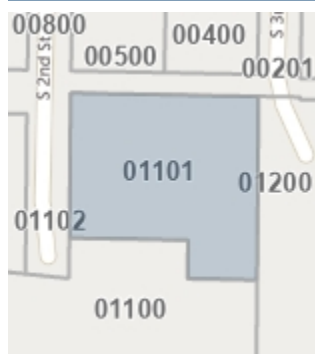
Mortgage

1st Mortgage Date:	Doc #:	
1st Mortgage Type:	1st Mortgage Lender:	1st Mortgage: \$0
2nd Mortgage Type:		2nd Mortgage: \$0



First American Title™

Customer Service Department
 Phone: 503.219.8746(TRIO)
 Email: cs.oregon@firstam.com
 Report Generated: 1/26/2023



Legal Owner: Kaitlyn & Jeramie Clements
 Site Address: 748 S 2nd St Carlton, OR 97111
 Mailing Address: Po Box 264 Carlton, OR 97111
 Bedrooms: 3
 Bathrooms: 2
 Building SqFt: 2,604 Lot Acres: 0.90
 Year Built: 1977
 School District: Yamhill Carlton School District 1
 Neighborhood:
 Legal: TOWNSHIP 3S RANGE 4W SECTION 22 QTR C QQTR C TAXLOT 01101

APN: 494791
 Ref Parcel #: R3422CC 01101
 Taxes: \$5,142.92
 Market Value: \$456,221
 Assessed Value: \$312,023
 Sales Price: \$256,000
 Transfer Date: 7/13/2017



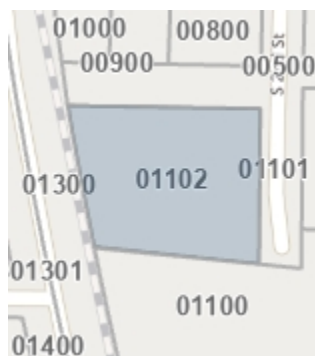
Legal Owner: Gwendolyn & Samuel White
 Site Address: 130 W Wilson Carlton, OR 97111
 Mailing Address: 130 W Wilson Carlton, OR 97111
 Bedrooms: 2
 Bathrooms: 1
 Building SqFt: 896 Lot Acres: 0.19
 Year Built: 1948
 School District: Yamhill Carlton School District 1
 Neighborhood:
 Legal: PT LOTS 1 & 2 - BLOCK 5 IN MOUNTAIN VIEW ADD

APN: 97718
 Ref Parcel #: R3421DD 01400
 Taxes: \$2,145.97
 Market Value: \$249,818
 Assessed Value: \$130,197
 Sales Price: \$150,000
 Transfer Date: 4/3/2007



Legal Owner: Ian Barr
 Site Address: 901 S Arthur St Carlton, OR 97111
 Mailing Address: 901 S Arthur St Carlton, OR 97111
 Bedrooms: 3
 Bathrooms: 1.5
 Building SqFt: 1,056 Lot Acres: 0.27
 Year Built: 1975
 School District: Yamhill Carlton School District 1
 Neighborhood:
 Legal: S 87.19 OF LOT 2 IN BL 5 & PORTION OF LOT 1 IN BLOCK 10 - MOUNTAIN VIEW ADD

APN: 97736
 Ref Parcel #: R3421DD 01500
 Taxes: \$2,555.99
 Market Value: \$282,720
 Assessed Value: \$155,073
 Sales Price: \$155,000
 Transfer Date: 8/27/2015



Legal Owner: Robin Kay
 Site Address: 749 S 2nd St Carlton, OR 97111
 Mailing Address: 749 S 2nd St Carlton, OR 97111
 Bedrooms: 3
 Bathrooms: 2
 Building SqFt: 2,107 Lot Acres: 0.85
 Year Built: 1994
 School District: Yamhill Carlton School District 1
 Neighborhood:
 Legal: TOWNSHIP 3S RANGE 4W SECTION 22 QTR C QQTR C TAXLOT 01102

APN: 511318
 Ref Parcel #: R3422CC 01102
 Taxes: \$3,932.76
 Market Value: \$377,693
 Assessed Value: \$238,602
 Sales Price: \$229,900
 Transfer Date: 10/7/2013



Customer Service Department
 Phone: 503.219.8746(TRIO)
 Email: cs.oregon@firstam.com
 Report Generated: 1/26/2023



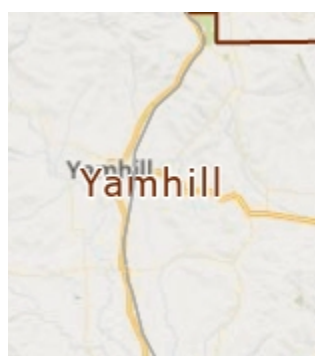
Legal Owner: Entrust Group Inc The
 Site Address: 751 S 2nd St Carlton, OR 97111
 Mailing Address: 555 12th St STE 1250 Oakland, CA 94607
 Bedrooms: 3
 Bathrooms: 2
 Building SqFt: 1,782 Lot Acres: 4.87
 Year Built: 2002
 School District: Yamhill Carlton School District 1
 Neighborhood:
 Legal: TOWNSHIP 3S RANGE 4W SECTION 22 QTR C QQTR C TAXLOT 01100

APN: 98628
 Ref Parcel #: R3422CC 01100
 Taxes: \$6,328.97
 Market Value: \$807,287
 Assessed Value: \$383,981
 Sales Price: \$350,000
 Transfer Date: 7/28/2015



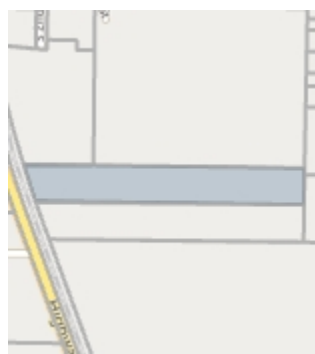
Legal Owner: Gabriela Vargas & Teofilo Pobre Iii
 Site Address: No Site Address , OR
 Mailing Address: 709 N Sitka Ave Newberg, OR 97132
 Bedrooms: 0
 Bathrooms: 0
 Building SqFt: 0 Lot Acres: 16.20
 Year Built: 0
 School District: Yamhill Carlton School District 1
 Neighborhood:
 Legal: SEE METES & BOUNDS

APN: 98637
 Ref Parcel #: R3422CC 01200
 Taxes: \$257.93
 Market Value: \$5,208,687
 Assessed Value: \$15,649
 Sales Price: \$509,900
 Transfer Date: 7/15/2022



Legal Owner: Yamhill County
 Site Address: 535 NE 5th St McMinnville, OR 97128
 Mailing Address: 535 NE 5th St McMinnville, OR 97128
 Bedrooms: 0
 Bathrooms: 0
 Building SqFt: 0 Lot Acres: 3.78
 Year Built: 0
 School District: Yamhill Carlton School District 1
 Neighborhood:
 Legal: FORMER SPRR RAILROAD LINE

APN: 710148
 Ref Parcel #: R4403 01300
 Taxes: \$0.00
 Market Value: \$291,737
 Assessed Value: \$196,245
 Sales Price: \$0
 Transfer Date:



Legal Owner: Terry Mcintyre & Carol Fredrick
 Site Address: 1030 Highway 47 Carlton, OR 97111
 Mailing Address: Po Box 691 Carlton, OR 97111
 Bedrooms: 2
 Bathrooms: 2
 Building SqFt: 1,468 Lot Acres: 5.00
 Year Built: 1993
 School District: Yamhill Carlton School District 1
 Neighborhood:
 Legal: TOWNSHIP 3S RANGE 4W SECTION 22 TAXLOT 00800

APN: 94711
 Ref Parcel #: R3422 00800
 Taxes: \$7,283.93
 Market Value: \$995,594
 Assessed Value: \$441,919
 Sales Price: \$0
 Transfer Date:



**Exhibit I: Excerpts from the Carlton Comprehensive
Plan (Added October 2023)**

17.12.020 Definitions.

The following words and phrases, when used in this title, shall have the meanings set forth in this section, except in those instances where the context clearly indicates a different meaning.

"Access" means the way or means by which pedestrians and/or vehicles shall have safe, adequate and usable ingress and egress to property. A private access is an access not in public ownership and is controlled by means of deed, dedications or easement.

"Access classification" means a ranking system for streets used to determine the appropriate degree of access management. Factors considered include functional classification, the adopted plan for the roadway, subdivision or abutting properties, and existing level of access control.

"Access management" means the process of providing and managing access to land development while preserving the regional flow of traffic in term of safety, capacity, and speed.

"Accessory structure" means a detached, subordinate building or portion of a main structure, the use of which is incidental to that of the main structure or to the use of the land.

"Accessory use" means a use incidental, appropriate and subordinate to the main use of the parcel, lot or structure.

"Addition" means a modification to an existing building or structure that increases the site coverage.

"Adjoining" means contiguous or abutting, exclusive of street width. It shall include the terms adjacent, abutting, or contiguous.

"Administrative review" means a decision affecting land use within the city that is based on the application and/or enforcement of existing standards contained in this title.

Alteration, Structural. "Structural alteration" means any change in the exterior dimensions of a building or a change or repair that would affect or materially change a supporting member of a building, such as a bearing wall, column, beam, or girder.

"Annexation" means the incorporation of a land area into the city with a resulting change in the boundaries of the city.

"Appeal" means a request for a review of the decision-making authority's action on an application or interpretation.

"Applicant" means the owner of record or contract purchaser who submits an application for approval of a permit or land use action.

"Area of special flood hazard" means the land in the floodplain subject to a one percent or greater chance of flooding in any given year.

"Base flood" means the flood having a one percent chance of being equaled or exceeded in any given year.

"Basement" means that portion of a building between floor and ceiling that is partly below and partly above grade, but so located that the vertical distance from grade to the floor below is equal to or greater than the vertical distance from grade to ceiling. If such portion of a building is not a basement, it shall be considered a story.

"Bed and breakfast" means a structure designed and occupied as a residence and in which sleeping rooms are provided on a daily or weekly basis for use by travelers or transients for a charge or fee paid for the rental or use of the facilities. An operator of a bed and breakfast must be a permanent, full time resident of the structure where the use takes place.

"Bike lane" means a four to six-foot (6 ft.) portion of a roadway that has been designated by striping and pavement markings for the preferential or exclusive use of bicyclists.

"Cross access" means a service drive providing vehicular access between two or more contiguous sites so the driver need not enter the public street system.

"Cultivation" means a location where marijuana is produced or cultivated for use by a medical marijuana qualifying patient including within a building, structure or premises used for the cultivation or storage of medical marijuana that is physically separate and off site from a medical marijuana dispensary.

"Day care facility" means an institution, establishment or place, not a part of a public school system, in which are commonly received three or more children, not of common parentage, under the age of fourteen (14) years, for a period not exceeding twelve (12) hours per day for the purpose of being given board, care, or training apart from their parents or guardians for compensation or reward. See also, Family Child Care.

"Dedication" means the limited grant by a property owner allowing the use of property by the public for specified purposes.

"Density" means a measure of the number of dwelling units per gross acre.

"Development" means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, drilling, and site alteration such as that due to grading, paving, or excavation.

"Drive-through facility" means a drive-through use is a business activity involving buying or selling of goods or the provision of services where one of the parties conducts the activity from within a motor vehicle. Facilities usually associated with a drive through use are queuing lanes, service windows, and service islands for vehicular use.

"Driveway" means a minor private way used by vehicles and pedestrians to gain access from an approved public access or right-of-way onto a lot or parcel of land.

"Dwelling" means a structure or portion thereof that is used for human habitation including permanent provisions for living, sleeping, eating, cooking and sanitation.

Dwelling, Duplex or Two-Family. "Duplex or two-family dwelling" means a detached building containing two dwelling units designed exclusively for occupancy by two families living independently of each other.

Dwelling, Multi-Family. "Multi-family dwelling" means a building containing three or more dwelling units designed for occupancy by three or more families living independently of each other.

Dwelling, Single-Family. "Single-family dwelling" means a detached building containing one dwelling unit designed exclusively for occupancy by one family.

Dwelling, Vacation Rental. "Vacation rental dwelling" means a dwelling unit, which is rented, or is available for rent on a daily or weekly basis or is advertised; or is listed with an agent as a vacation rental.

"Dwelling unit" means one or more habitable rooms designed for occupancy by one family.

"Easement" means a grant of right to use an area of land for a specific purpose.

"Eating and drinking establishment" means a retail service establishment where meals and/or beverages are prepared and served to the public generally for primarily indoor consumption on the premises.

"Employees" means all persons normally working on the premises during the largest shift. The Planning Commission shall determine the estimated number of employees of a new business and the number of employees of an established business shall be determined from an examination of the payroll.

"Encroachment" means any obstruction in the floodplain that affects flood flows.

"Face" means to front upon.

Table 44
Buildable Residential Land after Re-designations
Carlton, 2007

Zone	Vacant (acres)¹	Redevelopable	Total	Acres Needed 2027
Suburban Residential (SR)	57.1	30.0	88.9	40.0
Multi-Family Residential (MR)	0.4	0.7	1.1	5.7
Mixed-Density Residential (MX)	1.8	4.7	6.5	
Manufactured Home (MH) ¹	0.1	0.0	0.1	NA
Total	59.4	35.4	94.8	45.7

Source: MWVCOG, 2007.

¹ No specific analysis of future need in the Manufactured Home (MH) Zone is required as manufactured home parks with a maximum density of 10 units per acre are allowed as a permitted use in the Multi-Family Residential Zone.

² The MX Zone provides for a mixture of housing types with a maximum density of nine (9) dwelling units per acre.

Future Commercial and Industrial Land Needs

The Economy of the City section of the Comprehensive Plan includes a 2027 projection of local employment (see Table 8). One purpose for forecasting local employment is to determine if sufficient land is currently designated in the Comprehensive Plan to accommodate projected commercial and industrial development. Table 7 of the Economics Element shows the projected amount of land need for commercial and industrial uses through 2027. That information is also included in **Table 45** below.

Table 45
Comparison of Supply and Demand for Commercial and Industrial Land
Carlton, 2027

Land Use Type	<u>Vacant/Redevelopable</u> <u>Acres</u>
Supply	
Commercial	9.5
Industrial	2.5
Total Supply	12.0
Demand	
Commercial	4.6
Industrial	13.3
Total Demand	17.9
Surplus (Deficit)	
Commercial	4.9
Industrial	(10.8)

Source: MWVCOG, 2007.



**Exhibit J: Preliminary Water System Design Report
(Added July 2023)**

South 2nd Street Carlton, Oregon Preliminary Water System Design Report

Date: July 17, 2023

Client: Max and Jannete Nardoni

Engineering Contact: Cody Street, EI
(503) 563-6151 | streetc@aks-eng.com

AKS Job Number: 4206



12965 SW Herman Road, Suite 100
Tualatin, OR 97062
(503) 563-6151

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2.0	Project Location/Description	1
3.0	Fire Protection Criteria	1
4.0	Water Availability	1
5.0	WaterCAD Modeling	1
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Appendix A: Hydrant Flow Test Results

Appendix B: WaterCAD Modeling Results

Preliminary Water System Design Report

**S 2ND STREET, CARLTON
CARLTON, OREGON**

1.0 Purpose of Report

The purpose of this report is to document the criteria that the fire protection water systems are designed to meet, to identify the sources of information on which the analysis is based, and to present the design methodology as well as the results of the analysis.

2.0 Project Location/Description

The subject property is a ±4.87-acre parcel located east of the intersection of S Arthur St and Oregon State Highway 47 in Carlton, Oregon. This project includes an estimated 39 residential lots constructed in one phase.

3.0 Fire Protection Criteria

Fire protection water is required throughout the site. System sizing is based on the following:

- 2014 Oregon Fire Code as adopted by City of Carlton Code of Ordinances Section 15.04.020.7

4.0 Water Availability

The subject property has access to 2 public water mains. An 8 inch water main is located on E Wilson St and S 3rd St, and an 8 inch water main is located at E Taylor St and S 3rd St. AKS Engineering & Forestry completed a hydrant flow test under the supervision of the City of Carlton on October 30, 2019 at the intersection of 7th St and Main St. Based on the flow test, static pressure is approximately 80 pounds per square inch and the projected hydrant flow is 7,279 gallons per minute at 20 pounds per square inch residual pressure. The full results of the flow test are provided in Appendix A.

5.0 WaterCAD Modeling

5.1 SYSTEM WATER DEMAND

Water usage demand was estimated based on an average 8-gpm per residential lot. The model consists of three different developments. A blanket demand was applied to each junction with respect to the development that the junction falls within. The three developments yield a total flow demand of approximately 1,670-gpm.

5.2 FIRE PROTECTION WATER DEMAND

Fire protection water mains and services have been sized to support on-site fire hydrants. Based on the Oregon Fire Code, the fire flow required for single family dwellings and duplexes served by a municipal water supply shall be 1,000 gallons per minute at 20 pounds per square inch residual pressure. If the structures are 3,600 square feet or larger, the required fire flow is determined according to Oregon Fire Code Appendix B105.1. All structures within the S 2nd St subdivision are anticipated to be under 3,600 square feet.

5.3 ON-SITE FIRE PROTECTION WATER MAIN SYSTEM

Fire protection water to the subdivision is provided by a looped system connecting to the intersections at E Taylor St/S 3rd St, and E Wilson St/S 3rd St. Bentley WaterCAD was used to model fire flow through the on-site fire protection water system. Available flow to each anticipated on-site hydrant was determined. The available flow to each hydrant is summarized in Table 5-1, below. Detailed model reports are included in Appendix B.

Hydrant	Flow (gallons per minute)
H1	1,046
H2	1,091
H3	1,105
H4	1,143

5.4 FIRE PROTECTION RESULTS

Based on the Bentley WaterCAD model all hydrants within the proposed development satisfy the fire flow requirements specified in the 2005 Oregon Fire Code. Residual pressures were analyzed during fire flow conditions at each hydrant location. In both scenarios, when 1,000-gpm of flow is being pulled from H1 or H2, Junction (J-58) records the lowest residual pressure throughout the system. The static pressure at J-58 during normal operation is 56 psi. The residual pressure at J-58 is summarized in Table 5-2 below. Detailed model reports are included in Appendix B.

Hydrant Demand	Residual Pressure at J-58 (psi)
H1 = 1,000-gpm H2 = 0-gpm	35
H1 = 0-gpm H2 = 1,000-gpm	36

Appendix A: Hydrant Flow Test Results

HYDRANT FLOW TEST REPORT



Project Name/#/Address: 7395-01
 Client: Carlton
 Date: 10/30/2019 Document Owner: John Christiansen

SAFETY PLAN

<input checked="" type="checkbox"/>	Notify fire department
<input checked="" type="checkbox"/>	Identify discharge point
<input checked="" type="checkbox"/>	Verify downstream
<input checked="" type="checkbox"/>	Traffic Control
<input type="checkbox"/>	Signage/Cones
<input checked="" type="checkbox"/>	PPE

Date/time of test: 10/30/2019
 Tested by: Waylon Knight / Brent Whittaker
 Witness: Brian Burnham
 Test duration: 5 Min

FLOWED HYDRANT 1-F

Make: Mueller
 Static: 85 PSI
 Pitot: 74 PSI
 Inside diameter of outlet: 2.5 Inch
 Discharge coeff: 0.9
 Observed flow: 1444 GPM
 Flow method: Pitot Diffuser
 Ground elevation: FT
 Location description: 7th Street

GAUGE HYDRANT 1-G

Make: Mueller
 Static: 80 PSI
 Residual: 77 PSI
 Ground Elevation: FT
 Location Description: Main Street

PROJECTED FIRE FLOW

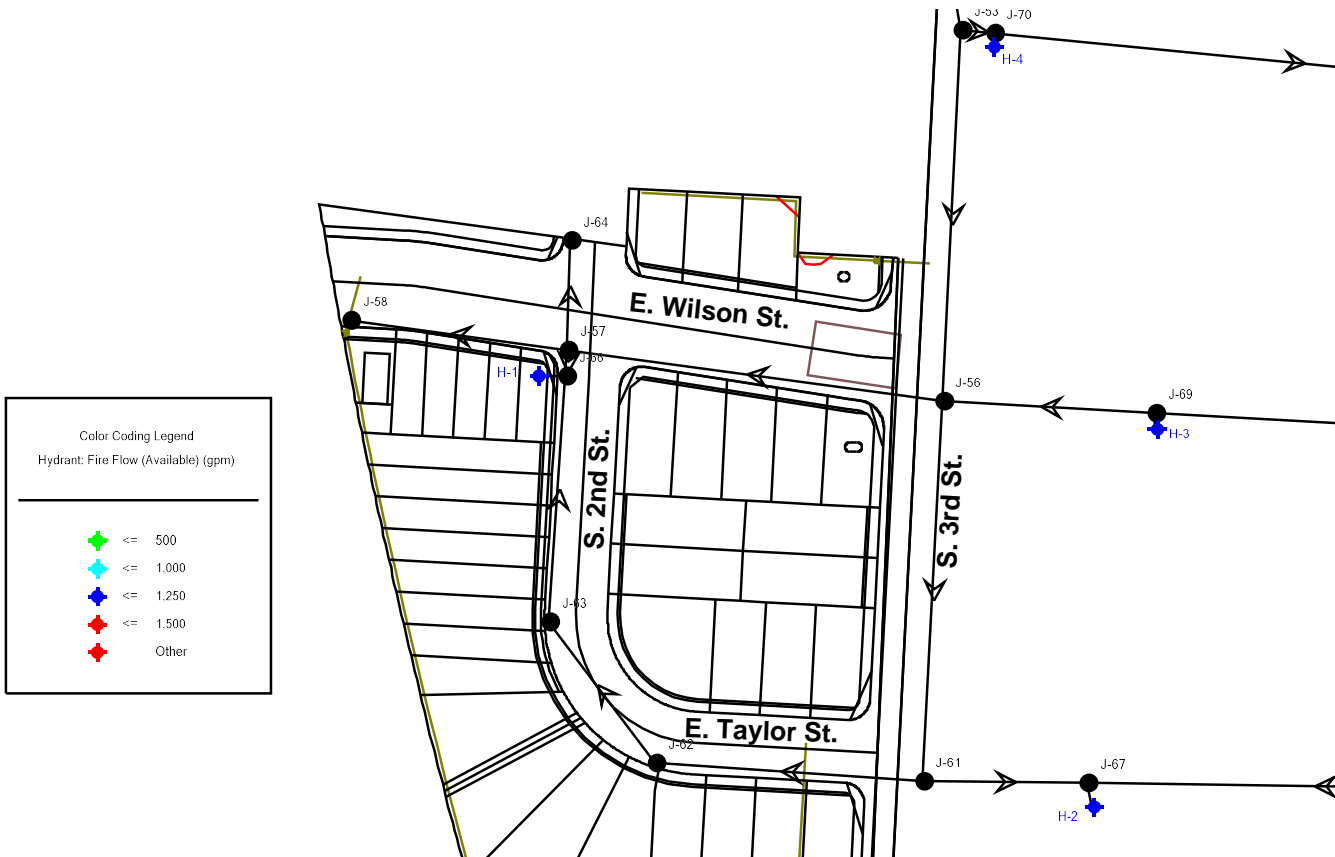
Projected Flow at 20-PSI: 7279 GPM

NOTES/OBSERVATIONS

$Q_{\text{Flowed}} = 29.84 * (P_{\text{pitot}}^{.5}) * (D_{\text{outlet}}^2) * C$
 $Q_{\text{Projected}} = Q_{\text{F}} * ((GS - P_{\text{design}})^{0.54}) / ((GS - GR)^{0.54})$

Appendix B: WaterCAD Modeling Results

S. 2nd Street Water System Scenario: Fire Flow



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H-1 = 1,000-gpm Scenario

FlexTable: Junction Table

ID	Label	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
160	J-58	197.00	278.65	35
172	J-64	195.00	278.65	36
169	J-63	194.00	279.27	37
183	J-66	193.10	278.51	37
158	J-57	193.00	278.66	37
167	J-62	193.00	279.92	38
165	J-61	190.00	281.05	39
156	J-56	181.00	281.66	44

H-2 = 1,000-gpm Scenario

FlexTable: Junction Table

ID	Label	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
160	J-58	197.00	281.09	36
172	J-64	195.00	281.10	37
169	J-63	194.00	280.82	38
183	J-66	193.10	281.06	38
158	J-57	193.00	281.10	38
167	J-62	193.00	280.69	38
165	J-61	190.00	280.56	39
156	J-56	181.00	282.08	44



**Exhibit K: Decision of Approval for SUB 2022-01
(Added October 2023)**

CITY OF CARLTON PLANNING COMMISSION NOTICE OF DECISION

SUB 2022-01, FDP 2022-01

DATE OF DECISION: November 21, 2022

APPLICANT: Dan Armstrong

PROPERTY OWNER: Dan Armstrong

FILE NUMBER: SUB 22-01, FDP 22-01

REQUEST: Request for:

1. Preliminary subdivision approval for 12 residential lots
2. Floodplain development permit approval for future construction on the lots included in the proposed subdivision.

SITE LOCATION: 548 4th Street
3 4 22BC Tax Lot 300

SITE SIZE: 1.78 acres

DESIGNATION: Comprehensive Plan Map: Residential [R]

Zoning: Mixed-Density Residential (MX)

CRITERIA: Carlton Development Code

- Section 17.28 Residential Medium-High Density R-3 Zone
- Section 17.60.030 Development and Design Standards
- Section 17.64 Street Standards
- Section 17.72 Storm Drainage
- Section 17.76 Utility Lines and Facilities
- Section 17.88 Development Standards for Land Divisions
- Section 100 Access Control Standards
- Section 17.176 Subdivisions and PUD's
- Section 17.188 Type 1 and II Actions and Procedures
- Section 17.196 Public Hearings
- Section 17.216 Performance Agreement

EXHIBITS: Exhibit A: Vicinity Map
Exhibit B: City Engineer's Comments
Exhibit C: Subdivision Application Narrative
Exhibit D: Preliminary Subdivision Plans
Exhibit E: FDP Application Narrative
Exhibit F: DSL Wetland Response
Exhibit G: DSL Wetland Delineation Concurrence Letter

I. REQUEST

The applicant is requesting preliminary subdivision approval for 12 single family attached lots. The subdivision proposal includes a private street taking access from East Johnson Street, and guest parking for the use of the guests of future residents. The applicant is also proposing to dedicate both a 34,500 SF open space tract SW of Hawn Creek to the City and the required right-of-way to abutting public streets.

II. PROCEDURE

Subdivision applications are processed as Type II actions and shall be considered in accordance with Section 17.188.020. Flood Plain Development Permits are processed as Type I actions in accordance with Section 17.188.010. Because the two permit applications are inter-dependent, they will be processed under the same Notice of Decision.

The application and fee were received and docketed on August 10, 2022. The application was deemed incomplete on August 25, 2022 and deemed complete upon resubmittal on September 13, 2022. The city has until January 11, 2023, or 120 days from the date the application was deemed complete to approve, modify and approve or deny this proposal, including an appeal decision if applicable. Notice of the Planning Commission public hearing was mailed on September 27, 2022.

III. APPEAL

Appeals are governed by the Carlton Development Code CDC Section 17.204. An appeal of the Commission's decision shall be made, in writing, to the City Council within 10 days of the Planning Commission's final written decision. Appeal of the staff decision shall be made to the Planning Commission within 10 days of the final written decision.

IV. SITE AND SURROUNDINGS:

The subject property is one of only two properties zoned Mixed-Density Residential within the Carlton City Limits. The property is located at the corner of 4th and Johnson streets and abuts properties zoned R-1 in all directions, with property zoned Agricultural Holding located to the Northwest of the subject property.

The property is currently occupied by a single-family residence and multiple out-buildings on the Northeast portion of the lot. The remainder of the property is undeveloped, with Hawn Creek running across the property from the Southwest to the Northeast corner. As indicated on the submitted site plans and DSL concurrence, a portion of the site is a wetland, which will remain undeveloped. A portion of the development site is within the floodplain, necessitating the submittal of a floodplain development permit.



Figure 1

V. CRITERIA AND FINDINGS:

17.52 Mixed-Density Residential (MX)

17.52.020 - Residential density.

To achieve balance and integration of a range of housing types, sizes, and densities, the mixed density residential (MX) zone relies on three (3) criteria.

A. The intent of the MX zone is to achieve an overall density of nine (9) dwelling units per net acre of residential land.

B. To reflect the demand for rental and higher-density housing within the region, at least twenty-five (25) percent of the units must be either in multi-family or attached single-family structures, e.g., townhomes or duplexes.

C. To meet the continuing demand for single-family housing while reducing land costs, the majority of residential land in each neighborhood should be for higher-density single-family housing, either detached (generally between six (6) to nine (9) dwellings per net acre) or attached (generally between nine (9) to twelve (12) dwellings per net acre).

Findings: The proposed subdivision indicates 12 lots for attached single family homes on 1.75 acres, a density of approximately 7 units per acres. Criteria A-C are met.

17.52.030 - Permitted uses.

Within any MX zone, no structure shall be used, constructed, erected, or altered, and no lot shall be used or occupied for any purposes except the following:

- A. Residential dwellings, including single-family, manufactured homes, and multifamily structures.*

Findings: The proposal includes 12 lots for attached single family dwellings, among the listed permitted uses in the MX zone.

17.52.050 - Building setbacks.

A minimum of five (5) foot setback is required from all alleys. For residential uses, a minimum of ten (10) foot setback is required for a front yard (street side) setback. Open covered and uncovered porches may extend within the front setback to within five (5) feet of the front property line. Except as may otherwise be required with the MX zone, there shall be no other minimum building setbacks.

Findings: Planned setbacks are indicated on the preliminary site plan shown in Exhibit D. It should be noted that a site design review application is required prior to development approval. Staff finds that the proposed lots are capable of meeting setback requirements as listed.

17.52.060- Lot requirements.

- A. There are no minimum lot-size requirements, except as lot size is controlled by overall MX zone density and lot coverage requirements.*
- B. Lot Frontage. Lots within the MX zone shall have the following street frontage requirements:*

	Maximum	Minimum
Single-Family Residential	100 feet	25 feet
Multifamily Residential	30 feet/unit	6 feet/unit, min. 24 feet

- C. Lot Coverage in the MX Zone. The total lot coverage including area covered by buildings, roofed structures, and impervious paved surfaces, shall not exceed seventy-five (75) percent*

Findings: As indicated in Exhibit D, all lots have a minimum frontage of 25 feet on the proposed private street. As there is no SDR proposal submitted concurrently, lot coverage shall be reviewed at the time of site development review and building permit submittal.

17.52.070 - Building height

No building height shall exceed three (3) stories or thirty-five (35) feet in height

Findings: Staff finds that building height will be reviewed at the time of future SDR and building permit submittal.

17.52.080 - Building and site design

All residential structures shall conform to the design standards of Chapter 17.106.

Findings: Staff finds that building permit and site design of all residential structures shall conform to the standards of Chapter 17.106 and shall be reviewed as part of a future SDR application.

17.60.030 - Application of public facility standards.

Standards for the provision and utilization of public facilities or services available within the City of Carlton shall apply to all land developments in accordance with the following table of reference. No development permit shall be approved unless the following improvements are provided for prior to occupancy or operation, or unless future provision is assured in accordance with Chapter 17.216.

	Fire Hydrant	Streets	Water Hookup	Sewer Hookup	Storm Drain	Street Lights
Single-family Dwelling and Duplex	No	C-2	Yes	Yes	Yes	No

Findings: Single family dwellings are subject to the above public facility requirements. Specific standards related to streets, water, sewer, and drainage are addressed below. Staff finds that the proposed subdivision application addresses the required public facilities.

17.64- Street Standards

.030 General Provisions

A. The location, width, and grade of streets shall be considered in their relation to existing and planned streets, to topographical conditions, to public convenience and safety, and to the proposed use of the land to be served by the streets.

B. Development proposals shall provide for the continuation, and connection to, all streets, bikeways and pedestrian facilities within the development and to existing streets, bikeways and pedestrian facilities outside the development.

C. Alignment. All streets other than minor streets or culs-de-sac, as far as practical, shall be in alignment with existing streets by continuation of the centerline thereof. The staggering of street alignments resulting in "T" intersections shall leave a minimum distance recommended by the city engineer.

D. Future Extension of Streets. In order to promote the development of an efficient network of city streets and connections to state and county roads, development shall provide future street extensions as shown on the Future Street Plan found in the Carlton Transportation System Plan.

Findings: All street improvements shall be constructed in accordance with existing streets and to the applicable standards of the development code and PWDS design standards.

E. Existing Streets.

1. Three-quarter improvements to all existing streets adjacent to, within or necessary to serve the property, shall be required at the time of partitioning or subdivision, unless the applicant demonstrates to the satisfaction of the city engineer that the condition and sections of the existing streets meet city standards and are in satisfactory condition to handle projected traffic loads.

2. For infill development that does not include partitioning or subdivision, construction of sidewalks, including curb and gutter where necessary, along all property frontages shall be the minimum requirement of development. A three-quarter street improvement shall be required if the city engineer determines that the existing streets are not in condition to handle projected traffic loads.

Findings: Per Exhibit B, City Engineer's Comments:

1. **Johnson Street:** Johnson St. is an existing collector street that the City has determined can be developed to local street standards due to existing conditions. The requirements are: 50' ROW, 34' pavement, curb & gutter, and a 5' sidewalk.
2. **Johnson Street (east half):** The existing street is approximately 25' wide. Along the south side of the street there is no curb & gutter or sidewalk. The north side of the street includes curb & gutter and 5' sidewalk. The tax map does not show the right-of-way width, but it appears to be 40.27' based upon the Carlton Crest 6 development. The requirement is a ½ street improvement, which includes: 17' of pavement from the centerline (approximately 9' of additional pavement), curb & gutter, and 5' sidewalk along the entire frontage. This would also require a 10' ROW dedication. The developer has proposed to provide the dedication and improvements.
3. **Johnson Street (west half):** The existing street is approximately 34' wide. Along the south side of the street there is curb & gutter and sidewalk. The tax map does not show the right-of-way width, but based upon a recent dedication for the Carlton Crest 6 off-site improvements it appears to be 50'. No additional improvements are required.
4. **Fourth Street:** The existing street is 20' wide. Along the east side of the street there is curb & gutter and sidewalk. No additional improvements are required.
5. **Internal Street:** Typically, this would be required to be a public street meeting the local street standards. The developer would like this to be a private street. To do so the conditions in 17.88.030D of the CDC must be met. The criteria are:

- a. *Access is infeasible due to parcel shape, terrain or location of existing structures. The location of the floodplain and wetland make this lot challenging to develop.*
 - b. *The road is not necessary to provide for the future development of adjoining property. This street is not required to be extended in the future, so this criteria is met.*
6. **Internal Street:** The easement and pavement are shown to be 20' wide, and the sidewalk is provided in an additional 6' easement. This could be done as two easements or combined into one easement.
- a. The sidewalk in places also has a 6' vertical drop off the back, which is a safety concern. The street section does not show any protection, but the plan view shows a 4' safety fence along the sidewalk. This is acceptable.
 - b. A street maintenance agreement will be required such that the homeowners are responsible for operation and maintenance of the street and storm system.

All requirements are listed as conditions of approval.

H. Dead-End Streets. When it appears necessary to continue a street or public access way into a future subdivision or adjacent acreage, streets, or public access way shall be platted to a boundary of a subdivision or partition. The street may be platted without a turnaround unless the Planning Commission finds that a turnaround is necessary.

Findings: There are no public streets running through the proposed development.

N. Landscape Strip.

Findings: Staff finds that no landscape strip is required for local streets or existing collectors per CDC Section 17.64.040.

.040 ROW Improvements and Widths

Findings: The applicant has provided the improvements as required by the code as indicated in the City Engineer's comments above.

17.64.060 - Private streets.

- A. *Streets and other rights-of-way serving a planned unit development that are not dedicated for public use shall comply with the following:*
 - 1. *Private streets shall only be allowed where the applicable criteria of Section 17.88.030(C) are satisfied. Private streets shall have a minimum easement width of twenty (20) feet and a minimum paved or curbed width of eighteen (18) feet.*
 - 2. *Unless otherwise specified in the Standard Specifications for Public Works Construction in the City of Carlton, all private streets serving more than two dwelling units shall be constructed to the same pavement section specifications required for public streets. Provision for the maintenance of the street shall be provided in the form of a maintenance agreement, homeowners association, or other instrument acceptable to the city attorney.*

3. *A turn-around shall be required for any private street which has only one outlet and which is in excess of two hundred (200) feet long or which serves more than two residences. Turn-arounds for private streets shall be either a circular turn-around with a minimum paved radius of thirty-five (35) feet, or a "tee" or "hammerhead" turn-around with a minimum paved dimension across the "tee" of seventy (70) feet and a twenty (20) foot width with appropriate radius at the corners.*

B. *Any grant of a private street or land functioning as an easement shall not be accepted by the city and dedicated for public use except upon approval of the council and upon meeting the specifications of Sections 17.64.020 and 17.64.040.*

Findings: 17.88.030.D states that Private Streets shall only be permitted when it is found that public street access is both infeasible due to parcel shape, terrain, or location of existing structures and not necessary to provide for the future development of adjoining property. Hawn Creek bisects the subject property, and the Southwest portion of the property is both sloped and contains wetlands and floodplain. Staff finds that these natural features justify use of a private street. Abutting properties have existing access to public streets that will not be affected by the proposal.

Section B is inapplicable- The City is not accepting an existing private street as part of the proposal.

17.68- Off-Street Parking and Loading

.050- Off-street parking requirements

A. 1 and 2 family dwellings must have 2 spaces per unit.

Findings: Parking requirements for the proposed residential units will be reviewed at the time of SDR submittal. Staff finds that the proposed lots are capable of providing two spaces per unit.

.060- Residential driveways: All single and joint use driveways shall be paved and have a minimum 20-foot approach width.

Findings: Driveway access shall be reviewed at the time of SDR submittal. All driveways shall meet the 20-foot minimum approach upon design submittal.

17.72- Storm Drainage

.030- Plan for storm drainage and erosion control

A. The methods to be used to minimize the amount of runoff, siltation, and pollution created from the development both during and after construction.

B. Plans for the construction of storm sewers, open drainage channels, and other facilities that depict line sizes, profiles, construction specifications, and other such information as is necessary for the city to review the adequacy of the storm drainage plans.

C. Design calculations shall be submitted for all drainage facilities. These drainage calculations shall be included on the site plan drawings and shall be stamped by a licensed professional engineer in the State of Oregon. Peak design discharges shall be computed using the rational formula and based upon the design criteria outlined in the Standard Specifications for Public Works Construction in the City of Carlton and the most current adopted storm drainage master plan.

Findings: No construction of any facilities in a development shall be permitted until a storm drain and erosion control plan for the project is prepared by an engineer registered in Oregon and approved by the City. The City Engineer's Comments address the criteria in 17.72.040 and are listed below:

"Storm Drainage: There is storm drainage along both Fourth and Johnson St. A temporary curb has been proposed along Johnson St. to direct storm run-off to the curb. The design is acceptable as proposed. The storm drainage on the private street is proposed to be collected in a catch basin and discharge to the wetland. Detention and treatment are not required. However, there needs to be protection from oils or spills flowing directly to the wetland. The catch basin should have an oil-water separator such as a snout or similar mechanism."

17.76- Utility Lines and Facilities

This section denotes city design, construction and maintenance standards for water improvements, sanitary sewer improvements, streetlights, underground utilities, private utilities and easements. The City Engineer has reviewed the proposed plans and provided suggested changes to the proposed sanitary and storm sewer line as outlined in this report and in the recommended conditions of approval. His comments are listed below and find that the submitted plans either meet requirements or can meet requirements based on suggested conditions of approval. Specific analysis of water, sewer, and storm drainage are included under their respective chapters of the CDC. Analysis of sewer requirements is provided in Exhibit B and under the findings for CDC 17.88.030.

17.84- Landscaping Installation and Compliance

.050- Minimum landscaped area and requirements

E. Single-Family and Duplex Dwellings: All yard areas not otherwise improved with structures, parking, and circulation (driveways, walkways, etc.) shall be landscaped. At least fifty (50) percent of front yard areas not covered with driveways, patios, or paths shall contain planted areas (includes any trees retained in the development).

Findings: As previously discussed, no SDR application has been submitted concurrent to the subdivision proposal. Staff finds that landscaping of the proposed lots will be reviewed up submittal of a SDR application.

.070- Screening and buffering

A. Screening shall be used to eliminate or reduce the visual and noise impacts of the following uses:

- 1. Commercial and industrial uses when abutting residential uses;*

2. *Industrial uses when abutting commercial uses;*

3. *Service areas and facilities, including garbage and waste disposal containers, recycling bins, and loading areas;*

4. *Outdoor storage areas;*

5. *Parking areas for ten (10) or more vehicles for multi-family developments, or twenty (20) or more vehicles for commercial or industrial uses;*

6. *At and above-grade electrical and mechanical equipment, such as transformers, heat pumps, and air conditioners;*

7. *Any other area or use as required by this title.*

Findings: The proposed uses are residential and are compatible with surrounding uses and therefore does not require screening or buffering.

.084- Planting and Maintenance

Findings: All homeowners will be responsible for maintenance of their landscaped areas. There will be a homeowners associated maintenance agreement required for landscaping within the subdivision as a condition of approval. Private property front yards and ROW landscape strips are less than 1000 square feet, so will not be required to be irrigated with automatic sprinkler systems.

17.88 Development Standards for Land Divisions

A. Minimum Lot Area. Minimum lot area shall conform to the requirements of the zoning district in which the parcel is located.

Findings: There is no minimum lot size in the MX zone so long as the density achieves an overall density of 9 units per acre. 12 lots are proposed on 1.75 acres, meeting the standard.

B. Maximum Lot Area. When single-family residential use is proposed for a lot with an area double or greater than the minimum density of the underlying zone the Planning Commission may take into consideration the potential for further division of the lot at a future date.

Findings: As there is no minimum lot size, there are also no lots proposed with an area double or greater than the minimum lot size. Staff finds criterion B is inapplicable.

C. Lot Width and Depth. The depth of a lot or parcel shall not be more than three times the width of the parcel, with the exception that parcels created for public utility uses or in zones where there is no minimum lot area requirement shall be exempt from width to depth ratio provisions.

Findings: There is no minimum lot area in the MX zone. Criterion C is therefore inapplicable.

D. Access. All lots and parcels created after the effective date of the ordinance codified in this title shall provide a minimum frontage, on an existing or proposed public street, equal to twenty (20) feet. An exception shall apply when residential lots or parcels and planned unit developments, may be accessed via a private street or easement developed in accordance with the provisions of Chapter 17.64 or when the city finds that public street access is:

- 1. Infeasible due to parcel shape, terrain, or location of existing structures; and*
- 2. Not necessary to provide for the future development of adjoining property.*

Findings: All lots, with the exception of the two with frontage on Johnson Street, do not have frontage on a public street. Staff finds that the use of a private street is justified due to the presence of wetlands and floodplain on the Southwest half of the subject property and because neighboring properties have existing public street access via 4th and Johnson streets.

E. Flag Lots. If a flag-lot is permitted, the following standards shall be met:

1. The access strip shall not be less than twenty (20) feet wide. The access strip shall be improved with minimum twelve (12) foot wide paved driveways that meet applicable city standards. If said access strip is over two hundred (200) feet in length, the driveway shall terminate in a turn-around capable of accommodating emergency fire vehicles;

2. The access strip shall not be included in the calculation of lot area for purposes of determining compliance with any minimum lot size provision of this title.

Findings: No flag lots are proposed within the proposed subdivision. Staff finds Criterion E is inapplicable.

F. Through Lots. Through lots shall be avoided except where essential to provide separation of residential development from major traffic arteries, adjacent nonresidential activities, or to overcome specific disadvantages of topography and orientation. A ten (10) foot wide screening or buffering easement, pursuant to the provision of chapter 17.84, may be required by the city during the review of the land division request.

Findings: No through lots are proposed within the proposed subdivision. Staff finds Criterion F is inapplicable.

G. Lot Side Lines. The side lines of lots, as far as practicable, shall run at right angles to the right-of-way line of the street upon which the lots face.

Findings: The front lot lines of each proposed lot are perpendicular to the proposed private street and parallel to Johnson Street. The only lot with a curved front lot line is the proposed lot seven, curved to account for the location of the Hawn Creek floodplain.

H. Lot Grading. The minimum elevation at which a structure may be erected, taking into consideration the topography of the lot, the surrounding area, drainage patterns and other pertinent data, shall be established by the building inspector.

Findings: Building permits shall be submitted prior to development on the site. This is included as a condition of approval.

I. Utility Easements. Utility easements shall be provided on lot areas where necessary to accommodate public utilities. Such easements shall have a minimum total width as specified in Section 17.76.020.

An exception shall apply when residential lots or parcels and Planned Unit Developments, may be accessed via a private street or easement developed in accordance with the provisions of Section 2.202 or when the City finds that public street access is:

- a. Infeasible due to parcel shape, terrain, or location of existing structures; and*
- b. Not necessary to provide for the future development of adjoining property.*

Findings: A private street is proposed for the development. PUEs are shown along the proposed private street to accommodate water and sewer service. Staff finds that Criterion I is met.

.040- Standards for Blocks

- A. General: The length, width, and shape of blocks shall be designed with regard to providing adequate building sites for the use contemplated; consideration of needs for convenient access, circulation, control, and safety of street traffic; and recognition of limitations and opportunities of topography.*
- B. Sizes: Blocks shall not exceed 1,000 feet in length between street lines, except blocks adjacent to arterial streets, or unless the previous adjacent development pattern or topographical conditions justify a variation. The recommended minimum distance between intersections of arterial streets is 1,800 feet.*
- C. Alleys. Alleys may be provided in all districts, however, alleys shall be provided in commercial and industrial areas, unless other permanent provisions for access to off-street parking and loading facilities are provided.*

Findings: There are no public street blocks proposed as part of the proposed subdivision. Staff finds the criterion is inapplicable.

Section 17.88.050 Improvement Requirements

All improvements required by this ordinance or as conditions of approval of any subdivision or partition shall be completed prior to the issuance of any building permits for any structures within the subject development. If the Developer requests approval to record the final plat before all required improvements have been constructed and all conditions of approval have been met by the Developer and accepted by the City, the Developer shall provide a security guarantee satisfactory to the City that all improvements will be constructed in conformance with all City standards and ordinances and all conditions of approval will be satisfied. If the total street frontage of the development is less than or equal to 250 feet, the applicant may request to enter into, and the City may grant an improvement deferral agreement.

- A. Frontage Improvements: Street improvements shall be required for all public streets on which a proposed land division fronts in accordance with Section 17.64. Such improvements shall be designed to match with existing improved surfaces for a reasonable distance beyond the frontage of the property. Frontage improvements shall include sidewalks, curbing, storm sewer, sanitary sewer, water lines, other*

public utilities as necessary, and such other improvements as the City shall determine to be reasonably necessary to serve the development or the immediate neighborhood.

Findings: City infrastructure requirements and the conditions of subdivision approval shall be completed prior to issuance of building permits, unless a security guarantee is agreed upon by the developer and the City.

The City Engineer's public utility improvement comments have been included in previous sections discussing storm drainage, water and sewer lines, and streets improvements.

B. Project Streets: All public or private streets within the land division shall be constructed as required by the provisions of Section 17.64. Private driveways serving flag lots or private streets shall be surfaced as per the requirements of this Ordinance.

Findings: The design on the private street shall be reviewed with the final construction plans prior to final plat approval. This requirement is listed as a COA.

C. Monuments: Upon completion of street improvements, centerline monuments shall be established and protected in monument boxes at every street intersection at all points of curvature, points of tangency of street center lines, and other points required by state law.

Findings: All required monuments are to be established per the standards of this section as a condition of approval.

D. Benchmarks: Elevation benchmarks shall be set at intervals established by the City Engineer. The benchmarks shall consist of a brass cap set in a curb or other immovable structure.

FINDING: This is included as a condition of approval.

E. Surface Drainage and Storm Sewer System: Drainage facilities shall be provided within the land division and to connect the land division drainage to drainage-ways or to storm sewers outside the land division and shall be consistent with the most current adopted Storm Water Master Plan. Design of drainage within the land division shall take into account the capacity and grade necessary to maintain unrestricted flow from areas draining through the land division and to provide extension of the system to serve such areas. The design shall take into account provisions for the future extension beyond the land division to serve upstream properties that, in the judgment of the City, cannot be served otherwise.

FINDING: A condition of approval includes the above and that the storm water system design and layout shall be approved by the City Engineer and Public Works prior to final plat approval.

F. Sanitary Sewers: Sanitary sewer shall be installed to serve the land division and to connect the Land division to existing mains both on and off the property being divided. The design shall take into account provisions for the future extension beyond the land division to serve upstream properties that, in the judgment of the City, cannot be served otherwise.

The City may require that the construction of sewage lines of a size in excess of that necessary to adequately service the development in question, where such facilities are or will be necessary to serve the entire area within which the development is located when the area is ultimately developed.

Findings: Per Exhibit B:

“Sanitary Sewer: There is an 8” sanitary sewer on both Fourth and Johnson Street. The main is shown to be extended to the end of the proposed private street within an easement. This should be an 8” pipe until the last run of pipe which can be 6”. The alignment of the pipe around station 13+00 will need to be adjusted during design as it is shown too close to the retaining wall and safety fence.

Sanitary Service: All lots are shown to have separate sanitary sewer services.

Hawn Creek Sanitary Sewer Pump Station: The construction of the capacity upgrade to the Hawn Creek Sanitary Sewer pump station must be completed prior construction of this subdivision. Construction on the pump station has begun and will likely be completed in November 2022.

WWTP: Improvements to the WWTP are in design, and interim improvements have been made to the biological treatment capacity. The 12 lots would have an additional load of approximately 8 pounds per day of BOD. The biological capacity of the treatment plant with the interim improvements is adequate to accept the load.”

- G. *Water System: Water lines with valves and fire hydrants serving the land division and connecting the land division to the City mains shall be installed. The design shall take into account provisions for extension beyond the land division to adequately grid the City system and to serve the area within which the development is located when the area is ultimately developed. However, the City will not expect the developer to pay for the extra pipe material cost of mains exceeding eight (8) inches in size. Installation costs shall remain entirely the developer's responsibility.*

Findings: All water improvements shall be designed in accordance with the Carlton PWDS as approved by the City Engineer. Comments from the City Engineer are included in Exhibit B and recommended conditions of approval are included at the end of this report.

- H. *Pedestrian Facilities and Bicycle ways: Sidewalks shall be installed along both sides of each public street and in include any pedestrian or bicycle ways within the land division as well as along all frontages to existing streets. Sidewalks shall be extended as required to connect to other sidewalk systems. The City may defer sidewalk construction until the dwellings or structures fronting the sidewalk are constructed. Any required off-site sidewalks, sidewalks fronting public property, or sidewalks adjacent to existing structures shall not be deferred.*
- I. *Pedestrian/Bicycle Design Standards. Pedestrian/bicycle access ways shall meet the following design standards:*
- a. *Minimum dedicated width: 10 feet*
 - b. *Minimum improved width: 5 feet*
 - c. *Vision Clearance: A clear line of visions for the entire length of the access way shall be required.*
 - d. *Pedestrian scale lighting fixtures shall be provided along the walkway and lighted to a level where the system can be used at night.*
 - e. *The access way shall be designed to prohibit vehicle traffic.*

Findings: Five-foot sidewalks are provided within easements along both sides of the proposed private street and along the street frontages of both 4th Street and Johnson Street. As 4th and Johnson Streets are existing streets, no bike lanes are required. Pedestrian scale lighting shall be required along the public sidewalk as a condition of approval.

J. Other:

1. *Curb cuts and driveway installations, excluding common drives, are not required of the land divider but, if installed, shall be according to the City standards.*
2. *Street tree planting is not required of the land divider but, if planted, shall be in accordance with City requirements and of a species compatible with the width of the planting strip.*
3. *Streetlights. The installation of underground electric service, light standards, wiring, and lamps for streetlights of a type required by City standards following the making of necessary arrangements with the serving electric.*
4. *Street Signs. The installation of street name signs and traffic control signs is required at locations determined to be appropriate by the city and shall be of a type required by City standards.*

Findings: All required street elements shall be installed prior to final plat approval.

17.100 Access Control Standards

A. 75 feet of access spacing is required for driveways on collector streets

Findings: The location of the proposed access drive is approximately 90 feet from the intersection of Johnson and 4th Street, and over 80 feet to the nearest driveway to the East. Staff finds the standard is met.

Section 17.176 Subdivisions and Planned Unit Development

All applications for a subdivision shall be submitted on forms provided by the city with the required information and accompanied by 10 copies and the application fee. All subdivisions shall conform to the applicable zoning district standards, development standards and other provisions of the Carlton Development Code.

FINDING: A complete application, copies, mailing labels and the required fee was submitted to the City for consideration and approval. City Staff determined a Traffic Impact Study is not required for subdivisions generating fewer than 100 daily trips. Based on Institute of Transportation Engineers (ITE) Category 215 for Single-Family Attached Housing, this 12-lot subdivision is estimated to generate 86 average daily trips and 12 peak hour trips. As the site has an existing single-family home, the net increase is 76 average daily trips and 11 peak hour trips. Additionally, this application does not include an access spacing exception, nor is the project anticipated to impact off-site intersections or adjacent roadways that have been identified as high crash location. Therefore, a traffic impact analysis is not required.

VI. Floodplain Development Permit

17.56.050 - General standards.

In all areas of special flood hazards, the following standards are required:

- A. *Anchoring. All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors.*

Findings: All lots proposed for future residential development are outside of the floodplain. Staff finds Criterion A is inapplicable.

B. Construction Materials and Methods.

1. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;

2. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage;

3. Electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

Findings: All lots are outside the floodplain and no construction will occur within the floodplain. Staff finds Criterion B is inapplicable.

C. Utilities.

1. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system;

2. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into floodwaters; and

3. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

Findings: The planned improvements will be located in PUEs along the proposed private street, outside the floodplain. Staff finds that the all utility systems have been designed

D. Subdivision Proposals.

- 1. All subdivision proposals shall be consistent with the need to minimize flood damage;*

2. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;

3. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage; and

4. Base flood elevation data shall be provided for subdivision and planned unit development proposals.

Findings: Staff finds that the proposed subdivision minimizes the effects on the existing floodplain. The design of the subdivision ensures that all lots, streets, and associated utilities are located outside the floodplain.

E. Review of Building Permits. Where elevation data is not available, applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available.

Findings: All residential lots are outside of the floodplain. Tract B is within the floodplain and will be dedicated to the City as a condition of approval.

VII. DECISION

Based on the findings in this report, staff approved FDP 22-01 and the Planning Commission approved SUB 22-01 with the following conditions

1. **Prior to final plat approval**, detailed design drawings and specifications for all water, sanitary sewer, storm drainage, street improvements, grading and erosion control, property and street centerline monuments and subdivision benchmarks shall be prepared by a registered professional engineer and submitted to the City Engineer for approval prior to constructions of any improvements.
 - a. All utility easements shall be shown on the final plat and at a minimum shall conform to the requirements of Development Code Section 17.76.
 - b. The installation of street name signs and traffic control signs is required at locations determined by the City and shall be of a type required by City standards.
 - c. The installation of underground electric service, light standards, wiring, and lamps for streetlights of a type required by City standards following the making of necessary arrangements with the serving electric.
 - d. Curb cuts and driveway installations by the developer shall be according to the City standards.
 - e. A street maintenance agreement will be required such that the homeowners are responsible for operation and maintenance of the street and storm system.

- f. The applicant shall include the Homeowners Codes, Covenant and Restrictions for maintenance of the private street and common areas as a component of the final plat recording.
 - g. There is an 8" sanitary sewer on both Fourth and Johnson Street. The main is shown to be extended to the end of the proposed private street within an easement. This should be an 8" pipe until the last run of pipe which can be 6". The alignment of the pipe around station 13+00 will need to be adjusted during design as it is shown too close to the retaining wall and safety fence.
 - h. The floodplain boundary shall be verified on the final construction plans.
 - i. The proposed catch basin shall have an oil-water separator such as a snout or similar mechanism to provide protection to the wetland.
 - j. The applicant shall demonstrate that fire flows to the subject development meet the minimum Uniform Fire Code Standard to the satisfaction of the fire chief.
 - k. Streetlight and street signs shall be designed to the City's PWDS
 - l. The new water line needs to be a minimum of 8" to the fire hydrant. During final design, a model is required to evaluate the amount of fire flow from the new fire hydrant.
 - m. Tract B shall be dedicated to the City and noted on the final plat.
 - n. A public utility easement shall be provided for public water, sanitary sewer, and storm drainage. Additionally, a sanitary sewer, stormwater, and drainage easement benefiting TL 200 shall be provided across TL 300.
 - o. The HOA agreement shall include a clause allowing City staff to enter the property to inspect the storm drainage facilities and require the HOA to address insufficiencies. The clause shall also give the City the authority to perform the required work at the cost of the HOA. The inspection by the City shall occur annually.
2. **Prior to issuance of building permits:**
- a. No building permits shall be issued until the capacity upgrade to the Hawn Creek Sanitary Sewer pump station is complete.
 - b. The applicant shall submit and receive approval of a Site Development Review application for the design of the homes.
 - c. All dwellings shall comply with the design standards of Section 17.106.030 A Residential Design Standards as illustrated on the approved elevations, at the time of building permit submittal.
3. **Security Guarantee:** If the developer requests approval to record the final plat before all required improvements have been constructed and all conditions of approval have been met by the developer and accepted by the City, the developer shall provide a security guarantee in accordance with Section 17.216 Performance Agreement and satisfactory to the City that all improvements will


be constructed in conformance with all City standards and ordinances and all conditions of approval will be satisfied.

4. **Final Plat Submittal:** Within eighteen months (18) months of the date of Planning Commission approval, the applicant shall submit three (3) identical reproducible copies of the final plat for signature. The final plat shall be submitted to the City in a form and with information consistent with Development Code Section 17.176.050 including monuments, benchmarks and other County survey and map standards, and State laws including ORS Chapter 92 for plats of record.

Extension: If the final plat is not submitted within eighteen (18) months of the date of Planning Commission approval, the approval shall lapse, unless an extension request is filed with the City before the expiration date. An extension request shall be made in accordance with Section 17.176.050.



Shannon Beaucaire, City Manager



Date

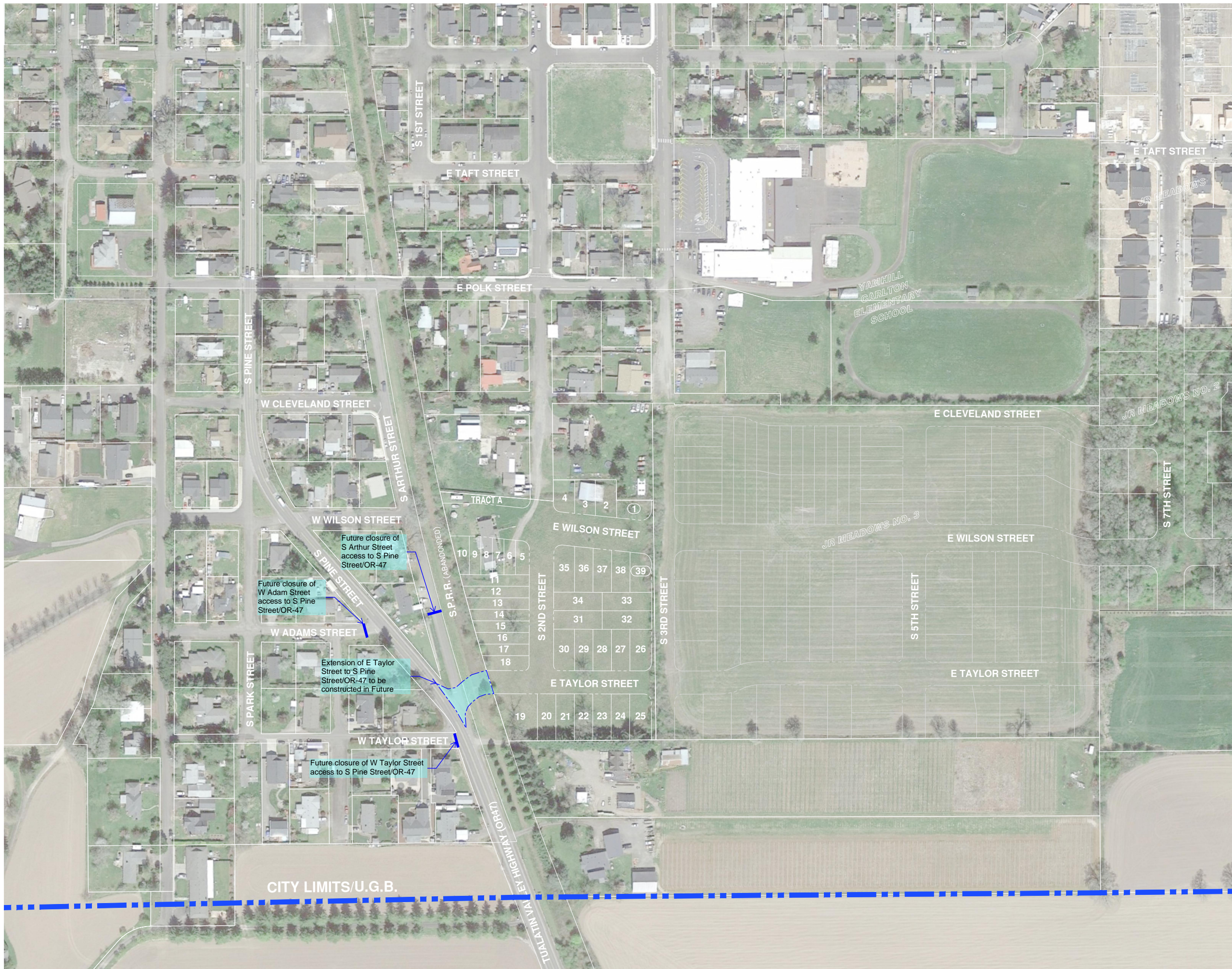


**Exhibit L: Potential/Conceptual Future Offsite
Circulation Map (Added October 2023)**

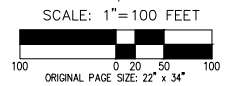
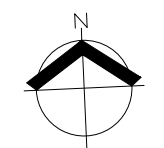
E TAYLOR STREET FUTURE OFFSITE CONCEPT PLAN - OPTION 1

S 2ND STREET SUBDIVISION

CARLTON, OREGON



CITY LIMITS/U.G.B.



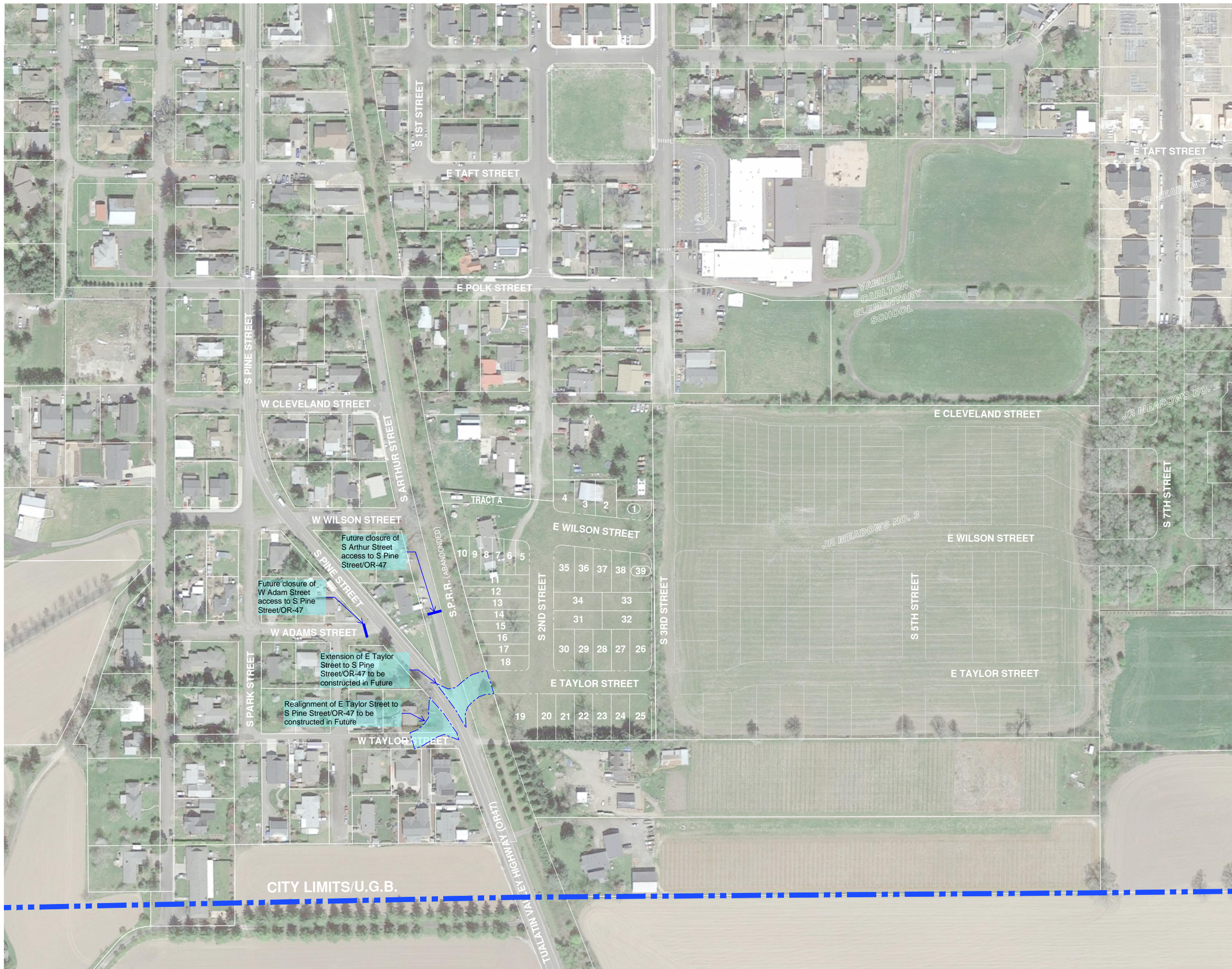
RENEWAL DATE: 6/30/25
JOB NUMBER: 4206
DATE: 09/26/2023
DESIGNED BY: CMS
DRAWN BY: NRA/JNW
CHECKED BY: MBH

EXH-1

E TAYLOR STREET FUTURE OFFSITE CONCEPT PLAN - OPTION 2

S 2ND STREET SUBDIVISION

CARLTON, OREGON

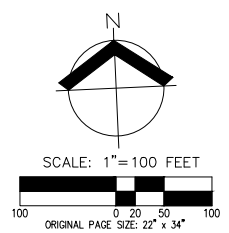


Future closure of S Arthur Street access to S Pine Street/OR-47

Future closure of W Adam Street access to S Pine Street/OR-47

Extension of E Taylor Street to S Pine Street/OR-47 to be constructed in Future

Realignment of E Taylor Street to S Pine Street/OR-47 to be constructed in Future



RENEWAL DATE: 6/30/25
JOB NUMBER: 4206
DATE: 09/26/2023
DESIGNED BY: CMS
DRAWN BY: NRA/JNW
CHECKED BY: MBH

EXH-2



**Exhibit M: Preliminary Single-Family Attached Home
Driveway Schematic (Added October 2023)**

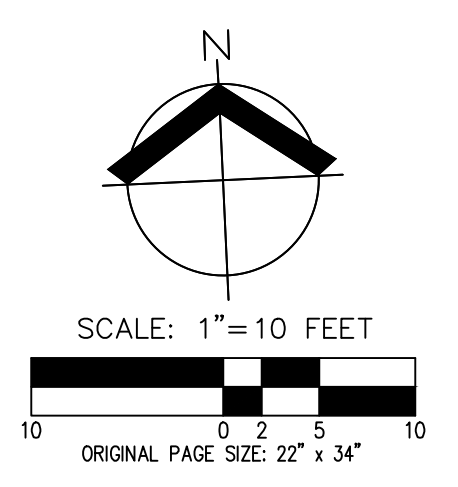
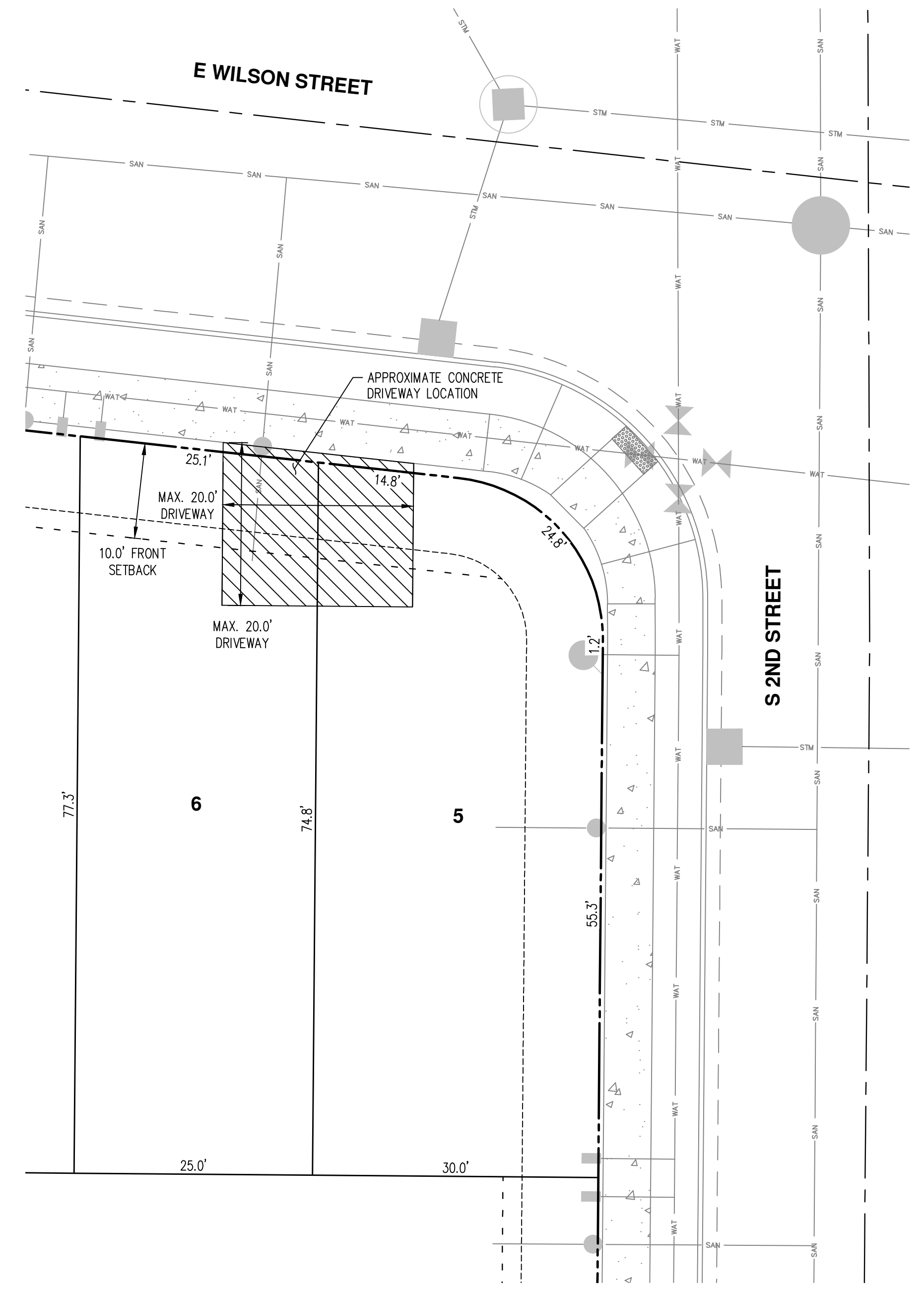
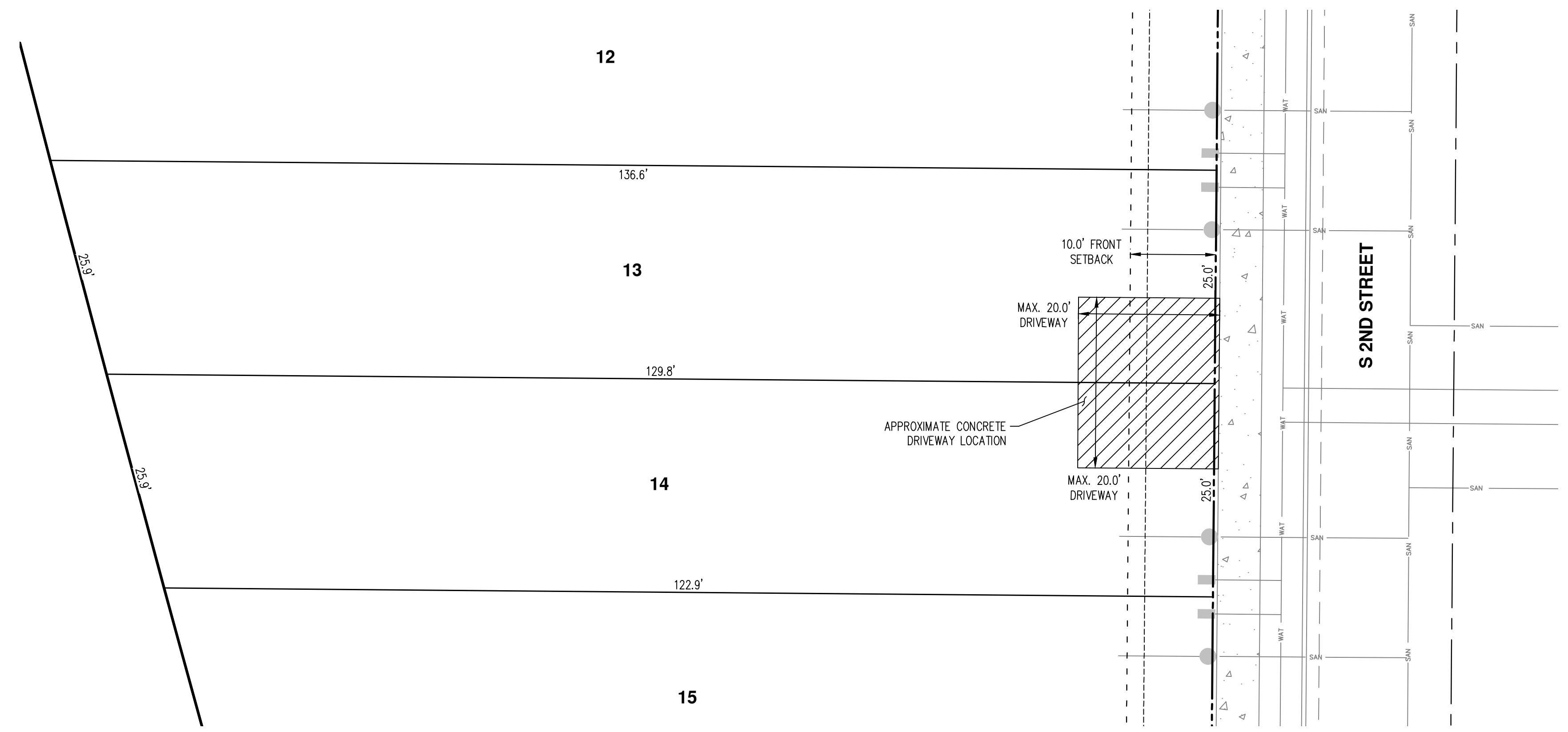


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SINGLE FAMILY ATTACHED HOME DRIVEWAY SCHEMATIC S 2ND STREET SUBDIVISION

CARLTON, OREGON



RENEWAL DATE: 6/30/25

JOB NUMBER: 4206

DATE: 10/06/2023

DESIGNED BY: CMS

DRAWN BY: NRA/JNW

CHECKED BY: MBH

EXH-1



S 2nd Street Subdivision

Transportation Impact Analysis

Carlton, Oregon



Date:
February 6, 2023

Prepared for:
Max Nardoni
Max Nardoni & Associates, LLC

Prepared by:
Daniel Stumpf, PE

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Executive Summary

1. The proposed S 2nd Street Subdivision will include the development of a residential subdivision located on a single property (Yamhill Tax Accessors Map 3 4 22CC, Tax Lot 1100) located south of the southern terminus of S 2nd Street in Carlton, Oregon. The project will include the construction of 25 single-family detached houses and 14 single-family attached houses for a total of 39 dwelling units.
2. The trip generation calculations show that the proposed project is projected to generate an additional 24 morning peak hour trips, 31 evening peak hour trips, and 326 average weekday trips.
3. No significant trends or crash patterns were identified at any of the study intersections that were indicative of safety concerns. Accordingly, no safety mitigation is recommended per the crash data analysis.
4. Traffic signal warrants are projected to be met at the following study intersections:
 - a. N/S Yamhill Street at W Main Street – Under existing conditions, but not under 2026 conditions with the planned ODOT Main Street Bypass project.
 - b. N/S Pine Street at E/W Main Street – Under existing conditions and year 2026 conditions with the planned ODOT Main Street Bypass project.

For the intersection of N/S Yamhill Street at W Main Street under year 2026 conditions with the bypass project, all-way stop-control warrants are projected to be met at the intersection.

As part of the Main Street Bypass project, revisions to traffic controls at these intersections (inclusive of traffic signals or all-way stop-controls if deemed necessary) are anticipated pending a more in-depth analysis by ODOT. Therefore, the installation of traffic signals, all-way stop-controls, or other traffic control mitigation, as part of the S 2nd Street Subdivision project are not necessary or recommended. No other traffic signals are projected to be warranted at the other study intersections under any analysis scenario.

5. Based on a review of operation, safety, and crossing pedestrians, the intersection of S 3rd Street at E Polk Street is expected to operate efficiently and safely through the 2026 site buildout year with the nearby JR Meadows No. 3 Subdivision also constructed. Regardless, pedestrian improvements will be implemented to the nearby transportation system as part of the JR Meadows No. 3 Subdivision project. A minimum 20-foot paved roadway with a sidewalk on the east side will be constructed on S 3rd Street to provide vehicle and pedestrian access between the development and the intersection of S 3rd Street at E Polk Street. No other mitigation at the intersection is necessary or recommended.
6. All study intersections are projected to operate acceptably per their respective jurisdictional standards through the 2026 site buildout year with the nearby JR Meadows No. 3 Subdivision also constructed, provided ODOT's Main Street Bypass project includes modifications to traffic controls at intersections directly impacted by the planned project.

Project Description

Introduction

The proposed S 2nd Street Subdivision will include the development of a residential subdivision located on a single property (Yamhill Tax Accessors Map 3 4 22CC, Tax Lot 1100) located south of the southern terminus of S 2nd Street in Carlton, Oregon. The project will include the construction of 25 single-family detached houses (removing 1 existing house for a net increase of 24 houses) and 14 single-family attached houses for a total of 39 dwelling units (38 net new dwellings). Access to the site will be provided via S 2nd Street to the north of the site (the segment between the site and E Polk Street will be improved to 20-foot minimum pavement width standards) and the planned roadways of E Wilson Street and E Taylor Street to the east of the site.

Based on correspondence with City of Carlton and Oregon Development of Transportation (ODOT) staff, the report conducts safety and capacity/level of service analyses at the following intersections during the morning and evening peak hours (mid-day peak hour at Intersection 6):

1. N/S Yamhill Street at W Main Street;
2. N/S Pine Street at E/W Main Street;
3. N/S 3rd Street at E Main Street;
4. N/S 7th Street at E Main Street;
5. S Pine Street at E/W Polk Street; and
6. S 3rd Street at E Polk Street.

The purpose of this study is to determine whether the transportation system within the vicinity of the site is capable of safely and efficiently supporting the existing and proposed uses in the area and to determine any mitigation that may be necessary to do so. Detailed information on traffic counts, trip generation calculations, safety analyses, and level of service calculations is included in the appendix to this report.

Location Description

The project site is located south of E Polk Street and east of S Arthur Street in Carlton, Oregon and includes a single property (tax lot 3422CC-01100) which encompasses an approximate total of ±4.9 acres. The subject site is located within a developing residential area of the City with single-family detached houses to the north, south, and west, and vacant/future developing land to the east.

Figure 1 presents an aerial image of the nearby vicinity with the project site outlined in yellow.

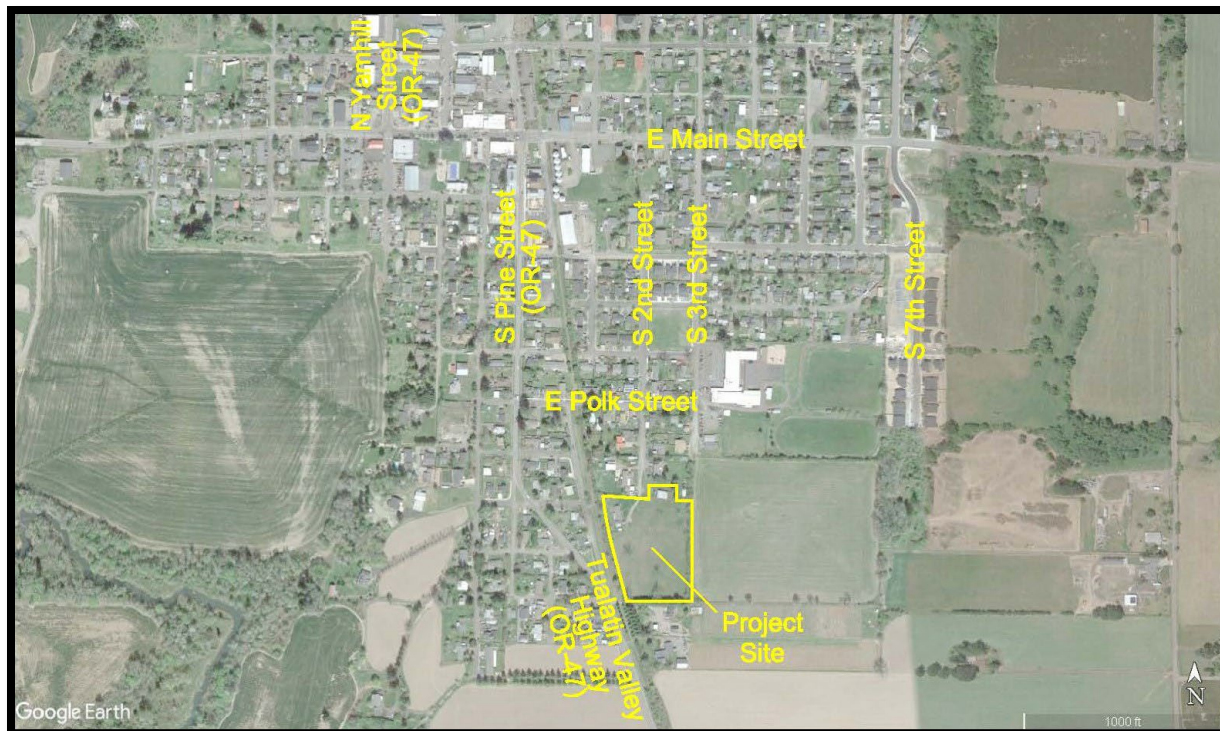


Figure 1: Aerial Photo of Site Vicinity (Image from Google Earth)

Vicinity Streets

The planned project is expected to impact six roadways near the site. Table 1 provides a description of each of the vicinity roadways.

Table 1: Vicinity Roadway Descriptions

Street Name	Jurisdiction	Functional Classification	Speed (MPH)	On-Street Parking	Curbs & Sidewalks	Bicycle Lanes
N Yamhill Street (OR-47)	ODOT/City of Carlton	Regional Hwy/ Local Street	20/30	Partially Permitted	Partial Both Sides	None
S Pine Street (OR-47)	ODOT/City of Carlton	Regional Hwy/ Local Street	20/30	Partially Permitted	Partial Both Sides	None
S 2nd Street	City of Carlton	Local Street	25	Permitted Both Sides	Partial Both Sides	None
S 3rd Street	City of Carlton	School Zone Collector	20/25	Permitted Both Sides	Partial Both Sides	None
S 7th Street	City of Carlton	Collector	25	Permitted Both Sides	Partial Both Sides	None

Table Notes: Functional classification and Jurisdiction based on Carlton TSP and ODOT State Highway Classification Map.



Table 1: Vicinity Roadway Descriptions (Continued)

Street Name	Jurisdiction	Functional Classification	Speed (MPH)	On-Street Parking	Curbs & Sidewalks	Bicycle Lanes
E Main Street	City of Carlton/ Yamhill County	Regional Hwy (STA)/Arterial	20/25/35	Partially Permitted	Partial Both Sides	None
E Polk Street	City of Carlton	School Zone Collector	20/25	Permitted Both Sides	Partial North Side	None

Table Notes: Functional classification and Jurisdiction based on Carlton TSP and ODOT State Highway Classification Map.

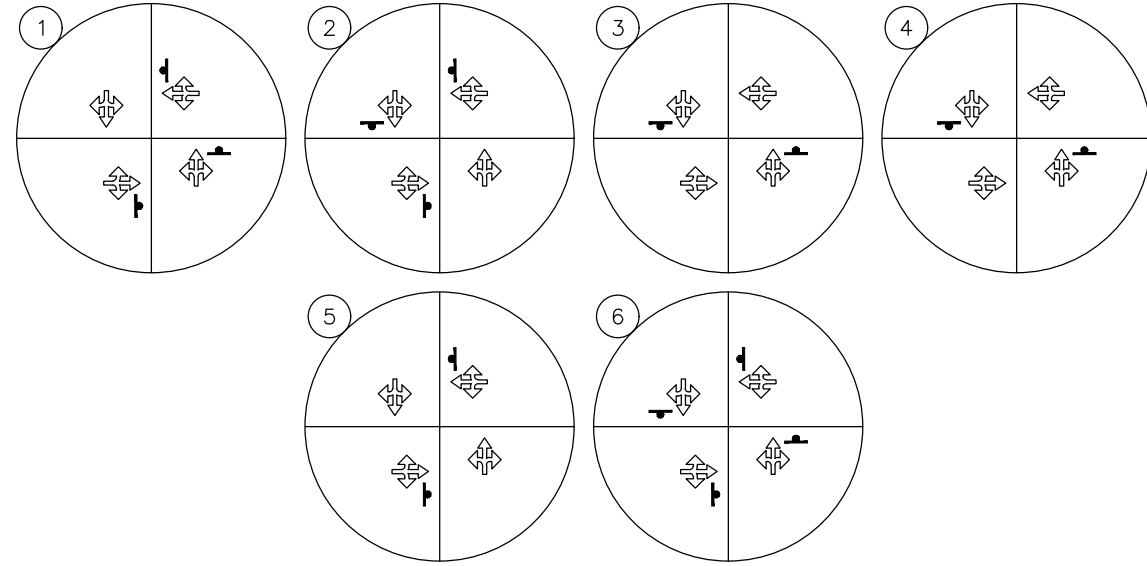
Study Intersections

Based on coordination with agency staff, six intersections were identified for analysis. A summarized description of these study intersections, under their existing lane configurations, is provided in Table 2.

Table 2: Study Intersection Descriptions

Number	Intersection	Geometry	Traffic Control	Phasing/Stopped Approaches
1	N/S Yamhill Street at W Main Street	Four-Legged	Stop-Controlled	NB/EB/WB Stop-Controlled Approaches, WB Right-turns Permitted without Stopping
2	N/S Pine Street at E/W Main Street	Four-Legged	Stop-Controlled	SB/EB/WB Stop-Controlled Approaches, EB Right-turns Permitted without Stopping
3	N/S 3rd Street at E Main Street	Four-Legged	Stop-Controlled	NB/SB Stop-Controlled Approaches
4	N/S 7th Street at E Main Street	Four-Legged	Stop-Controlled	NB/SB Stop-Controlled Approaches
5	S Pine Street at E/W Polk Street	Four-Legged	Stop-Controlled	EB/WB Stop-Controlled Approaches
6	S 3rd Street at E Polk Street	Four-Legged	Stop-Controlled	All-Way Stop-Controlled

A vicinity map showing the project site, vicinity streets, and study intersection configurations is shown in Figure 2.



- LEGEND**
- STUDY INTERSECTION
 - ⊥ STOP SIGN/APPROACH
 - ▨ PROJECT SITE
 - ARTERIAL ROADWAY
 - COLLECTOR ROADWAY
 - LOCAL ROADWAY
 - - - JR3 PLANNED/FUTURE COLLECTOR ROADWAY
 - - - JR3 PLANNED/FUTURE LOCAL ROADWAY



No Scale



Site Trips

Trip Generation

The proposed development will include the construction of 25 single-family detached houses (removing 1 existing house for a net increase of 24 houses) and 14 single-family attached houses for a total of 39 dwelling units (38 net new dwellings). To estimate the number of trips that will be generated by the proposed use, trip rates from the *Trip Generation Manual*¹ were used. Data from the following land use codes were used to estimate site trip generation based on the number of dwelling units:

- 210, *Single-Family Detached Housing*.
- 215, *Single-Family Attached Housing*.

The trip generation calculations show that the proposed project is projected to generate an additional 24 morning peak hour trips, 31 evening peak hour trips, and 326 average weekday trips. The trip generation estimates are summarized in Table 3. Detailed trip generation calculations are included in the technical appendix.

Table 3: Trip Generation Summary

	ITE Code	Size/Rate	Morning Peak Hour			Evening Peak Hour			Weekday Total
			Enter	Exit	Total	Enter	Exit	Total	
<i>Existing Conditions</i>									
Single-Family Detached Houses	210	1 dwelling unit	0	1	1	1	0	1	10
<i>Proposed Conditions</i>									
Single-Family Detached Houses	210	25 dwelling units	5	13	18	15	9	24	236
Single-Family Attached Houses	215	14 dwelling units	2	5	7	5	3	8	100
Total Trips		39 dwelling units	7	18	25	20	12	32	336
<i>Net Change in Site Trip Generation</i>									
Net New Trips		38 dwelling units	7	17	24	19	12	31	326

¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.

Trip Distribution

The directional distribution of site trips was generally based on the distribution utilized in the *S 3rd Street Zone Change Transportation Impact Analysis* (TIA). The TIA had based its trip distribution on the locations of likely trip destinations, locations of major transportation facilities in the site vicinity, and existing travel patterns at the study intersections. The following trip distribution was estimated and used for analysis:

- Approximately 35 percent of site trips will travel to/from the north along N Yamhill Street;
- Approximately 25 percent of site trips will travel to/from the east along E Main Street;
- Approximately 15 percent of site trips will travel to/from the west along W Main Street;
- Approximately 15 percent of site trips will travel to/from the south on S Pine Street;
- Approximately 5 percent of site trips will travel to/from the north on S 3rd Street; and
- Approximately 5 percent of site trips will travel to/from the west along W Grant Street.

Based on the site plan and the locations of available access to the transportation system, site trips are expected to access the greater transportation system via the following locations:

- Approximately 60 percent of site trips will utilize E Polk Street to access S Pine Street; and
- Approximately 40 percent of site trips will utilize S 3rd Street to access E Main Street.

Based a review of ODOT's Statewide Transportation Improvement Program (STIP) and correspondence with ODOT staff, ODOT is planning to construct the Main Street Bypass project² (STIP Project Key 18746), which is intended to reroute OR-47 traffic from E/W Main Street to the north along N Pine Street, E Monroe Street, and N Yamhill Street. The design phase of the project is expected to continue through year 2024 and construction is estimated to begin in 2025. This project is expected to be completed near or shortly after the anticipated 2026 buildout of the proposed subdivision. Therefore, additional trip distribution and assignment analyses were conducted for Intersections 1 and 2 to reflect this change in the transportation system. Details regarding this bypass project are discussed further in the *2026 Background Conditions* section of this report.

The trip distribution and assignment for the site trips generated during the morning, mid-day, and evening peak hours is shown in Figure 3.

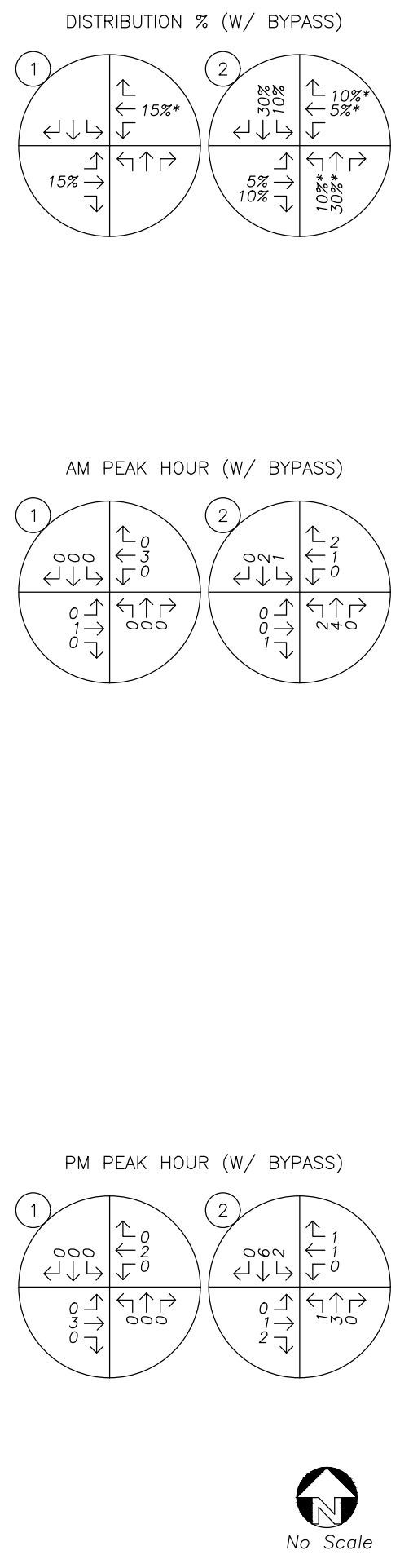
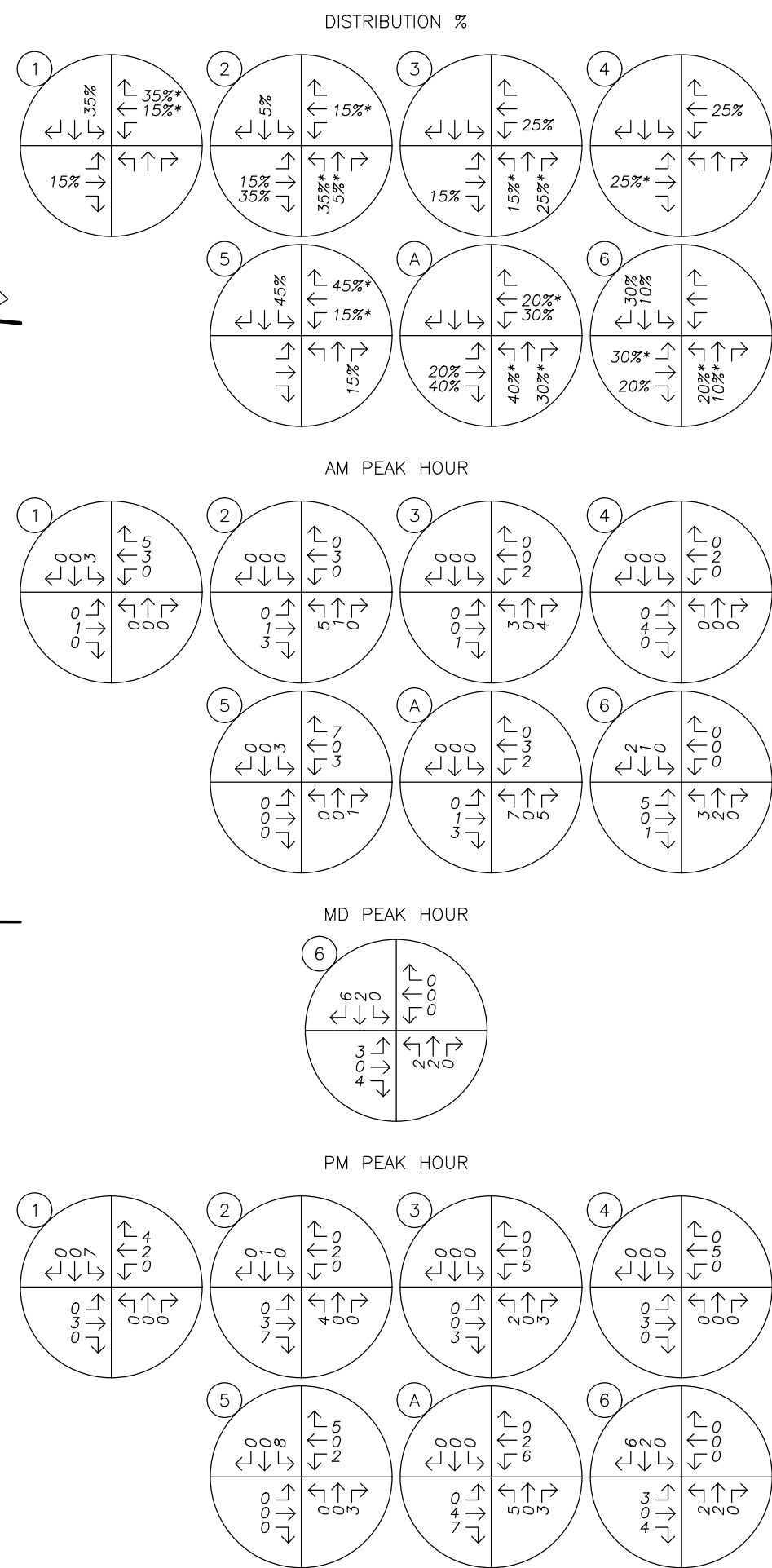
² OR 47: Main Street (Carlton) Design Phase, Region 2: Willamette Valley and Northwest Oregon (Carlton, Yamhill County), <https://www.oregon.gov/odot/projects/pages/project-details.aspx?project=18746>.



LEGEND
 XX% PERCENT OF PROJECT TRIPS

NET TRIP GENERATION			
	IN	OUT	TOTAL
AM	7	17	24
MD/PM	19	12	31

NOTES:
 - OUTBOUND PERCENTAGES ARE *
 - APPROXIMATELY 10 PERCENT OF TRIPS ARRIVE/DEPART TO/FROM LOCALES WITHIN THE SITE VICINITY



No Scale

SITE TRIP DISTRIBUTION & ASSIGNMENT

Proposed Development Plan - Site Trips
 AM, MD, & PM Peak Hours



Traffic Volumes

Existing Conditions

Due to the ongoing COVID-19 viral pandemic, traffic volumes around Oregon have been depressed relative to normal conditions. A review of available traffic count data yielded pre-COVID-19 traffic counts at the following study intersections:

4. N/S 7th Street at E Main Street: Tuesday, May 14, 2019, from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM.
5. S Pine Street at E/W Polk Street: Tuesday, May 14, 2019, from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM.

Given these available counts, the following methodology for data collection and volume adjustment was utilized:

- The historical traffic counts from 2019 were grown to reflect 2022 existing conditions by applying an average linear growth rate of 0.5893 percent per year over a three-year period to the S Pine Street through movements (utilizing ODOT's *2040 Future Volumes Table*) and a two percent per year compounded growth rate over a three-year period for all other turning movement volumes and at the intersection of N/S 7th Street at E Main Street.
- Year 2022 evening peak hour counts were collected at the study intersections where 2019 data isn't available (excluding the intersection of S Pine Street at E/W Polk Street) for the morning, mid-day, and evening peak hours. These counts were collected on Tuesday, June 7, 2022, from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM; and on Thursday, September 15, 2022, from 2:00 PM to 4:00 PM. Note that all traffic counts were collected while schools were in session.
- Since S Pine Street (i.e. OR-47) is under the jurisdiction of ODOT, the 2019 and 2022 highway traffic volumes collected at the intersection of S Pine Street at E/W Polk Street were seasonally adjusted to reflect the 30th highest hour highway volumes per methodologies in ODOT's *Analysis Procedures Manual*³. Based on the Commuter seasonal trend in ODOT's *2021 Seasonal Trend Table*, seasonal factors of 1.0319 for the 2019 counts and 1.0090 for the 2022 counts were calculated and applied to their respective through volumes on S Pine Street.
- The 2019 historical count data at the intersection of S Pine Street at E/W Polk Street (grown to reflect 2022 conditions) and the recently collected 2022 counts at the intersection were compared. Based on the difference in volumes traveling along the north/south legs and east/west intersection legs of S Pine Street at E/W Polk Street, the following adjustment factors were calculated:
 - ODOT Adjustment Factor:
 - Morning Peak Hour: 1.6257
 - Mid-day/Evening Peak Hour: 1.5743

³ Oregon Department of Transportation, *Analysis Procedures Manual*, Updated June 2022.

- Local Adjustment Factor:
 - Morning Peak Hour: 1.0000
 - Mid-day/Evening Peak Hour: 1.4473

These adjustment factors are intended to estimate normal traffic conditions without impacts from the COVID-19 virus (i.e. normal commuter patterns, businesses open, etc).

- The calculated adjustment factors were applied to the traffic counts at all study intersections where 2022 count data was collected (excluding the intersection of S Pine Street at E/W Polk Street where historical data is available and used for the remainder of this study). Additionally, the 2019 counts at the intersection of N/S 7th Street at E Main Street, grown to reflect year 2022 conditions, were utilized for analysis. Trips associated with the nearby JR Meadows 1 Subdivision project which has been constructed as of 2022 (excluding the multifamily housing units) were added to the N/S 7th Street at E Main Street and S Pine Street at E/W Polk Street intersection volumes.

Data was used from each intersection's respective morning and mid-day/evening peak hours. Table 4 presents the calculated adjustment factors for each of the study intersections. Figure 4 shows the existing traffic volumes at the study intersections during the morning, mid-day, and evening peak hours.

Table 4: COVID-19 Adjustment Factor Calculations

	AM Peak Period (7:00 AM - 9:00 AM)	PM Peak Period (4:00 PM - 6:00 PM)
5. S Pine Street at E/W Polk Street (Local)		
East Leg (Eastbound & Westbound)		
Collected 2022 Volumes	155	53
Historical 2019 Volumes	146	90
Compounded Growth Factor (2% Per Year Over 3 Years)	1.0612	1.0612
Historical 2019 Volumes (Grown to 2022)	155	96
New Volumes > Grown Historical Volumes?	Yes	No
Adjustment Factor (East Leg)	1.0000	1.8113
West Leg (Eastbound & Westbound)		
Collected 2022 Volumes	6	12
Historical 2019 Volumes	5	12
Compounded Growth Factor (2% Per Year Over 3 Years)	1.0612	1.0612
Historical 2019 Volumes (Grown to 2022)	5	13
New Volumes > Grown Historical Volumes?	Yes	No
Adjustment Factor (West Leg)	0.8333	1.0833
Average Local Adjustment Factor	1.0000*	1.4473

* Adjustment factor revised to 1.0 if less than this number.

Table 4: COVID-19 Adjustment Factor Calculations (Continued)

	AM Peak Period (7:00 AM - 9:00 AM)	PM Peak Period (4:00 PM - 6:00 PM)
5. S Pine Street at E/W Polk Street (ODOT)		
North Leg (Northbound & Southbound)		
Collected 2022 Volumes	637	860
Seasonal Adjustment Factor	1.0090	1.0090
Adjusted 2022 Volumes	643	868
Historical 2019 Volumes	966	1,301
ODOT Linear Growth Factor (0.5893% Per Year Over 3 Years)	1.0177	1.0177
Seasonal Adjustment Factor	1.0319	1.0319
Historical 2019 Volumes (Grown to 2022)	1,014	1,366
New Volumes > Grown Historical Volumes?	No	No
Adjustment Factor (North Leg)	1.5770	1.5737
South Leg (Northbound & Southbound)		
Collected 2022 Volumes	560	853
Seasonal Adjustment Factor	1.0090	1.0090
Adjusted 2022 Volumes	565	861
Historical 2019 Volumes	901	1,291
ODOT Linear Growth Factor (0.5893% Per Year Over 3 Years)	1.0177	1.0177
Seasonal Adjustment Factor	1.0319	1.0319
Historical 2019 Volumes (Grown to 2022)	946	1,356
New Volumes > Grown Historical Volumes?	No	No
Adjustment Factor (South Leg)	1.6743	1.5749
Average ODOT Adjustment Factor	1.6257	1.5743

2026 Background Conditions

Volume Growth Rate

To provide analysis of the impact of the proposed subdivision on the nearby transportation facilities, an estimate of future traffic volumes is required.

In order to calculate future traffic volumes for non-ODOT facilities, a compounded growth rate of two percent per year was applied to the adjusted existing traffic volumes over a four-year period to approximate traffic volumes under the 2026 background conditions.

To estimate the future traffic volumes for ODOT facilities, linear growth rates were calculated for the traffic volumes along OR-47 (S Pine Street, Main Street, and N Yamhill Street) using ODOT's *2040 Future Volumes Table*. Based on the projected volumes between mileposts 37.85 through 38.01, an average linear growth rate of 0.5893 percent per year was calculated. The ODOT growth rate was applied to the mainline ODOT turning movements of these applicable study intersections while a compounded growth rate of two percent per year was applied to the turning movement traffic volumes traveling to/from local facility intersection legs.

In-Process Development Trips

In addition to the traffic growth described above, in-process development data associated with the recently approved JR Meadows 1 (multifamily housing units only) and JR Meadows 2 Subdivision projects were incorporated in the 2026 background volumes. These projects are not fully contributing trips to the transportation system but may potentially be by the 2026 buildout year of the site. Additional trips corresponding to the in-process developments were added to the existing year traffic volumes in addition to the three years of traffic growth at each of the applicable study intersections. To maintain a conservative analysis of operation at the study intersections, the in-process developments were assumed to be fully built-out by year 2026.

ODOT STIP Projects

Based a review of ODOT's STIP and correspondence with ODOT staff, ODOT is planning the following improvements:

- Construct the Main Street Bypass project (STIP Project Key 18746), which is intended to reroute OR-47 traffic from E/W Main Street to the north along N Pine Street, E Monroe Street, and N Yamhill Street. In addition to constructing this alternative route of travel through Carlton, traffic controls will be revised at the intersections of N/S Yamhill Street at W Main Street and N/S Pine Street at E/W Main Street as well as other intermittent intersections along the bypass route. As part of the bypass project, jurisdiction of W Main Street will be transferred over from ODOT to the City.
- Reconstruct curb ramps along this segment of E Main Street to meet ADA requirements (STIP Project Key 22392). The project is currently fully funded.

Funding for the Main Street Bypass project is currently in place with the exception that additional funding may be necessary to install revised traffic controls at nearby intersections. Determination of necessary revisions to traffic controls will be evaluated by ODOT as part of the project's on-going design phase. The design phase of the project is expected to continue through year 2024 and construction is estimated to begin in 2025. A conceptual schematic of the Main Street Bypass project is included in the appendix to this report for reference purposes.

The aforementioned listed projects are expected to be completed near or shortly after the anticipated 2026 buildout of the proposed subdivision. Therefore, future year 2026 analysis scenarios reviewed the transportation system with the Main Street Bypass in place. To estimate how traffic volumes may be impacted by the project, it is assumed that a majority of north/south traffic along OR-47 and north/east traffic along N Yamhill Street/E Main Street, which are expected to travel through Carlton, may reroute from the segment of E Main Street between N/S Yamhill Street and N/S Pine Street to utilize the planned alternative route. For the purposes of this analysis, it is estimated that approximately 80 percent of westbound right-turn and southbound left-turn vehicles at the intersection of N/S Yamhill Street at W Main Street may reroute from the intersection and turn to/from the north of the N/S Pine Street at E/W Main Street intersection.

Figure 5 shows the projected year 2026 background year traffic volumes at the study intersections during the morning, mid-day, and evening peak hours with ODOT's bypass project constructed. Figures depicting the rerouted background year traffic volumes and in-process trips are included in the appendix to this report.

2026 Buildout Conditions

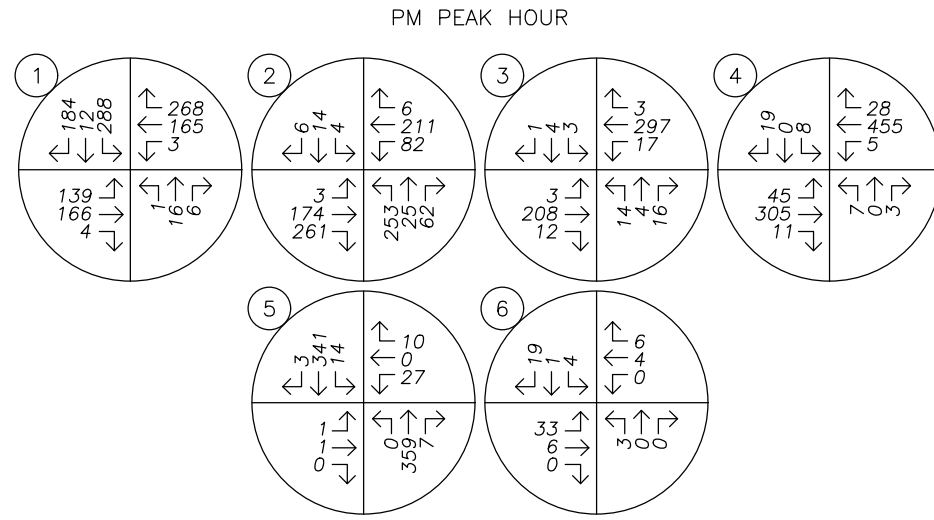
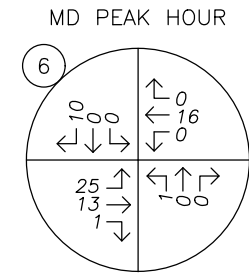
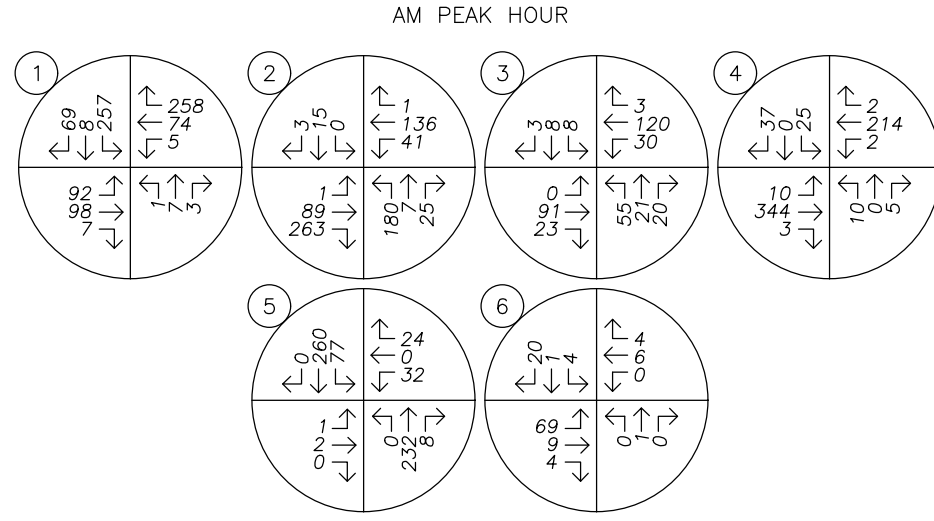
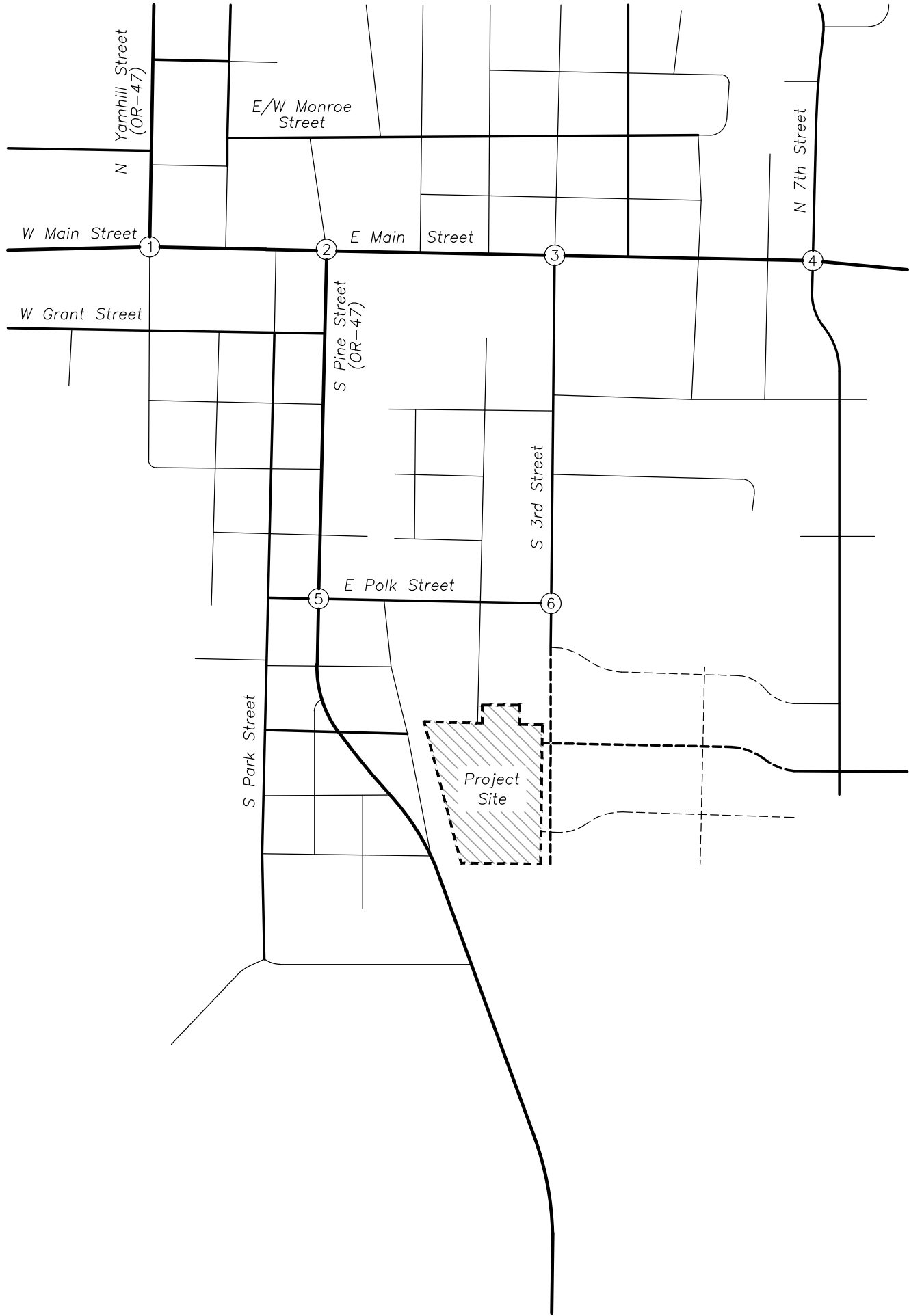
Peak hour trips calculated to be generated by the proposed development, as described earlier within the *Site Trips* section, were added to the projected year 2026 background traffic volumes to obtain the expected 2026 site buildout year volumes.

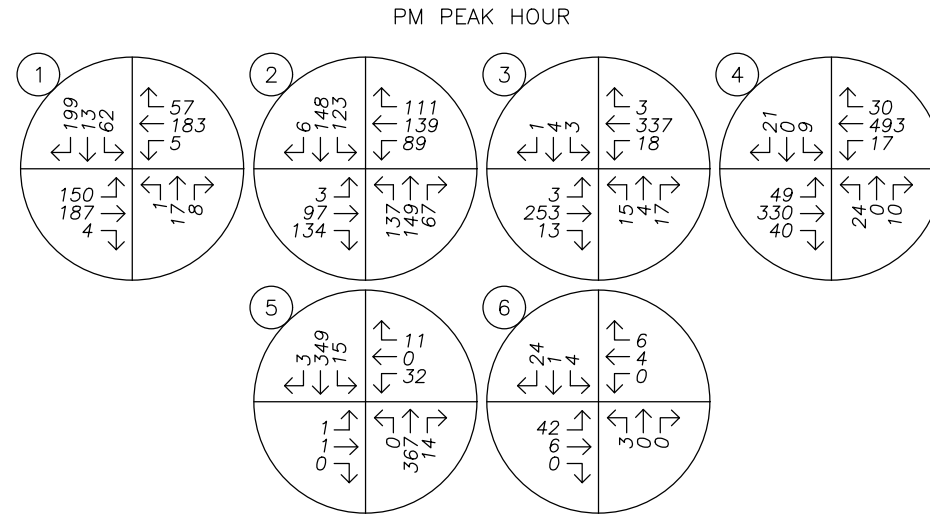
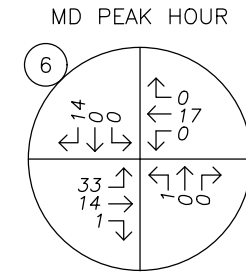
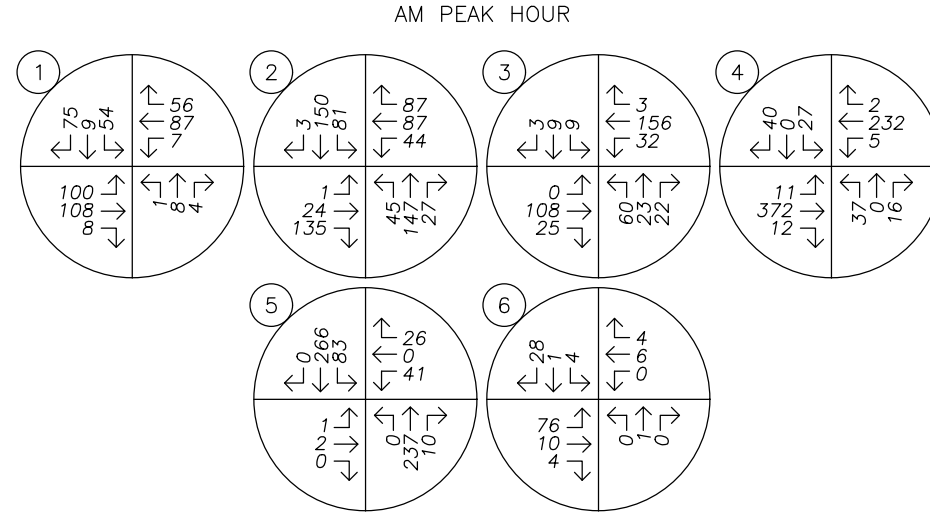
Figure 6 shows year 2026 site buildout year volumes at the study intersections during the morning, mid-day, and evening peak hours.

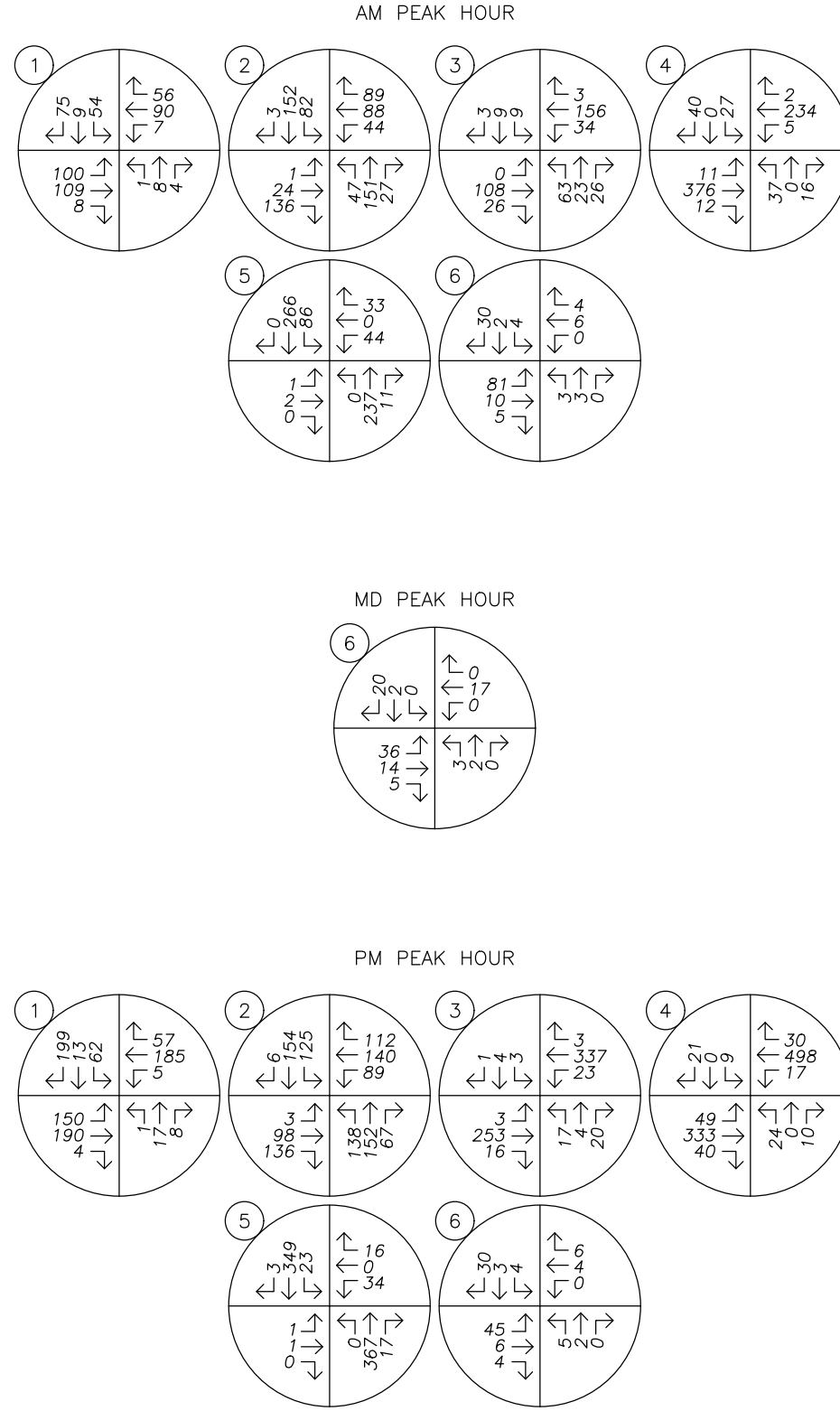
2026 Buildout Conditions with JR Meadows No. 3 Subdivision

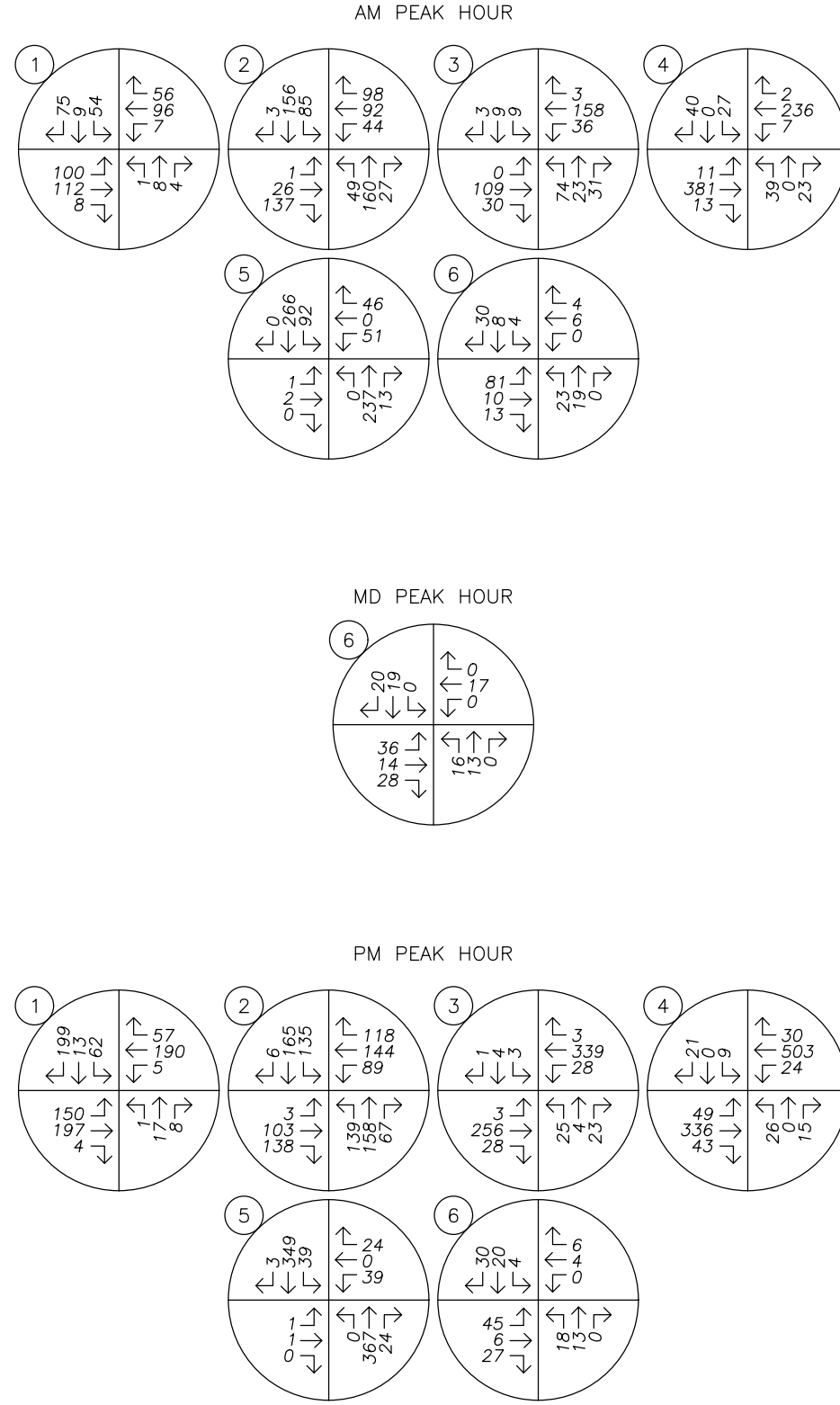
Although not approved for development, the JR Meadows No. 3 Subdivision, located east of the project site, could potentially be approved for development with an estimated buildout year of 2026. The 101-unit residential subdivision consists of 63 single-family detached houses and 38 single-family attached houses. Referring to the *JR Meadows No. 3 Subdivision TIA*, dated November 28, 2022, a second buildout scenario was reviewed where trips generated by the subdivision project were added to the 2026 background year volumes in addition to the site trips.

Figure 7 shows year 2026 site buildout year volumes with the planned JR Meadows No. 3 Subdivision trips at the study intersections during the morning, mid-day, and evening peak hours. A figure depicting trip assignment for the JR Meadows No. 3 Subdivision is included in the appendix to this report.









No Scale



TRAFFIC VOLUMES

Year 2026 Buildout Conditions with JR Meadows No. 3 Subdivision
AM, MD, & PM Peak Hours

Safety Analysis

Crash History Review

Using data obtained from ODOT's Crash Data System, a review of approximately five years of the most recent available crash history (January 2016 through December 2020) was performed at the study intersections. The crash data was evaluated based on the number of crashes, the type of collisions, the severity of the collisions, and the resulting crash rate for the intersection.

Crash rates provide the ability to compare safety risks at different intersections by accounting for both the number of crashes that have occurred during the study period and the number of vehicles that typically travel through the intersection. Crash rates were calculated using the common assumption that traffic counted during the evening peak hour represents approximately 10 percent of the annual average daily traffic (AADT) at the intersection. Crash rates in excess of 1.00 crashes per million entering vehicles (CMEV) may be indicative of design deficiencies and therefore require a need for further investigation and possible mitigation.

With regard to crash severity, ODOT classifies crashes into the following five categories:

- Property Damage Only (*PDO*);
- Possible Injury – Complaint of Pain (*Injury C*);
- Non-Incapacitating Injury (*Injury B*),
- Incapacitating Injury – Bleeding, Broken Bones (*Injury A*); and
- Fatality or Fatal Injury

The study intersections along OR-47 are ODOT facilities, which adhere to the crash analysis methodologies within ODOT's APM. According to *Exhibit 4-1: Intersection Crash Rates per MEV by Land Type and Traffic Control* of the APM, intersections which experience crash rates in excess of their respective 90th percentile crash rates should be "flagged for further analysis". For four-legged, unsignalized intersections in urban settings (i.e. intersections within City limits), the 90th percentile rate is 0.408 CMEV for ODOT intersections.

Table 5 provides a summary of crash types while Table 6 summarizes crash severities and rates for each of the study intersections. Detailed crash data is provided in the appendix to this report.

Table 5: Crash Type Summary

Number	Intersection	Crash Type						Total
		Rear End	Turn/ Angle	Fixed Object	Side swipe	Ped/ Bike	Other	
1	N/S Yamhill Street at W Main Street	0	1	0	0	0	1	2
2	N/S Pine Street at E/W Main Street	0	4	0	0	0	0	4
3	N/S 3rd Street at E Main Street	0	0	0	0	0	0	0
4	N/S 7th Street at E Main Street	0	0	0	0	0	0	0
5	S Pine Street at E/W Polk Street	0	0	0	0	0	0	0
6	S 3rd Street at E Polk Street	0	0	0	0	0	0	0

Table 6: Crash Severity and Rate Summary

Number	Intersection	Crash Severity						Total Crashes	AADT	Crash Rate
		PDO	C	B	A	Fatal	Unknown			
1	N/S Yamhill Street at W Main Street	2	0	0	0	0	0	2	12,520	0.09
2	N/S Pine Street at E/W Main Street	1	2	1	0	0	0	4	11,010	0.20
3	N/S 3rd Street at E Main Street	0	0	0	0	0	0	0	5,820	0.00
4	N/S 7th Street at E Main Street	0	0	0	0	0	0	0	8,860	0.00
5	S Pine Street at E/W Polk Street	0	0	0	0	0	0	0	7,880	0.00
6	S 3rd Street at E Polk Street	0	0	0	0	0	0	0	760	0.00

Based on the review of the available crash data, no significant trends or crash patterns were identified at any of the study intersections that were indicative of safety concerns. In addition, none of the study intersections exhibit crash rates near or above the 1.00 CMEV threshold nor do any of the ODOT study intersections have a crash rate exceeding ODOT's 90th percentile rate. Accordingly, no safety mitigation is recommended per the crash data analysis.

Warrant Analysis

Preliminary traffic signal warrants were examined for the unsignalized study intersections to determine whether the installation of a new traffic signal will be warranted at the intersections by the 2026 site buildout year. Based on the analysis, traffic signal warrants are projected to be met at the following study intersections:

1. N/S Yamhill Street at W Main Street under existing conditions. However, after the ODOT Main Street Bypass project is implemented, warrants are not projected to be met under year 2026 site buildout conditions with the JR Meadows No. 3 Subdivision constructed.
2. N/S Pine Street at E/W Main Street under existing conditions. Additionally, warrants are met under year 2026 background conditions, without impacts from the proposed development, following implementation of the ODOT Main Street Bypass project.

For the intersection of N/S Yamhill Street at W Main Street where signal warrants aren't projected to be met with the bypass project implemented, all-way stop-control warrants were evaluated. To determine whether the installation of all-way stop-controls is warranted at the intersection, the *Manual of Uniform Traffic Control Devices for Streets and Highways*⁴ (MUTCD) was referenced. According to *Section 2B.07 Multi-Way Stop Applications* of the MUTCD, installation of a multi-way stop control may be implemented at an intersection given the following criteria are considered:

- A. *Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*
- B. *Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*
- C. *Minimum volumes:*
 1. *The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*
 2. *The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but*
 3. *If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*

⁴ Federal Highway Administration (FHWA), American Traffic Safety Services Association (ATSSA), Institute of Transportation Engineers (ITE), American Association of State Highway and Transportation Officials (AASHTO), *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD), 2009 Edition, 2010.

- D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values, Criterion C.3 is excluded from this condition.*

Reviewing the above, criterion C.1 is met under year 2026 background conditions, without impacts from the proposed development.

Although traffic signal warrants at the intersection of N/S Pine Street at E/W Main Street and all-way stop-control warrants at the intersection of N/S Yamhill Street at W Main Street are projected to be met under year 2026 conditions with ODOT's Main Street Bypass project implemented, revisions to traffic controls at these intersections are anticipated to occur as part of the ODOT project. Pending a more in-depth analysis by ODOT, such revisions may include alternative mitigation to meet City and ODOT operation standards, noting that the bypass project is expected to be completed by or near year 2026. Since the S 2nd Street Subdivision project is not expected to trigger the need for mitigation at these intersections (i.e. warrants will be met without project impacts), incorporating these changes to intersection traffic controls as part of the proposed subdivision application are not recommended.

No other traffic signals are projected to be warranted at the other study intersections under any analysis scenario.

Operational Analysis

Intersection Capacity Analysis

A capacity and delay analysis was conducted for each of the study intersections per the signalized and unsignalized intersection analysis methodologies in the *Highway Capacity Manual* (HCM)⁵. Intersections are generally evaluated based on the average control delay experienced by vehicles and are assigned a grade according to their operation. The level of service (LOS) of an intersection can range from LOS A, which indicates very little or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay.

Performance Standards

The City of Carlton does not have an adopted performance standard for intersection operation. Generally, unsignalized intersections operating at LOS E are considered to be operating acceptably.

The study intersections along N Yamhill Street and S Pine Street operate under the jurisdiction of ODOT and must meet standards established in the *Oregon Highway Plan*. Based on the highway's classification, location, and posted speed, the following operation standards apply:

- For ODOT intersections along W Main Street, these intersections are located along/within a Special Transportation Area (STA). Since this segment of OR-47 is not classified as a Freight Route, these intersections are required to operate with a v/c ratio no greater than 1.00.
- With a posted speed of 30 mph along S Pine Street, the intersection of S Pine Street at E/W Polk Street is required to operate with a v/c ratio of 0.90 or less.
- With the Main Street Bypass project complete, jurisdiction of the N/S Yamhill Street at W Main Street intersection will be transferred over to the City of Carlton whereby the City's operation standards would be applicable.

ODOT Main Street Bypass Project

As part of ODOT's Main Street Bypass project, modifications to traffic controls at intersections directly impacted by the project will be evaluated by ODOT pending a future analysis of the surrounding area with the Main Street Bypass. The Main Street Bypass project is anticipated to be completed near or shortly after 2026 with revisions to traffic controls in place. Although ODOT may find alternative mitigation preferable at these intersections, for the purposes of this analysis the following revisions to traffic controls were considered:

- N/S Yamhill Street at W Main Street: Convert the intersection to all-way stop-control.
- N/S Pine Street at E/W Main Street: Install a traffic signal at the intersection. Note that traffic signal warrants are projected to be met at the intersection with and without the Main Street Bypass project, and regardless of whether or not the proposed development is constructed.

⁵ Transportation Research Board, *Highway Capacity Manual 6th Edition*, 2016.

Regarding the above traffic control revisions, the existing single-lane approach configurations at the two study intersections were maintained.

Delay & Capacity Analysis

The operational and capacity analysis were conducted utilizing Trafficware's Synchro 10 software. However, the Synchro software does not provide an overall intersection v/c ratio for signalized intersections when utilizing HCM 6th Edition methodologies. Therefore, signalized intersection v/c ratios were calculated utilizing methodologies presented in ODOT's APM *Section 13 Signalized Intersection Analysis*.

The LOS, delay, and v/c ratio results of the capacity analysis are shown in Table 7 for the morning, mid-day, and evening peak hours. Specific to two-way stop-controlled intersections, the highest minor-street delay, LOS, and v/c ratio at the intersection was reported regardless of approach. For all-way stop-controlled intersections the overall LOS and delay was reported while the highest approach v/c ratio was reported. Detailed calculations as well as tables showing the relationship between delay and LOS are included in the appendix to this report.

Table 7: Intersection Capacity Analysis Summary

	AM Peak Hour			PM Peak Hour		
	LOS	Delay (s)	v/c	LOS	Delay (s)	v/c
1. N/S Yamhill Street at W Main Street						
Existing Conditions	D	34	0.68	F	>120	>1.00
2026 Background Conditions*	A	10	0.35	B	14	0.57
2026 Buildout Conditions*	A	10	0.35	B	14	0.58
2026 Buildout Conditions w/ JRM No. 3*	A	10	0.36	B	14	0.59
2. N/S Pine Street at E/W Main Street						
Existing Conditions	C	18	0.46	F	79	0.98
2026 Background Conditions*	A	7	0.43	A	8	0.56
2026 Buildout Conditions*	A	7	0.43	A	8	0.57
2026 Buildout Conditions w/ JRM No. 3*	A	7	0.45	A	9	0.58
3. N/S 3rd Street at E Main Street						
Existing Conditions	B	13	0.24	B	14	0.07
2026 Background Conditions	C	15	0.29	C	15	0.09
2026 Buildout Conditions	C	15	0.31	C	15	0.10
2026 Buildout Conditions w/ JRM No. 3	C	16	0.36	C	16	0.13

Table Notes: **BOLDED** text indicates intersection operation above jurisdictional standards.

* Traffic controls revised as part of the ODOT Main Street Bypass project.

Table 7: Intersection Capacity Analysis Summary (Continued)

	AM Peak Hour			PM Peak Hour		
	LOS	Delay (s)	v/c	LOS	Delay (s)	v/c
4. N/S 7th Street at E Main Street						
Existing Conditions	B	14	0.13	C	19	0.07
2026 Background Conditions	C	17	0.16	C	24	0.16
2026 Buildout Conditions	C	17	0.16	C	24	0.16
2026 Buildout Conditions w/ JRM No. 3	C	17	0.18	C	24	0.19
5. S Pine Street at E/W Polk Street						
Existing Conditions	C	17	0.15	C	20	0.17
2026 Background Conditions	C	17	0.19	C	20	0.20
2026 Buildout Conditions	C	18	0.22	C	20	0.20
2026 Buildout Conditions w/ JRM No. 3	C	18	0.27	C	22	0.26
6. S 3rd Street at E Polk Street						
Existing Conditions	A	8	0.20	A	7	0.06
2026 Background Conditions	A	8	0.22	A	7	0.07
2026 Buildout Conditions	A	8	0.21	A	7	0.08
2026 Buildout Conditions w/ JRM No. 3	A	9	0.24	A	7	0.11
6. S 3rd Street at E Polk Street (MD Peak Hour)						
Existing Conditions	A	8	0.07			
2026 Background Conditions	A	8	0.09			
2026 Buildout Conditions	A	8	0.10			
2026 Buildout Conditions w/ JRM No. 3	A	8	0.14			

Table Notes: **BOLDED** text indicates intersection operation above jurisdictional standards.

Provided the ODOT's Main Street Bypass project includes modifications to traffic controls at intersections impacted by the planned Main Street Bypass project, all study intersections are projected to operate acceptably per their respective jurisdictional standards through the 2026 site buildout year, with or without the nearby JR Meadows No. 3 Subdivision constructed. Accordingly, no other capacity related mitigation beyond the implementation of the Main Street Bypass project is necessary or recommended as part of the S 2nd Street Subdivision application.

S 3rd Street at E Polk Street Analysis

At the request of the City's transportation consultant additional analyses were conducted at the intersection of S 3rd Street at E Polk Street, inclusive of mid-day peak hour analyses to capture operation during the nearby elementary school's afternoon bell time. Per the operational analysis and with the S 2nd Street Subdivision (plus the nearby planned JR Meadows No. 3 Subdivision) constructed, the intersection is projected to operate at LOS A for all analysis scenarios. As described in the *Crash History Review* section, there were no reported crashes at the intersection over the most recent five years of available crash data.

With regard to pedestrian travel at the intersection, on days when the elementary school was in session, 1 pedestrian was counted crossing the east intersection leg (i.e. the driveway offset to the north) and 12 pedestrians were counted crossing the south intersection leg between the hours of 7:00 AM and 9:00 AM (two-hour period). Between 2:00 PM to 6:00 PM (four-hour period), which includes the afternoon bell time of the nearby elementary school, 4 pedestrians had crossed the south intersection leg and 2 pedestrians crossed the north intersection leg. According to the *Manual on Uniform Traffic Control Devices, 2009 Edition, Chapter 4C.06 Warrant 5, School Crossing*, the installation of a traffic signal at an intersection may be considered if adequate vehicular gaps to cross the intersection are unavailable and if a minimum of 20 school children cross during the highest hour of traffic. Assuming all pedestrians crossing were school children, all pedestrians were to cross at a single intersection crosswalk, and all the crossing pedestrians during the morning counts and afternoon/evening counts each occurred during a single morning peak hour and single afternoon/evening peak hour, the minimum pedestrian threshold for requiring a traffic signal to accommodate school children would not be met. Since the intersection operates at LOS A, adequate gaps in traffic for pedestrians crossing the intersection are expected to be available.

Based on a review of operation, safety, and crossing pedestrians, the intersection of S 3rd Street at E Polk Street is expected to operate efficiently and safely through the 2026 site buildout year with the nearby JR Meadows No. 3 Subdivision also constructed. Regardless, pedestrian improvements will be implemented to the nearby transportation system as part of the JR Meadows No. 3 Subdivision project. A minimum 20-foot paved roadway with a sidewalk on the east side will be constructed on S 3rd Street to provide vehicle and pedestrian access between the development and the intersection of S 3rd Street at E Polk Street. No other mitigation at the intersection is necessary or recommended.

Conclusions

- No significant trends or crash patterns were identified at any of the study intersections that were indicative of safety concerns. Accordingly, no safety mitigation is recommended per the crash data analysis.
- Traffic signal warrants are projected to be met at the following study intersections:
 - N/S Yamhill Street at W Main Street – Under existing conditions, but not under 2026 conditions with the planned ODOT Main Street Bypass project.
 - N/S Pine Street at E/W Main Street – Under existing conditions and year 2026 conditions with the planned ODOT Main Street Bypass project.

For the intersection of N/S Yamhill Street at W Main Street under year 2026 conditions with the bypass project, all-way stop-control warrants are projected to be met at the intersection.

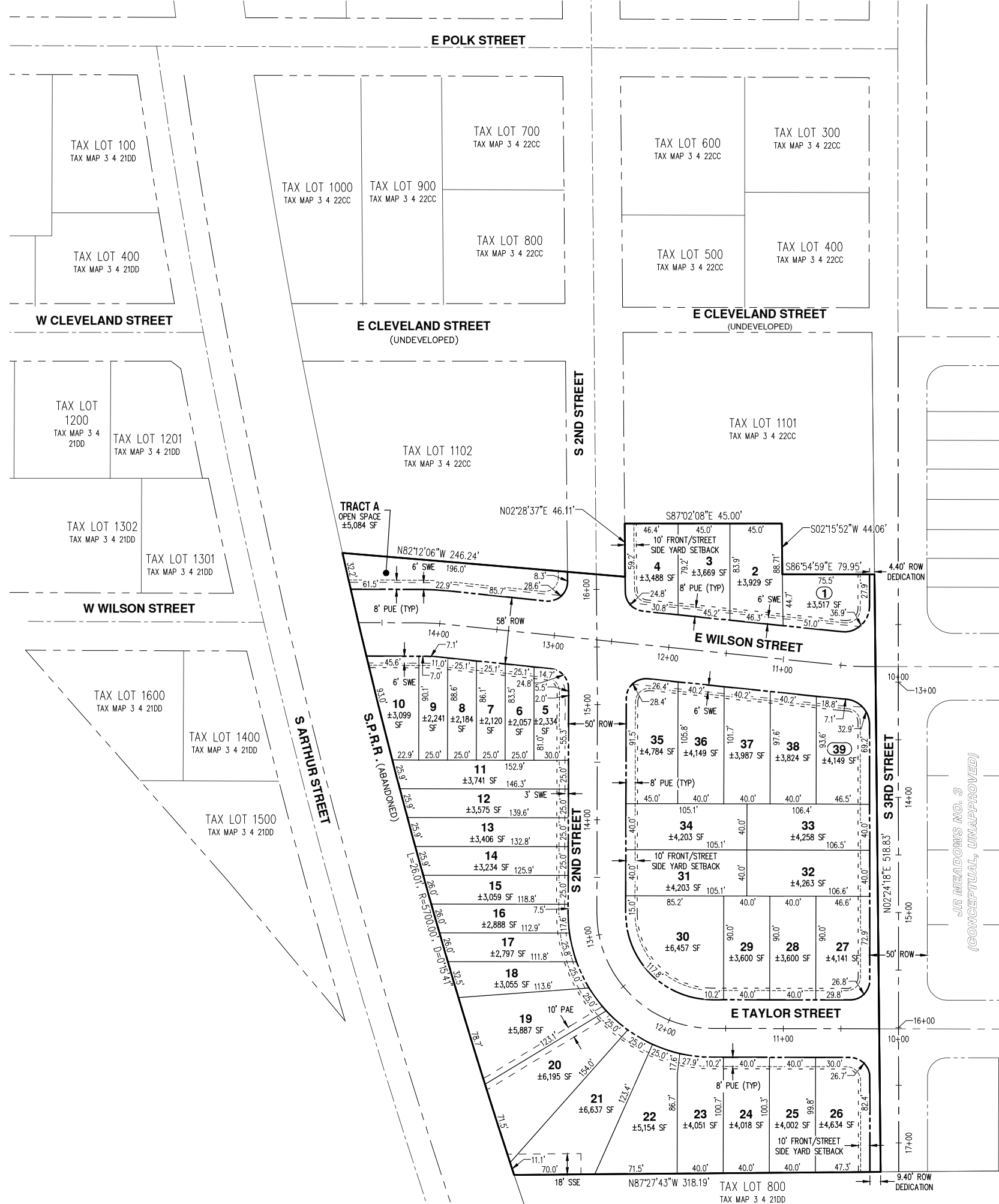
As part of the Main Street Bypass project, revisions to traffic controls at these intersections (inclusive of traffic signals or all-way stop-controls if deemed necessary) are anticipated pending a more in-depth analysis by ODOT. Therefore, the installation of traffic signals, all-way stop-controls, or other traffic control mitigation, as part of the S 2nd Street Subdivision project are not necessary or recommended. No other traffic signals are projected to be warranted at the other study intersections under any analysis scenario.

- Based on a review of operation, safety, and crossing pedestrians, the intersection of S 3rd Street at E Polk Street is expected to operate efficiently and safely through the 2026 site buildout year with the nearby JR Meadows No. 3 Subdivision also constructed. Regardless, pedestrian improvements will be implemented to the nearby transportation system as part of the JR Meadows No. 3 Subdivision project. A minimum 20-foot paved roadway with a sidewalk on the east side will be constructed on S 3rd Street to provide vehicle and pedestrian access between the development and the intersection of S 3rd Street at E Polk Street. No other mitigation at the intersection is necessary or recommended.
- All study intersections are projected to operate acceptably per their respective jurisdictional standards through the 2026 site buildout year with the nearby JR Meadows No. 3 Subdivision also constructed, provided ODOT's Main Street Bypass project includes modifications to traffic controls at intersections directly impacted by the planned project.

Appendix A

Site Plan





EASEMENT LEGEND	
PUE	PUBLIC UTILITY EASEMENT
PAE	PUBLIC ACCESS EASEMENT
SWE	SIDEWALK EASEMENT
SSE	PUBLIC SANITARY SEWER EASEMENT

NOTE:
 THE PURPOSE OF THIS PRELIMINARY SUBDIVISION PLAT IS TO SHOW LOT DIMENSIONS AND AREAS FOR PLANNING PURPOSES. THIS IS NOT AN OFFICIAL RECORDED FINAL PLAT AND IS NOT TO BE USED FOR SURVEY PURPOSES. ALL DIMENSIONS ARE SUBJECT TO CHANGE.

TRACT NOTES:
 1. TRACT A SHALL EITHER BE OWNED AND MAINTAINED BY A HOMEOWNERS ASSOCIATION AS OPEN SPACE OR DEDICATED TO THE CITY OF CARLTON AS A PARK.

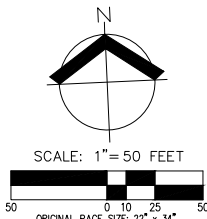
MIXED DENSITY RESIDENTIAL (MX) DEVELOPMENT STANDARDS:

- LOT DIMENSIONS:**
- NO MIN. LOT SIZE, EXCEPT AS LOT SIZE IS CONTROLLED BY OVERALL MX ZONE DENSITY AND LOT COVERAGE REQUIREMENTS.
 - MIN. LOT FRONTAGE - 25 FT
 - MAX. LOT FRONTAGE - 100 FT
 - MIN. ATTACHED LOT FRONTAGE - 6 FT/UNIT, MIN. 24 FT
 - MAX. ATTACHED LOT FRONTAGE - 30 FT/UNIT
- MIN. SETBACKS:**
- FRONT - 10 FT
 - ALLEY - 5 FT
 - PORCHES MAY EXTEND WITHIN FRONT SETBACK TO WITHIN 5 FEET OF FRONT PROPERTY LINE.
 - NO OTHER MIN. SETBACKS.
- LOT COVERAGE:**
- TOTAL LOT COVERAGE, INCLUDING BUILDINGS, ROOFED STRUCTURES, AND IMPERVIOUS PAVED SURFACES, SHALL NOT EXCEED 75%.
- DENSITY:**
- AVERAGE DENSITY OF 9 DWELLING UNITS (DU) PER ACRE OR LESS.
 - AT LEAST 25% OF UNITS MUST BE EITHER IN MULTI-FAMILY OR ATTACHED SINGLE-FAMILY STRUCTURES.

DENSITY CALCULATIONS:

GROSS SITE AREA = ±4.87 AC
 DENSITY = GROSS ACRES * DU/GROSS ACRE
 DU/GROSS ACRE = 9
 DENSITY = ±4.87 AC * 9 DU/GROSS ACRE
 = 43 UNITS
 MAXIMUM DENSITY PERMITTED = 43 UNITS
 ACHIEVED DENSITY = 39 UNITS / ±4.87 AC
 = 8.0 DU/GROSS ACRE
 % ATTACHED UNITS = 14 ATTACHED UNITS / 39 TOTAL UNITS
 = 35.9% ATTACHED SINGLE-FAMILY UNITS

NOTE:
 THESE PLANS ASSUME THE ADJACENT JR MEADOWS NO. 3 DEVELOPMENT WILL BE CONSTRUCTED PRIOR TO OR CONCURRENT WITH THIS DEVELOPMENT.



**PRELIMINARY SUBDIVISION PLAT WITH FUTURE BUILDING SETBACKS
 S 2ND STREET SUBDIVISION
 CARLTON, OREGON**

**PRELIMINARY
 NOT FOR
 CONSTRUCTION**

JOB NUMBER:	4206
DATE:	01/24/2023
DESIGNED BY:	CMS
DRAWN BY:	NRA/JNW
CHECKED BY:	MBH

Appendix B

Trip Generation Calculations





TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition
Existing Conditions

Land Use: Single-Family Detached Housing
Land Use Code: 210
Land Use Subcategory: All Sites
Setting/Location: General Urban/Suburban
Variable: Dwelling Units
Trip Type: Vehicle
Variable Quantity: 1

WARNING: Variable Quantity is less than Minimum Survey Size for Peak Hours

AM PEAK HOUR

Trip Rate: 0.7

	Enter	Exit	Total
Directional Split	26%	74%	
Trip Ends	0	1	1

PM PEAK HOUR

Trip Rate: 0.94

	Enter	Exit	Total
Directional Split	63%	37%	
Trip Ends	1	0	1

WEEKDAY

Trip Rate: 9.43

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	5	5	10

SATURDAY

Trip Rate: 9.48

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	5	5	10



TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition
Proposed Conditions

Land Use: Single-Family Detached Housing
Land Use Code: 210
Land Use Subcategory: All Sites
Setting/Location: General Urban/Suburban
Variable: Dwelling Units
Trip Type: Vehicle
Variable Quantity: 25

AM PEAK HOUR

Trip Rate: 0.7

	Enter	Exit	Total
Directional Split	26%	74%	
Trip Ends	5	13	18

PM PEAK HOUR

Trip Rate: 0.94

	Enter	Exit	Total
Directional Split	63%	37%	
Trip Ends	15	9	24

WEEKDAY

Trip Rate: 9.43

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	118	118	236

SATURDAY

Trip Rate: 9.48

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	119	119	238



TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition
Proposed Conditions

Land Use: Single-Family Attached Housing
Land Use Code: 215
Land Use Subcategory: All Sites
Setting/Location: General Urban/Suburban
Variable: Dwelling Units
Trip Type: Vehicle
Variable Quantity: **14**

AM PEAK HOUR

Trip Rate: 0.48

	Enter	Exit	Total
Directional Split	31%	69%	
Trip Ends	2	5	7

PM PEAK HOUR

Trip Rate: 0.57

	Enter	Exit	Total
Directional Split	57%	43%	
Trip Ends	5	3	8

WEEKDAY

Trip Rate: 7.2

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	50	50	100

SATURDAY

Trip Rate: 8.76

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	61	61	122

Source: Trip Generation Manual, 11th Edition

Appendix C

Traffic Counts

Figure A: In-Process Development Trips

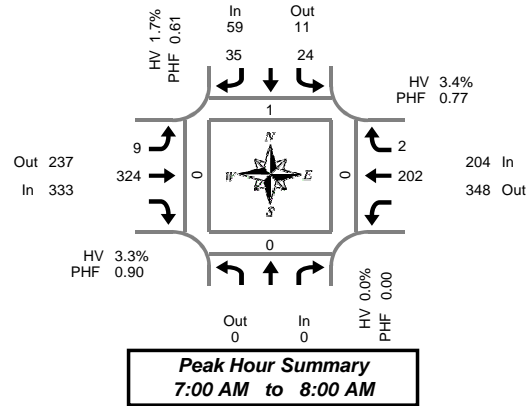
Figure B: Reroute Volumes

Figure C: JR Meadows No. 3 Subdivision Trip Distribution & Assignment

Total Vehicle Summary



Clay Carney
(503) 833-2740



N 7th St & E Main St

Tuesday, May 14, 2019
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound N 7th St				Southbound N 7th St				Eastbound E Main St			Westbound E Main St				Interval Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	L	R	Total	Bikes	L	T	Bikes	T	R	Bikes	North		South	East	West	
7:00 AM				0	3	4	0	0	29	0	10	0	0	46	1	0	0	0		
7:05 AM				0	3	5	0	0	28	0	10	0	0	46	0	0	0	0		
7:10 AM				0	7	2	0	0	23	0	10	0	0	42	0	0	0	0		
7:15 AM				0	2	4	0	1	29	0	13	0	0	49	0	0	0	0		
7:20 AM				0	1	1	0	1	22	0	14	0	0	39	0	0	0	0		
7:25 AM				0	1	4	0	0	23	0	17	1	0	46	0	0	0	0		
7:30 AM				0	2	4	0	0	30	0	21	1	0	58	0	0	0	0		
7:35 AM				0	0	1	0	0	28	0	25	0	1	54	0	0	0	0		
7:40 AM				0	0	4	0	3	31	0	16	0	0	54	0	0	0	0		
7:45 AM				0	2	3	0	0	27	0	24	0	0	56	0	0	0	0		
7:50 AM				0	1	2	0	1	21	0	25	0	0	50	0	0	0	0		
7:55 AM				0	2	1	0	3	33	0	17	0	0	56	0	0	0	0		
8:00 AM				0	0	3	0	1	23	0	16	0	0	43	0	0	0	0		
8:05 AM				0	0	2	0	2	23	0	8	0	0	35	1	0	0	0		
8:10 AM				0	1	2	0	0	20	0	9	1	0	33	1	0	0	0		
8:15 AM				0	1	1	0	2	28	0	5	0	0	37	0	0	0	0		
8:20 AM				0	2	2	0	0	23	0	14	0	0	41	0	0	0	0		
8:25 AM				0	1	4	0	0	23	0	16	0	0	44	0	0	0	0		
8:30 AM				0	1	2	0	0	18	0	16	1	0	38	0	0	0	0		
8:35 AM				0	1	1	0	2	30	0	9	0	0	43	1	0	0	0		
8:40 AM				0	1	1	0	1	24	0	9	1	0	37	0	0	0	0		
8:45 AM				0	0	2	0	2	15	0	8	0	0	27	0	0	0	0		
8:50 AM				0	2	1	0	2	13	0	9	0	0	27	0	0	0	0		
8:55 AM				0	2	2	0	0	18	0	13	1	0	36	0	0	0	0		
Total Survey				0	36	58	0	21	582	0	334	6	1	1,037	4	0	0	0		

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound N 7th St				Southbound N 7th St				Eastbound E Main St			Westbound E Main St				Interval Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	L	R	Total	Bikes	L	T	Bikes	T	R	Bikes	North		South	East	West	
7:00 AM				0	13	11	0	0	80	0	30	0	0	134	1	0	0	0		
7:15 AM				0	4	9	0	2	74	0	44	1	0	134	0	0	0	0		
7:30 AM				0	2	9	0	3	89	0	62	1	1	166	0	0	0	0		
7:45 AM				0	5	6	0	4	81	0	66	0	0	162	0	0	0	0		
8:00 AM				0	1	7	0	3	66	0	33	1	0	111	2	0	0	0		
8:15 AM				0	4	7	0	2	74	0	35	0	0	122	0	0	0	0		
8:30 AM				0	3	4	0	3	72	0	34	2	0	118	1	0	0	0		
8:45 AM				0	4	5	0	4	46	0	30	1	0	90	0	0	0	0		
Total Survey				0	36	58	0	21	582	0	334	6	1	1,037	4	0	0	0		

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound N 7th St				Southbound N 7th St				Eastbound E Main St				Westbound E Main St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	0	0	0	0	59	11	70	0	333	237	570	0	204	348	552	1	596	1	0	0	0
%HV	0.0%				1.7%				3.3%				3.4%				3.2%				
PHF	0.00				0.61				0.90				0.77				0.90				

By Movement	Northbound N 7th St				Southbound N 7th St				Eastbound E Main St				Westbound E Main St				Total
	Total	L	R	Total	L	T	Total	Bikes	Total	T	R	Total	Bikes	Total			
Volume	0	24	35	59	9	324	333	0	202	2	204	2	204	596			
%HV	NA	NA	NA	0.0%	0.0%	NA	2.9%	1.7%	0.0%	3.4%	NA	3.3%	NA	3.2%			
PHF		0.00	0.46	0.80	0.61	0.56	0.91	0.90		0.77	0.25	0.77		0.90			

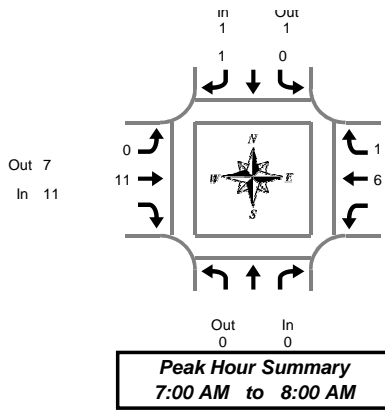
Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound N 7th St				Southbound N 7th St				Eastbound E Main St			Westbound E Main St				Interval Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	L	R	Total	Bikes	L	T	Bikes	T	R	Bikes	North		South	East	West	
7:00 AM				0	24	35	0	9	324	0	202	2	1	596	1	0	0	0		
7:15 AM				0	12	31	0	12	310	0	205	3	1	573	2	0	0	0		
7:30 AM				0	12	29	0	12	310	0	196	2	1	561	2	0	0	0		
7:45 AM				0	13	24	0	12	293	0	168	3	0	513	3	0	0	0		
8:00 AM				0	12	23	0	12	258	0	132	4	0	441	3	0	0	0		

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



N 7th St & E Main St

Tuesday, May 14, 2019
7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound N 7th St			Southbound N 7th St			Eastbound E Main St			Westbound E Main St			Interval Total
	In	Out	Total	L	R	Total	L	T	Total	T	R	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
7:05 AM	0	0	0	0	0	0	0	2	2	0	0	0	2
7:10 AM	0	0	0	0	0	0	0	2	2	1	0	1	3
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	1
7:35 AM	0	0	0	0	0	0	0	2	2	1	0	1	3
7:40 AM	0	0	0	1	1	0	0	0	0	1	0	1	2
7:45 AM	0	0	0	0	0	0	0	1	1	2	0	2	3
7:50 AM	0	0	0	0	0	0	0	1	1	0	0	0	1
7:55 AM	0	0	0	0	0	0	0	3	3	0	0	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:05 AM	0	0	0	0	0	0	0	1	1	0	0	0	1
8:10 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
8:15 AM	0	0	0	0	0	0	0	2	2	1	0	1	3
8:20 AM	0	0	0	0	0	0	0	1	1	0	0	0	1
8:25 AM	0	0	0	0	0	0	0	1	1	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:35 AM	0	0	0	1	1	0	0	2	2	1	0	1	4
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	1	0	1	1	2	0	2	3
8:50 AM	0	0	0	0	0	0	0	1	1	2	0	2	3
8:55 AM	0	0	0	0	0	0	0	3	3	1	0	1	4
Total Survey	0	0	0	2	2	1	22	23	23	14	1	15	40

Heavy Vehicle 15-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound N 7th St			Southbound N 7th St			Eastbound E Main St			Westbound E Main St			Interval Total
	In	Out	Total	L	R	Total	L	T	Total	T	R	Total	
7:00 AM	0	0	0	0	0	0	0	4	4	2	0	2	6
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	1	0	0	2	2	2	1	3	6
7:45 AM	0	0	0	0	0	0	0	5	5	2	0	2	7
8:00 AM	0	0	0	0	0	0	0	1	1	1	0	1	2
8:15 AM	0	0	0	0	0	0	0	4	4	1	0	1	5
8:30 AM	0	0	0	1	1	0	0	2	2	1	0	1	4
8:45 AM	0	0	0	0	0	1	4	5	5	5	0	5	10
Total Survey	0	0	0	2	2	1	22	23	23	14	1	15	40

Heavy Vehicle Peak Hour Summary 7:00 AM to 8:00 AM

By Approach	Northbound N 7th St			Southbound N 7th St			Eastbound E Main St			Westbound E Main St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	0	0	0	1	1	2	11	7	18	7	11	18	19
PHF	0.00			0.25			0.55			0.44			0.59

By Movement	Northbound N 7th St			Southbound N 7th St			Eastbound E Main St			Westbound E Main St			Total
	In	Out	Total	L	R	Total	L	T	Total	T	R	Total	
Volume	0	0	0	1	1	0	11	7	11	6	1	7	19
PHF	0.00	0.00		0.25	0.25	0.00	0.55	0.55	0.55	0.38	0.25	0.44	0.59

Heavy Vehicle Rolling Hour Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound N 7th St			Southbound N 7th St			Eastbound E Main St			Westbound E Main St			Interval Total
	In	Out	Total	L	R	Total	L	T	Total	T	R	Total	
7:00 AM	0	0	0	1	1	0	11	7	11	6	1	7	19
7:15 AM	0	0	0	1	1	0	8	8	8	5	1	6	15
7:30 AM	0	0	0	1	1	0	12	12	12	6	1	7	20
7:45 AM	0	0	0	1	1	0	12	12	12	5	0	5	18
8:00 AM	0	0	0	1	1	1	11	11	12	8	0	8	21

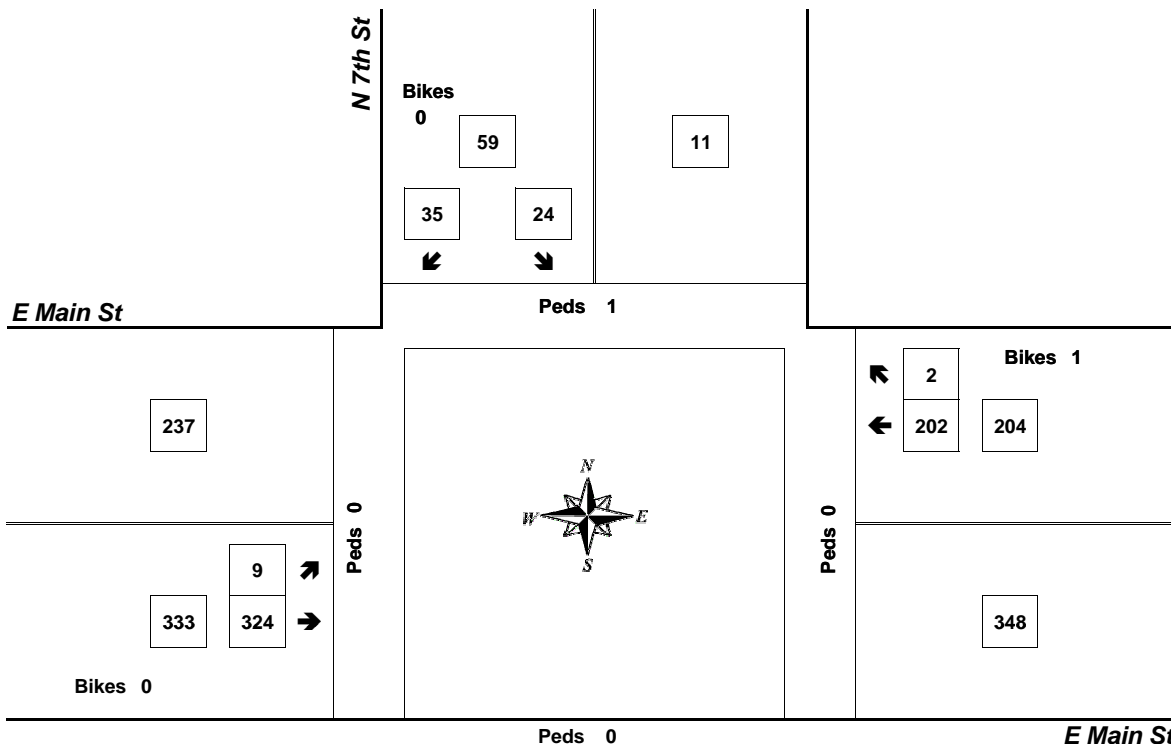
Peak Hour Summary



Clay Carney
(503) 833-2740

N 7th St & E Main St

7:00 AM to 8:00 AM
Tuesday, May 14, 2019



Approach	PHF	HV%	Volume
EB	0.90	3.3%	333
WB	0.77	3.4%	204
NB	0.00	0.0%	0
SB	0.61	1.7%	59
Intersection	0.90	3.2%	596

Count Period: 7:00 AM to 9:00 AM

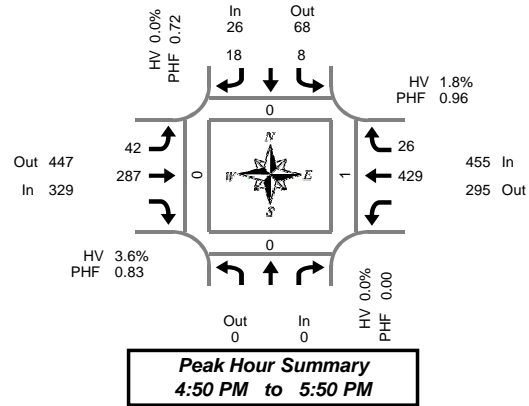
Total Vehicle Summary



Clay Carney
(503) 833-2740

N 7th St & E Main St

Tuesday, May 14, 2019
4:00 PM to 6:00 PM



5-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound N 7th St				Southbound N 7th St				Eastbound E Main St			Westbound E Main St				Interval Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	L	R	Total	Bikes	L	T	Bikes	T	R	Bikes	North		South	East	West	
4:00 PM				0	0	2	0	2	17	0	21	1	0	43	0	0	0	0		
4:05 PM				0	2	2	0	3	23	0	26	3	0	59	0	0	0	0		
4:10 PM				0	1	2	0	1	18	0	34	3	0	59	0	0	0	0		
4:15 PM				0	1	1	0	1	28	0	31	3	0	65	0	0	0	0		
4:20 PM				0	0	1	0	1	19	0	41	2	0	64	0	0	0	0		
4:25 PM				0	0	0	0	1	25	0	49	1	0	76	0	0	0	0		
4:30 PM				0	0	2	0	3	25	0	20	0	0	50	0	0	0	0		
4:35 PM				0	1	2	0	4	21	0	30	3	0	61	0	0	0	0		
4:40 PM				0	1	1	0	3	25	0	30	2	0	62	0	0	0	0		
4:45 PM				0	0	2	0	0	28	0	27	2	0	59	0	0	0	0		
4:50 PM				0	0	0	0	2	24	0	32	1	0	59	0	0	0	0		
4:55 PM				0	0	0	0	4	29	0	41	3	0	77	0	0	0	0		
5:00 PM				0	1	3	0	4	24	0	36	4	0	72	0	0	0	0		
5:05 PM				0	1	2	0	3	14	0	32	1	0	53	0	0	0	0		
5:10 PM				0	1	1	0	3	25	0	37	0	0	67	0	0	0	0		
5:15 PM				0	1	2	0	4	25	0	36	0	0	68	0	0	0	0		
5:20 PM				0	0	1	0	8	17	0	42	2	0	70	0	0	0	0		
5:25 PM				0	0	4	0	1	27	0	29	2	0	63	0	0	0	0		
5:30 PM				0	0	1	0	5	27	0	37	2	0	72	0	0	0	0		
5:35 PM				0	1	1	0	4	35	0	34	2	0	77	0	0	1	0		
5:40 PM				0	1	0	0	2	21	1	40	4	4	68	0	0	0	0		
5:45 PM				0	2	3	0	2	19	0	33	5	0	64	0	0	0	0		
5:50 PM				0	0	3	0	2	33	0	16	4	0	58	0	0	0	0		
5:55 PM				0	1	2	0	0	20	0	22	2	0	47	0	0	0	0		
Total Survey				0	15	38	0	63	569	1	776	52	0	1,513	0	0	1	0		

15-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound N 7th St				Southbound N 7th St				Eastbound E Main St			Westbound E Main St				Interval Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	L	R	Total	Bikes	L	T	Bikes	T	R	Bikes	North		South	East	West	
4:00 PM				0	3	6	0	6	58	0	81	7	0	161	0	0	0	0		
4:15 PM				0	1	2	0	3	72	0	121	6	0	205	0	0	0	0		
4:30 PM				0	2	5	0	10	71	0	80	5	0	173	0	0	0	0		
4:45 PM				0	0	2	0	6	81	0	100	6	0	195	0	0	0	0		
5:00 PM				0	3	6	0	10	63	0	105	5	0	192	0	0	0	0		
5:15 PM				0	1	7	0	13	69	0	107	4	0	201	0	0	0	0		
5:30 PM				0	2	2	0	11	83	1	111	8	0	217	0	0	1	0		
5:45 PM				0	3	8	0	4	72	0	71	11	0	169	0	0	0	0		
Total Survey				0	15	38	0	63	569	1	776	52	0	1,513	0	0	1	0		

Peak Hour Summary 4:50 PM to 5:50 PM

By Approach	Northbound N 7th St				Southbound N 7th St				Eastbound E Main St			Westbound E Main St				Total	Pedestrians Crosswalk				
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total		Bikes	North	South	East	West
Volume	0	0	0	0	26	68	94	0	329	447	776	1	455	295	750	0	810	0	0	1	0
%HV	0.0%				0.0%				3.6%			1.8%				2.5%					
PHF	0.00				0.72				0.83			0.96				0.93					

By Movement	Northbound N 7th St				Southbound N 7th St				Eastbound E Main St			Westbound E Main St				Total	
		Total	L	R	Total	L	T	Total	T	R	Total	T	R	Total			
Volume	0	8	18	26	42	287	329	429	26	455	810	429	26	455			
%HV	NA	NA	NA	0.0%	0.0%	NA	0.0%	0.0%	0.0%	4.2%	NA	3.6%	NA	1.6%	3.8%	1.8%	2.5%
PHF		0.00	0.50	0.64	0.72	0.70	0.81	0.83	0.93	0.59	0.96	0.93	0.59	0.96			

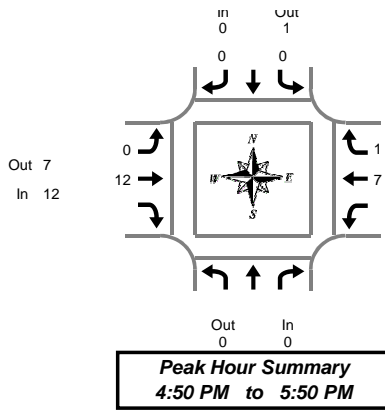
Rolling Hour Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound N 7th St				Southbound N 7th St				Eastbound E Main St			Westbound E Main St				Interval Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	L	R	Total	Bikes	L	T	Bikes	T	R	Bikes	North		South	East	West	
4:00 PM				0	6	15	0	25	282	0	382	24	0	734	0	0	0	0		
4:15 PM				0	6	15	0	29	287	0	406	22	0	765	0	0	0	0		
4:30 PM				0	6	20	0	39	284	0	392	20	0	761	0	0	0	0		
4:45 PM				0	6	17	0	40	296	1	423	23	0	805	0	0	1	0		
5:00 PM				0	9	23	0	38	287	1	394	28	0	779	0	0	1	0		

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



N 7th St & E Main St

Tuesday, May 14, 2019
4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound N 7th St			Southbound N 7th St			Eastbound E Main St			Westbound E Main St			Interval Total
	In	Out	Total	L	R	Total	L	T	Total	T	R	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:05 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:10 PM	0	0	0	0	0	0	0	0	0	3	0	3	3
4:15 PM	0	0	0	0	0	0	0	0	0	4	0	4	4
4:20 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
4:25 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
4:30 PM	0	0	0	0	0	0	2	2	2	1	0	1	3
4:35 PM	0	1	1	0	1	1	0	0	0	3	0	3	4
4:40 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
4:45 PM	0	0	0	0	0	0	1	1	1	0	0	0	1
4:50 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
4:55 PM	0	0	0	0	0	0	1	1	1	0	0	0	1
5:00 PM	0	0	0	0	0	0	2	2	2	2	0	2	4
5:05 PM	0	0	0	0	0	0	1	1	1	1	0	1	2
5:10 PM	0	0	0	0	0	0	2	2	2	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	1	1	1	1	0	1	2
5:25 PM	0	0	0	0	0	0	2	2	2	0	0	0	2
5:30 PM	0	0	0	0	0	0	1	1	1	1	0	1	2
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	2	2	2	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	1	1	2	2
5:50 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
5:55 PM	0	0	0	0	0	0	1	1	1	0	0	0	1
Total Survey	0	1	1	0	1	1	0	16	16	24	1	25	42

Heavy Vehicle 15-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound N 7th St			Southbound N 7th St			Eastbound E Main St			Westbound E Main St			Interval Total
	In	Out	Total	L	R	Total	L	T	Total	T	R	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	4	0	4	4
4:15 PM	0	0	0	0	0	0	0	0	0	7	0	7	7
4:30 PM	0	1	1	0	1	1	2	2	2	5	0	5	8
4:45 PM	0	0	0	0	0	0	2	2	2	1	0	1	3
5:00 PM	0	0	0	0	0	0	5	5	5	3	0	3	8
5:15 PM	0	0	0	0	0	0	3	3	3	1	0	1	4
5:30 PM	0	0	0	0	0	0	3	3	3	1	0	1	4
5:45 PM	0	0	0	0	0	0	1	1	1	2	1	3	4
Total Survey	0	1	1	0	1	1	0	16	16	24	1	25	42

Heavy Vehicle Peak Hour Summary 4:50 PM to 5:50 PM

By Approach	Northbound N 7th St			Southbound N 7th St			Eastbound E Main St			Westbound E Main St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	0	0	0	0	1	1	12	7	19	8	12	20	20
PHF	0.00			0.00			0.60			0.67			0.63

By Movement	Northbound N 7th St			Southbound N 7th St			Eastbound E Main St			Westbound E Main St			Total
	In	Out	Total	L	R	Total	L	T	Total	T	R	Total	
Volume	0	0	0	0	0	0	0	12	12	7	1	8	20
PHF	0.00	0.00		0.00	0.00		0.00	0.60	0.60	0.58	0.25	0.67	0.63

Heavy Vehicle Rolling Hour Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound N 7th St			Southbound N 7th St			Eastbound E Main St			Westbound E Main St			Interval Total
	In	Out	Total	L	R	Total	L	T	Total	T	R	Total	
4:00 PM	0	1	1	0	1	1	0	4	4	17	0	17	22
4:15 PM	0	1	1	0	1	1	0	9	9	16	0	16	26
4:30 PM	0	1	1	0	1	1	0	12	12	10	0	10	23
4:45 PM	0	0	0	0	0	0	0	13	13	6	0	6	19
5:00 PM	0	0	0	0	0	0	0	12	12	7	1	8	20

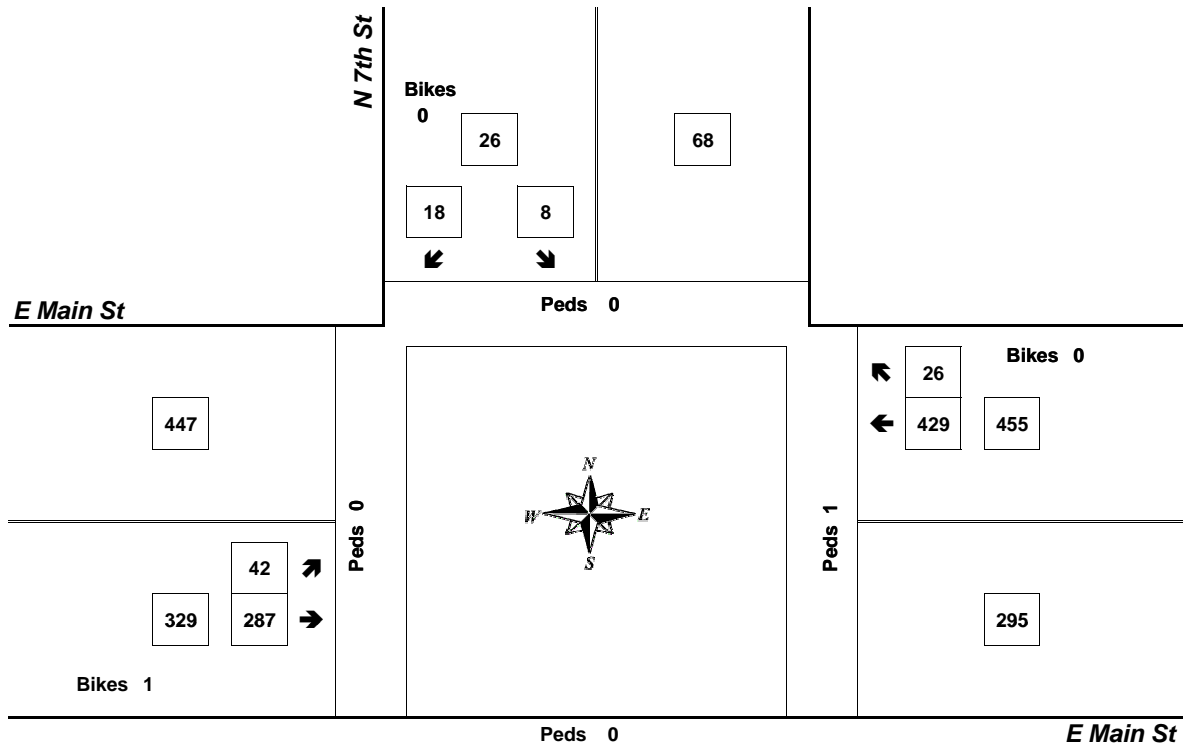
Peak Hour Summary



Clay Carney
(503) 833-2740

N 7th St & E Main St

4:50 PM to 5:50 PM
Tuesday, May 14, 2019



Bikes
0

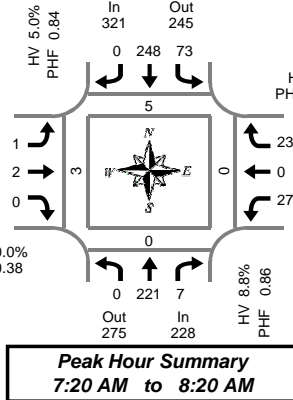
Approach	PHF	HV%	Volume
EB	0.83	3.6%	329
WB	0.96	1.8%	455
NB	0.00	0.0%	0
SB	0.72	0.0%	26
Intersection	0.93	2.5%	810

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary



Clay Carney
(503) 833-2740



S Pine St & W Polk St

Tuesday, May 14, 2019
7:00 AM to 9:00 AM

5-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Interval Total	Pedestrians Crosswalk						
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West			
7:00 AM	0	21	1	0	0	11	0	0	0	0	0	0	0	0	0	1	0	0	0	34	1	0	0	1
7:05 AM	0	12	0	0	0	14	0	0	0	2	0	0	0	0	1	0	0	0	0	29	0	0	0	0
7:10 AM	0	16	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0
7:15 AM	0	15	0	0	2	18	0	0	0	0	0	0	2	0	1	0	0	0	0	38	1	0	0	0
7:20 AM	0	18	0	0	3	22	0	0	0	0	0	0	2	0	1	0	0	0	0	46	2	0	0	2
7:25 AM	0	14	1	0	1	16	0	0	0	0	0	0	0	0	0	0	0	0	0	32	2	0	0	1
7:30 AM	0	28	0	0	5	18	0	0	0	0	0	0	3	0	2	0	0	0	0	56	0	0	0	0
7:35 AM	0	14	1	0	5	31	0	0	0	0	0	0	2	0	0	0	0	0	0	53	0	0	0	0
7:40 AM	0	23	0	0	7	22	0	0	0	0	0	0	1	0	2	0	0	0	0	55	0	0	0	0
7:45 AM	0	25	1	0	7	24	0	0	0	1	0	0	3	0	1	0	0	0	0	62	1	0	0	0
7:50 AM	0	9	2	0	6	23	0	0	0	1	0	0	2	0	3	0	0	0	0	46	0	0	0	0
7:55 AM	0	24	1	0	4	18	0	0	0	0	0	0	3	0	0	0	0	0	0	50	0	0	0	0
8:00 AM	0	11	0	0	13	13	0	0	1	0	0	0	2	0	5	0	0	0	0	45	0	0	0	0
8:05 AM	0	17	0	0	10	23	0	0	0	0	0	0	0	0	4	0	0	0	0	54	0	0	0	0
8:10 AM	0	12	1	0	8	20	0	0	0	0	0	0	6	0	3	0	0	0	0	50	0	0	0	0
8:15 AM	0	26	0	0	4	18	0	0	0	0	0	0	3	0	2	0	0	0	0	53	0	0	0	0
8:20 AM	0	16	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0
8:25 AM	0	14	0	0	0	19	0	0	0	0	0	0	0	0	1	0	0	0	0	34	0	0	0	0
8:30 AM	0	21	0	0	0	8	0	0	0	0	0	0	1	0	0	0	0	0	0	30	0	0	0	0
8:35 AM	0	21	0	0	0	25	0	0	0	0	0	0	2	0	0	0	0	0	0	48	0	0	0	0
8:40 AM	0	17	0	0	1	16	0	0	0	0	0	0	0	0	0	0	0	0	0	34	0	0	0	0
8:45 AM	0	13	0	0	1	20	0	0	0	0	0	0	1	0	1	0	0	0	0	36	0	0	0	0
8:50 AM	0	13	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0
8:55 AM	0	24	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0
Total Survey	0	424	8	0	77	436	0	0	1	4	0	0	33	0	28	0	0	0	1,011	7	0	0	4	

15-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Interval Total	Pedestrians Crosswalk					
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West		
7:00 AM	0	49	1	0	0	34	0	0	0	2	0	0	0	0	2	0	0	0	88	1	0	0	1
7:15 AM	0	47	1	0	6	56	0	0	0	0	0	0	4	0	2	0	0	0	116	5	0	0	3
7:30 AM	0	65	1	0	17	71	0	0	0	0	0	0	6	0	4	0	0	0	164	0	0	0	0
7:45 AM	0	58	4	0	17	65	0	0	0	2	0	0	8	0	4	0	0	0	158	1	0	0	0
8:00 AM	0	40	1	0	31	56	0	0	1	0	0	0	8	0	12	0	0	0	149	0	0	0	0
8:15 AM	0	56	0	0	4	48	0	0	0	0	0	0	3	0	3	0	0	0	114	0	0	0	0
8:30 AM	0	59	0	0	1	49	0	0	0	0	0	0	3	0	0	0	0	0	112	0	0	0	0
8:45 AM	0	50	0	0	1	57	0	0	0	0	0	0	1	0	1	0	0	0	110	0	0	0	0
Total Survey	0	424	8	0	77	436	0	0	1	4	0	0	33	0	28	0	0	0	1,011	7	0	0	4

Peak Hour Summary 7:20 AM to 8:20 AM

By Approach	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	228	275	503	0	321	245	566	0	3	0	3	0	50	82	132	0	602	5	0	0	3
%HV	8.8%				5.0%				0.0%				2.0%				6.1%				
PHF	0.86				0.84				0.38				0.63				0.89				

By Movement	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	221	7	228	73	248	0	321	1	2	0	3	27	0	23	50	602
%HV	0.0%	8.1%	28.6%	8.8%	11.0%	3.2%	0.0%	5.0%	0.0%	0.0%	0.0%	0.0%	3.7%	0.0%	0.0%	2.0%	6.1%
PHF	0.00	0.85	0.44	0.86	0.59	0.81	0.00	0.84	0.25	0.25	0.00	0.38	0.75	0.00	0.48	0.63	0.89

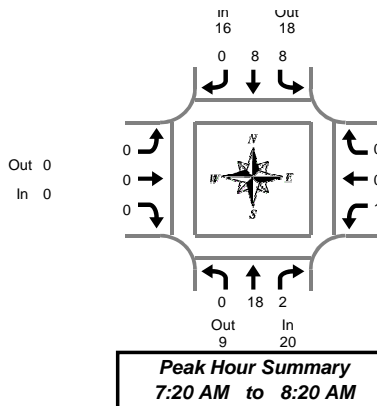
Rolling Hour Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	219	7	0	40	226	0	0	0	4	0	0	18	0	12	0	526	7	0	0	4
7:15 AM	0	210	7	0	71	248	0	0	1	2	0	0	26	0	22	0	587	6	0	0	3
7:30 AM	0	219	6	0	69	240	0	0	1	2	0	0	25	0	23	0	585	1	0	0	0
7:45 AM	0	213	5	0	53	218	0	0	1	2	0	0	22	0	19	0	533	1	0	0	0
8:00 AM	0	205	1	0	37	210	0	0	1	0	0	0	15	0	16	0	485	0	0	0	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



S Pine St & W Polk St

Tuesday, May 14, 2019
7:00 AM to 9:00 AM

Peak Hour Summary
7:20 AM to 8:20 AM

Heavy Vehicle 5-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	3	0	3	0	1	0	1	0	0	0	0	0	0	0	0	4
7:05 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
7:10 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
7:15 AM	0	3	0	3	0	2	0	2	0	0	0	0	0	0	0	0	5
7:20 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:25 AM	0	1	1	2	0	1	0	1	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
7:35 AM	0	2	0	2	1	0	0	1	0	0	0	0	0	0	0	0	3
7:40 AM	0	3	0	3	1	1	0	2	0	0	0	0	0	0	0	0	5
7:45 AM	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	2
7:50 AM	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
7:55 AM	0	1	0	1	1	1	0	2	0	0	0	0	0	0	0	0	3
8:00 AM	0	2	0	2	2	0	0	2	0	0	0	0	0	0	0	0	4
8:05 AM	0	1	0	1	1	1	0	2	0	0	0	0	0	0	0	0	3
8:10 AM	0	1	0	1	0	2	0	2	0	0	0	0	1	0	0	1	4
8:15 AM	0	5	0	5	0	1	0	1	0	0	0	0	0	0	0	0	6
8:20 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
8:25 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1	1	3
8:30 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
8:35 AM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
8:40 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	0	2	0	2	0	6	0	6	0	0	0	0	0	0	0	0	8
8:50 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
8:55 AM	0	6	0	6	0	1	0	1	0	0	0	0	0	0	0	0	7
Total Survey	0	47	2	49	8	22	0	30	0	1	0	1	1	0	1	2	82

Heavy Vehicle 15-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	8	0	8	0	1	0	1	0	1	0	1	0	0	0	0	10
7:15 AM	0	5	1	6	0	3	0	3	0	0	0	0	0	0	0	0	9
7:30 AM	0	5	0	5	3	1	0	4	0	0	0	0	0	0	0	0	9
7:45 AM	0	2	1	3	2	2	0	4	0	0	0	0	0	0	0	0	7
8:00 AM	0	4	0	4	3	3	0	6	0	0	0	0	1	0	0	1	11
8:15 AM	0	9	0	9	0	1	0	1	0	0	0	0	0	0	1	1	11
8:30 AM	0	6	0	6	0	2	0	2	0	0	0	0	0	0	0	0	8
8:45 AM	0	8	0	8	0	9	0	9	0	0	0	0	0	0	0	0	17
Total Survey	0	47	2	49	8	22	0	30	0	1	0	1	1	0	1	2	82

Heavy Vehicle Peak Hour Summary 7:20 AM to 8:20 AM

By Approach	Northbound S Pine St			Southbound S Pine St			Eastbound W Polk St			Westbound W Polk St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	20	9	29	16	18	34	0	0	0	1	10	11	37
PHF	0.71			0.67			0.00			0.25			0.71

By Movement	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	18	2	20	8	8	0	16	0	0	0	0	1	0	0	1	37
PHF	0.00	0.64	0.50	0.71	0.50	0.50	0.00	0.67	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.25	0.71

Heavy Vehicle Rolling Hour Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	20	2	22	5	7	0	12	0	1	0	1	0	0	0	0	35
7:15 AM	0	16	2	18	8	9	0	17	0	0	0	0	1	0	0	1	36
7:30 AM	0	20	1	21	8	7	0	15	0	0	0	0	1	0	1	2	38
7:45 AM	0	21	1	22	5	8	0	13	0	0	0	0	1	0	1	2	37
8:00 AM	0	27	0	27	3	15	0	18	0	0	0	0	1	0	1	2	47

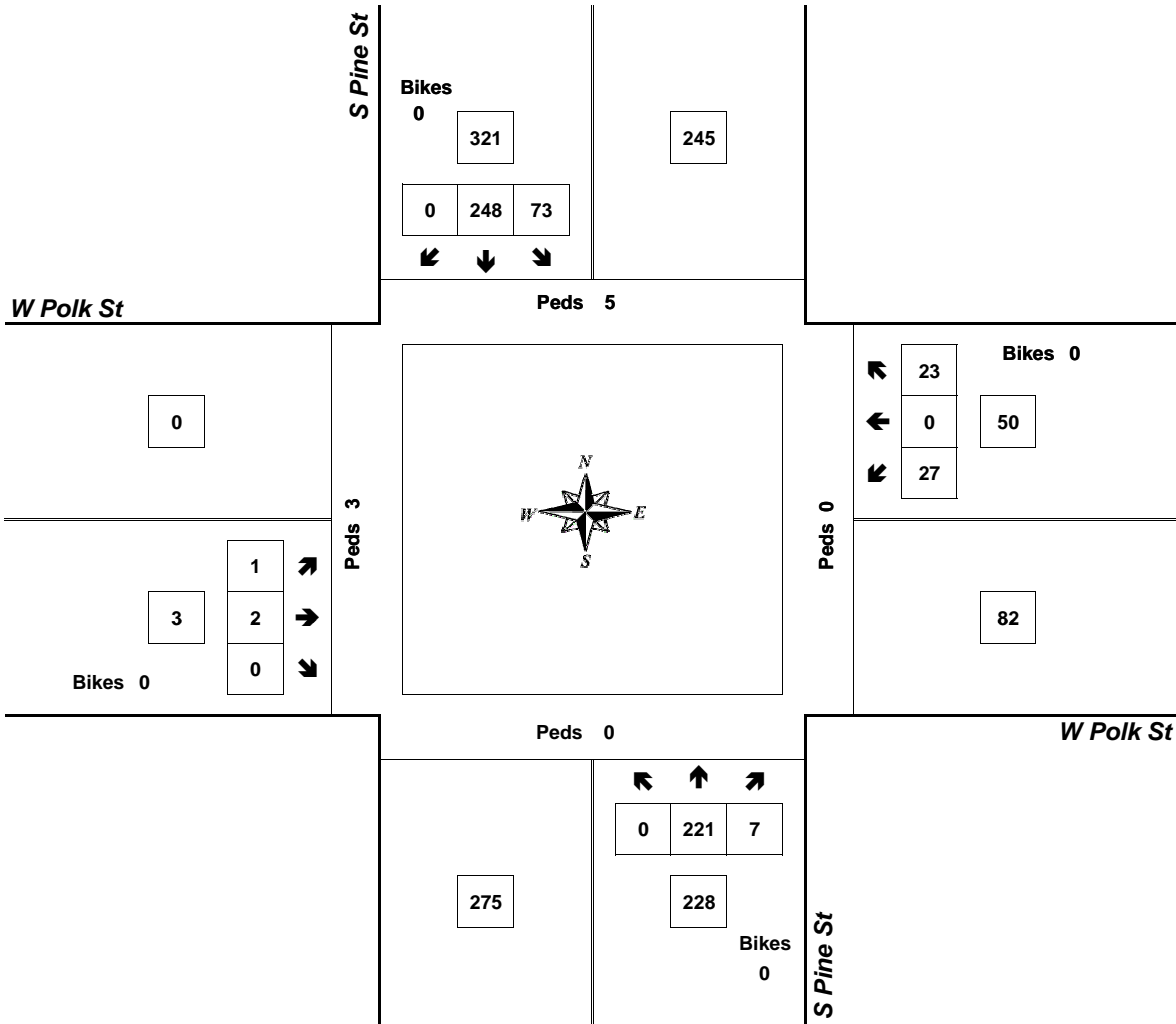
Peak Hour Summary



Clay Carney
(503) 833-2740

S Pine St & W Polk St

7:20 AM to 8:20 AM
Tuesday, May 14, 2019



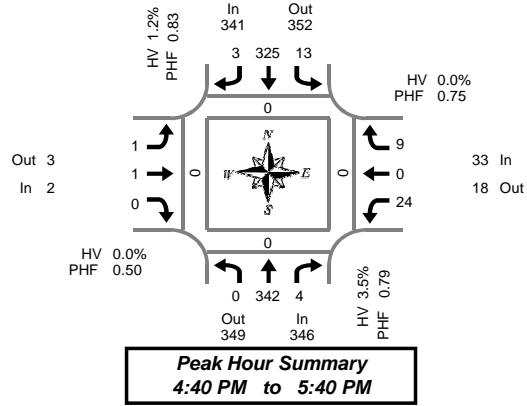
Approach	PHF	HV%	Volume
EB	0.38	0.0%	3
WB	0.63	2.0%	50
NB	0.86	8.8%	228
SB	0.84	5.0%	321
Intersection	0.89	6.1%	602

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary



Clay Carney
(503) 833-2740



S Pine St & W Polk St

Tuesday, May 14, 2019
4:00 PM to 6:00 PM

5-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	23	1	0	0	22	0	0	0	0	0	0	1	0	1	0	48	0	0	0	0
4:05 PM	0	16	0	0	1	16	0	0	0	0	0	0	0	1	2	0	36	0	0	0	0
4:10 PM	0	20	0	0	0	32	0	0	0	1	0	0	1	0	2	0	56	0	0	0	0
4:15 PM	0	24	0	0	1	23	0	0	0	0	0	0	0	0	1	0	49	0	0	0	0
4:20 PM	0	35	0	0	0	22	0	0	0	0	0	0	1	0	1	0	59	0	0	0	0
4:25 PM	0	26	0	0	0	24	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0
4:30 PM	0	31	0	0	4	30	0	0	0	0	0	0	3	0	1	0	69	0	0	0	0
4:35 PM	0	25	0	0	1	22	2	0	1	0	0	0	1	0	0	0	52	0	0	0	0
4:40 PM	0	30	0	0	0	32	0	0	0	0	0	0	2	0	1	0	65	0	0	0	0
4:45 PM	0	23	0	0	0	28	0	0	0	0	0	0	0	0	0	0	51	0	0	0	0
4:50 PM	0	20	0	0	2	26	0	0	0	0	0	0	2	0	0	0	50	0	0	0	0
4:55 PM	0	33	0	0	0	29	0	0	0	0	0	0	4	0	1	0	67	0	0	0	0
5:00 PM	0	18	0	0	1	40	2	0	0	1	0	0	1	0	0	0	63	0	0	0	0
5:05 PM	0	26	3	0	0	16	0	0	0	0	0	0	3	0	1	0	49	0	0	0	0
5:10 PM	0	31	1	0	4	20	0	0	0	0	0	0	1	0	1	0	58	0	0	0	0
5:15 PM	0	22	0	0	1	17	0	0	0	0	0	0	3	0	0	0	43	0	0	0	0
5:20 PM	0	30	0	0	1	26	0	0	0	0	0	0	1	0	1	0	59	0	0	0	0
5:25 PM	0	34	0	0	0	36	0	0	0	0	0	0	3	0	1	0	74	0	0	0	0
5:30 PM	0	37	0	0	3	36	1	0	1	0	0	0	2	0	2	0	82	0	0	0	0
5:35 PM	0	38	0	0	1	19	0	0	0	0	0	0	2	0	1	0	61	0	0	0	0
5:40 PM	0	25	0	0	1	34	0	0	0	0	0	0	1	0	0	0	61	0	0	0	0
5:45 PM	0	24	0	0	2	18	0	0	0	0	0	0	1	0	1	0	46	0	0	0	0
5:50 PM	0	26	0	0	2	22	0	0	0	0	0	0	1	1	0	0	52	0	0	0	0
5:55 PM	1	28	0	0	1	14	0	0	0	0	0	0	2	0	1	0	47	0	0	0	0
Total Survey	1	645	5	0	26	604	5	0	2	2	0	0	36	2	19	0	1,347	0	0	0	0

15-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	59	1	0	1	70	0	0	0	1	0	0	2	1	5	0	140	0	0	0	0
4:15 PM	0	85	0	0	1	69	0	0	0	0	0	0	1	0	2	0	158	0	0	0	0
4:30 PM	0	86	0	0	5	84	2	0	1	0	0	0	6	0	2	0	186	0	0	0	0
4:45 PM	0	76	0	0	2	83	0	0	0	0	0	0	6	0	1	0	168	0	0	0	0
5:00 PM	0	75	4	0	5	76	2	0	0	1	0	0	5	0	2	0	170	0	0	0	0
5:15 PM	0	86	0	0	2	79	0	0	0	0	0	0	7	0	2	0	176	0	0	0	0
5:30 PM	0	100	0	0	5	89	1	0	1	0	0	0	5	0	3	0	204	0	0	0	0
5:45 PM	1	78	0	0	5	54	0	0	0	0	0	0	4	1	2	0	145	0	0	0	0
Total Survey	1	645	5	0	26	604	5	0	2	2	0	0	36	2	19	0	1,347	0	0	0	0

Peak Hour Summary 4:40 PM to 5:40 PM

By Approach	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	346	349	695	0	341	352	693	0	2	3	5	0	33	18	51	0	722	0	0	0	0
%HV	3.5%				1.2%				0.0%				0.0%				2.2%	0	0	0	0
PHF	0.79				0.83				0.50				0.75				0.83	0	0	0	0

By Movement	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	342	4	346	13	325	3	341	1	1	0	2	24	0	9	33	722
%HV	0.0%	3.2%	25.0%	3.5%	0.0%	1.2%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%
PHF	0.00	0.78	0.25	0.79	0.54	0.83	0.38	0.83	0.25	0.25	0.00	0.50	0.75	0.00	0.56	0.75	0.83

Rolling Hour Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound S Pine St				Southbound S Pine St				Eastbound W Polk St				Westbound W Polk St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	306	1	0	9	306	2	0	1	1	0	0	15	1	10	0	652	0	0	0	0
4:15 PM	0	322	4	0	13	312	4	0	1	1	0	0	18	0	7	0	682	0	0	0	0
4:30 PM	0	323	4	0	14	322	4	0	1	1	0	0	24	0	7	0	700	0	0	0	0
4:45 PM	0	337	4	0	14	327	3	0	1	1	0	0	23	0	8	0	718	0	0	0	0
5:00 PM	1	339	4	0	17	298	3	0	1	1	0	0	21	1	9	0	695	0	0	0	0

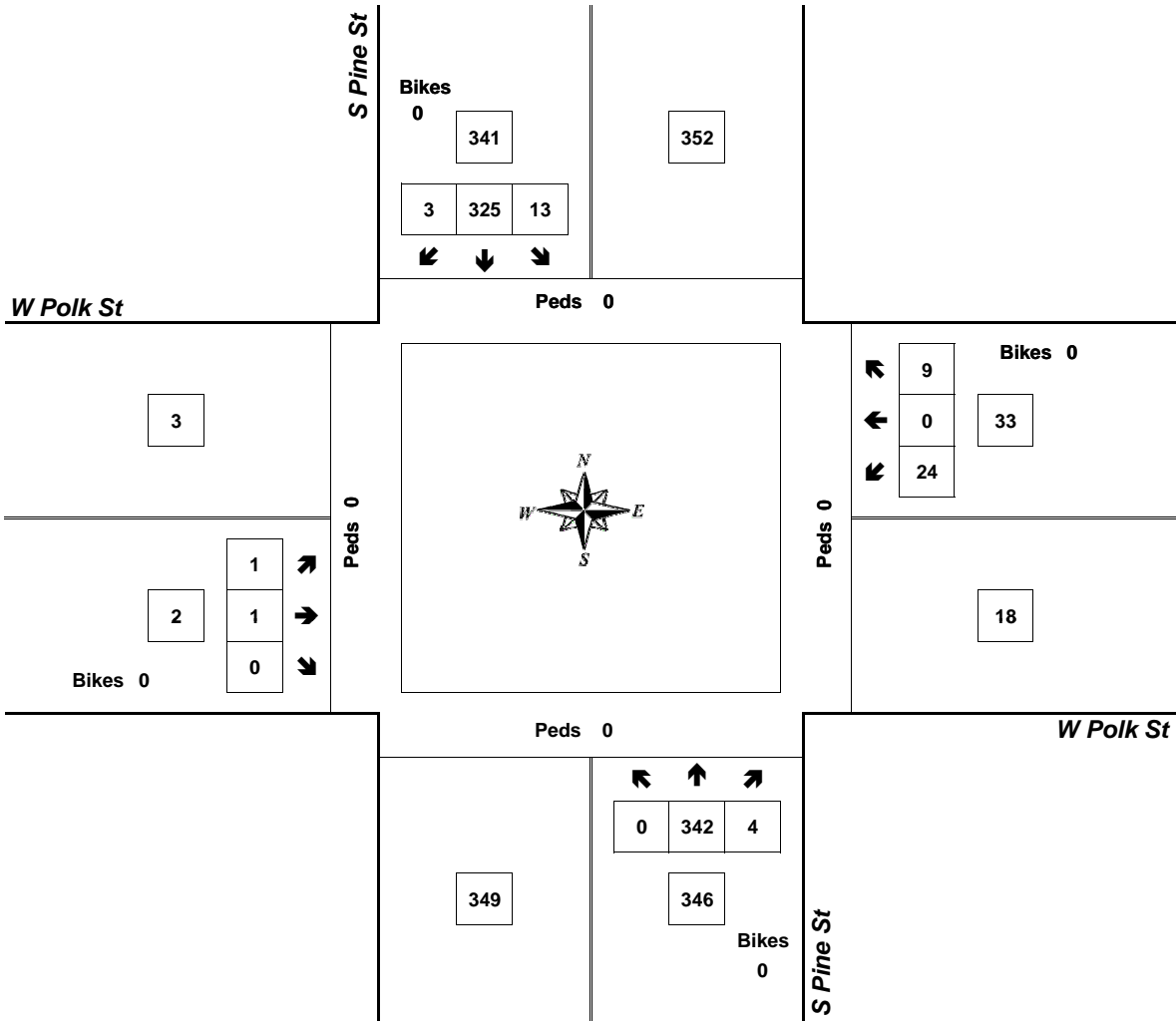
Peak Hour Summary



Clay Carney
(503) 833-2740

S Pine St & W Polk St

4:40 PM to 5:40 PM
Tuesday, May 14, 2019



Approach	PHF	HV%	Volume
EB	0.50	0.0%	2
WB	0.75	0.0%	33
NB	0.79	3.5%	346
SB	0.83	1.2%	341
Intersection	0.83	2.2%	722

Count Period: 4:00 PM to 6:00 PM



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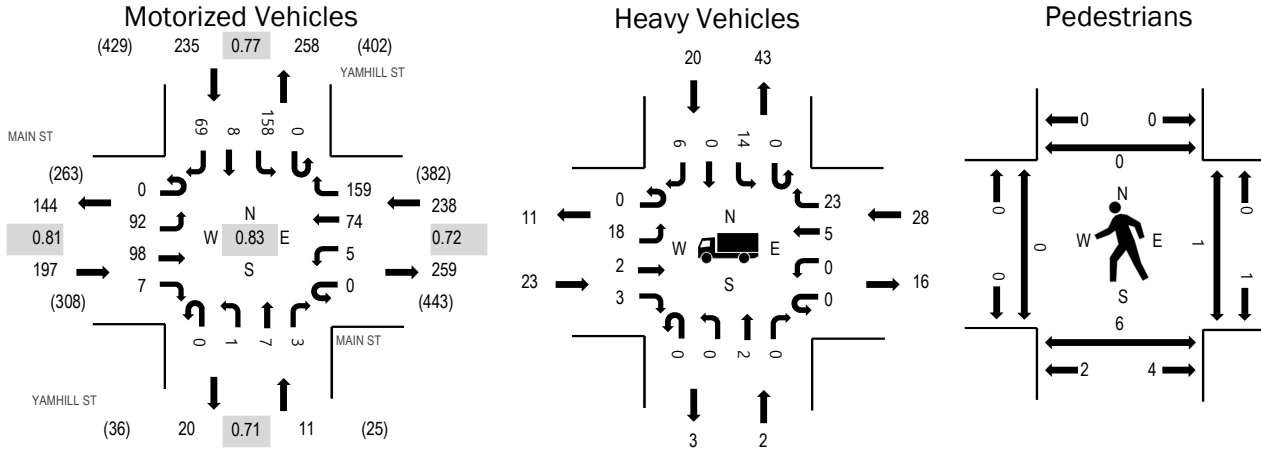
Location: 1 YAMHILL ST & MAIN ST AM

Date: Tuesday, June 7, 2022

Peak Hour: 07:10 AM - 08:10 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	11.7%	0.81
WB	11.8%	0.72
NB	18.2%	0.71
SB	8.5%	0.77
All	10.7%	0.83

Traffic Counts - Motorized Vehicles

Interval Start Time	MAIN ST Eastbound				MAIN ST Westbound				YAMHILL ST Northbound				YAMHILL ST Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	4	3	0	0	0	3	3	0	0	0	0	0	9	0	3	25	625
7:05 AM	0	6	6	0	0	0	4	14	0	0	1	1	0	10	0	4	46	661
7:10 AM	0	7	5	0	0	1	9	4	0	0	1	1	0	11	0	5	44	681
7:15 AM	0	16	6	0	0	1	5	4	0	0	0	0	0	11	1	3	47	676
7:20 AM	0	8	6	2	0	0	1	11	0	1	0	0	0	9	0	5	43	664
7:25 AM	0	7	4	1	0	0	1	7	0	0	0	0	0	8	1	2	31	656
7:30 AM	0	6	6	0	0	1	6	16	0	0	0	1	0	11	0	7	54	664
7:35 AM	0	11	13	1	0	2	10	10	0	0	0	0	0	13	1	5	66	652
7:40 AM	0	11	9	0	0	0	6	14	0	0	1	0	0	19	0	5	65	620
7:45 AM	0	5	11	0	0	0	4	19	0	0	0	0	0	12	2	8	61	600
7:50 AM	0	2	12	1	0	0	5	17	0	0	0	0	0	25	1	6	69	594
7:55 AM	0	5	10	0	0	0	13	25	0	0	2	0	0	10	1	8	74	559
8:00 AM	0	3	11	1	0	0	8	17	0	0	2	0	0	11	0	8	61	519
8:05 AM	0	11	5	1	0	0	6	15	0	0	1	1	0	18	1	7	66	
8:10 AM	0	2	2	0	0	2	6	5	0	0	2	0	0	14	1	5	39	
8:15 AM	0	5	7	0	0	1	5	7	0	0	0	0	0	6	0	4	35	
8:20 AM	0	3	1	0	0	0	9	7	0	1	0	1	0	8	1	4	35	
8:25 AM	0	8	7	0	0	0	2	4	0	0	1	0	0	10	1	6	39	
8:30 AM	0	4	5	0	0	2	3	6	0	0	0	3	0	12	1	6	42	
8:35 AM	0	5	3	0	0	0	4	8	0	0	1	0	0	11	0	2	34	
8:40 AM	0	4	6	0	0	1	3	10	0	0	0	0	0	13	1	7	45	
8:45 AM	0	3	9	0	0	1	6	8	0	0	2	0	0	12	0	14	55	
8:50 AM	0	3	8	0	0	2	6	1	0	0	0	0	0	10	0	4	34	
8:55 AM	0	7	0	0	0	0	2	9	0	0	1	0	0	7	2	6	34	
Count Total	0	146	155	7	0	14	127	241	0	2	15	8	0	280	15	134	1,144	
Peak Hour	0	92	98	7	0	5	74	159	0	1	7	3	0	158	8	69	681	

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

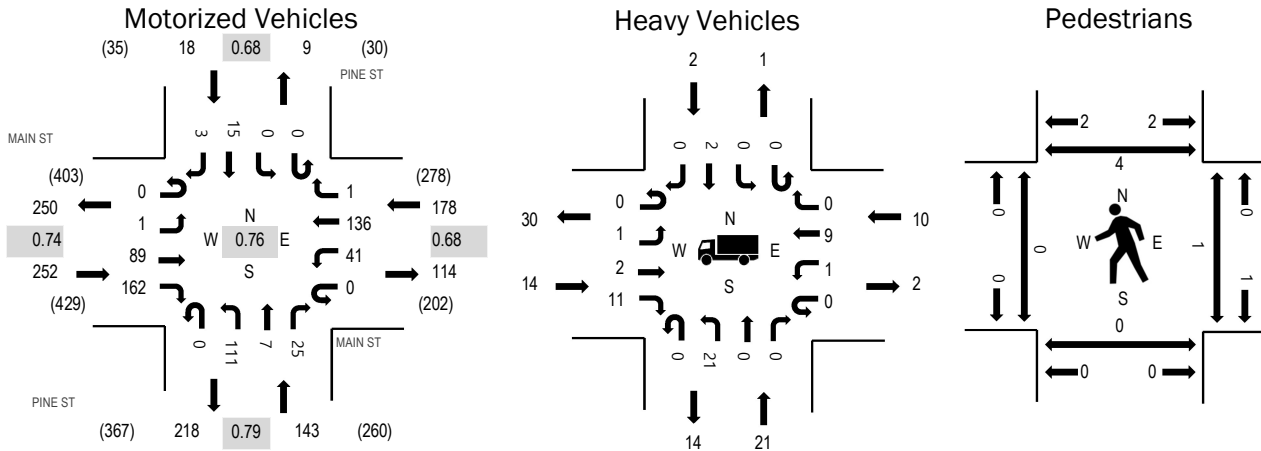
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	3	0	1	0	4	7:00 AM	0	0	0	0	0	7:00 AM	0	0	1	0	1
7:05 AM	1	0	2	0	3	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	2	1	2	0	5	7:10 AM	0	0	0	0	0	7:10 AM	0	1	0	0	1
7:15 AM	0	0	0	1	1	7:15 AM	0	0	0	0	0	7:15 AM	0	0	1	0	1
7:20 AM	1	0	3	1	5	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	3	0	1	1	5	7:25 AM	0	0	0	0	0	7:25 AM	0	1	0	0	1
7:30 AM	2	0	3	2	7	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	3	0	3	3	9	7:35 AM	0	0	0	0	0	7:35 AM	0	1	0	0	1
7:40 AM	2	1	1	4	8	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	0	3	3	6	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	1	0	5	1	7	7:50 AM	0	0	0	0	0	7:50 AM	0	3	0	0	3
7:55 AM	2	0	4	1	7	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	2	0	2	0	4	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	5	0	1	3	9	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	1	1	2	4	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	2	0	2	1	5	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	2	1	2	2	7	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	2	0	0	2	4	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	1	1	1	3	8:30 AM	0	0	0	0	0	8:30 AM	0	1	0	0	1
8:35 AM	3	0	0	2	5	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	1	0	1	5	7	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	3	1	4	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	1	0	0	3	4	8:50 AM	0	0	0	0	0	8:50 AM	0	1	0	0	1
8:55 AM	0	0	3	0	3	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	38	5	44	39	126	Count Total	0	0	0	0	0	Count Total	0	8	2	0	10
Peak Hour	23	2	28	20	73	Peak Hour	0	0	0	0	0	Peak Hour	0	6	1	0	7



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Location: 2 PINE ST & MAIN ST AM
Date: Tuesday, June 7, 2022
Peak Hour: 07:10 AM - 08:10 AM
Peak 15-Minutes: 07:50 AM - 08:05 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	5.6%	0.74
WB	5.6%	0.68
NB	14.7%	0.79
SB	11.1%	0.68
All	8.0%	0.76

Traffic Counts - Motorized Vehicles

Interval Start Time	MAIN ST Eastbound				MAIN ST Westbound				PINE ST Northbound			PINE ST Southbound				Total	Rolling Hour	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right
7:00 AM	0	0	5	10	0	0	2	0	0	4	0	3	0	0	2	0	26	538
7:05 AM	0	0	7	9	0	2	3	0	0	14	0	2	0	1	0	0	38	577
7:10 AM	0	1	7	11	0	5	13	0	0	4	1	3	0	0	1	0	46	591
7:15 AM	0	0	9	10	0	2	6	0	0	4	0	2	0	0	2	0	35	579
7:20 AM	0	0	6	6	0	2	3	0	0	11	0	1	0	0	0	0	29	578
7:25 AM	0	0	4	7	0	2	4	0	0	4	1	1	0	0	1	0	24	587
7:30 AM	0	0	6	8	0	2	12	0	0	13	0	1	0	0	1	0	43	590
7:35 AM	0	0	12	14	0	3	15	0	0	6	1	2	0	0	2	1	56	581
7:40 AM	0	0	7	16	0	5	8	0	0	9	0	2	0	0	2	0	49	562
7:45 AM	0	0	6	20	0	5	7	0	0	19	0	4	0	0	0	1	62	541
7:50 AM	0	0	7	27	0	6	13	0	0	8	0	1	0	0	1	0	63	517
7:55 AM	0	0	6	19	0	3	22	1	0	13	0	2	0	0	1	0	67	496
8:00 AM	0	0	9	16	0	3	18	0	0	12	2	4	0	0	1	0	65	464
8:05 AM	0	0	10	8	0	3	15	0	0	8	2	2	0	0	3	1	52	
8:10 AM	0	0	3	11	0	2	9	0	0	5	1	1	0	0	1	1	34	
8:15 AM	0	0	7	7	0	0	6	0	0	10	0	3	0	0	1	0	34	
8:20 AM	0	0	4	11	0	2	11	0	0	7	0	3	0	0	0	0	38	
8:25 AM	0	0	4	6	0	1	6	1	0	4	1	3	0	0	1	0	27	
8:30 AM	0	0	4	14	0	2	5	1	0	5	0	2	0	0	1	0	34	
8:35 AM	0	1	6	10	0	3	5	0	0	9	1	1	0	0	0	1	37	
8:40 AM	0	0	4	6	0	2	4	1	0	8	0	2	0	0	1	0	28	
8:45 AM	0	0	8	12	0	2	2	0	0	7	1	4	0	1	1	0	38	
8:50 AM	0	0	3	11	0	6	9	2	0	2	3	2	0	1	2	1	42	
8:55 AM	0	0	4	10	0	0	4	7	0	8	1	0	0	0	0	1	35	
Count Total	0	2	148	279	0	63	202	13	0	194	15	51	0	3	25	7	1,002	
Peak Hour	0	1	89	162	0	41	136	1	0	111	7	25	0	0	15	3	591	

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

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	1	1	0	0	2	7:00 AM	0	0	0	0	0	7:00 AM	1	0	0	0	1
7:05 AM	1	2	0	0	3	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	1	1	1	0	3	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	1	0	0	0	1	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	3	0	0	3	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	2	1	0	0	3	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	1	1
7:30 AM	1	3	1	1	6	7:30 AM	0	0	0	0	0	7:30 AM	0	0	1	1	2
7:35 AM	1	1	2	0	4	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	2	1	1	1	5	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	3	2	1	0	6	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	3	1	0	4	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	4	2	0	6	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	1	1	0	2	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	1	1
8:05 AM	3	1	0	0	4	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	1	1
8:10 AM	1	0	1	0	2	8:10 AM	0	0	0	0	0	8:10 AM	0	1	0	0	1
8:15 AM	3	1	2	0	6	8:15 AM	0	0	0	0	0	8:15 AM	0	0	1	1	2
8:20 AM	1	1	2	0	4	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	1	0	0	0	1	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	2	2
8:30 AM	1	0	0	0	1	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	1	1	0	0	2	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	2	2
8:40 AM	1	1	1	0	3	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	1	2	1	0	4	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	2	0	0	0	2	8:50 AM	0	0	0	0	0	8:50 AM	1	0	0	1	2
8:55 AM	1	2	0	0	3	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	2	2
Count Total	29	32	17	2	80	Count Total	0	0	0	0	0	Count Total	2	1	2	12	17
Peak Hour	14	21	10	2	47	Peak Hour	0	0	0	0	0	Peak Hour	0	0	1	4	5



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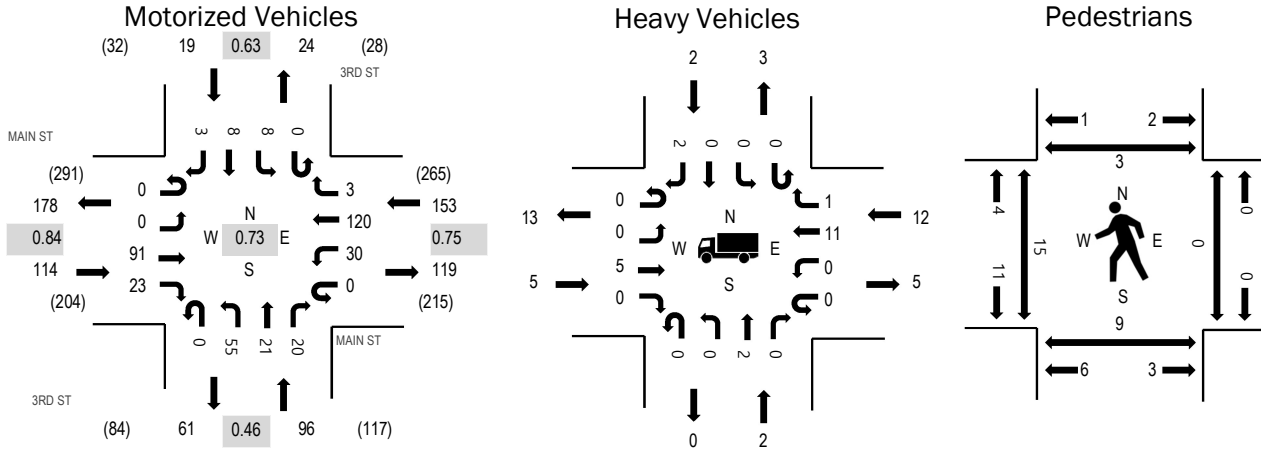
Location: 3 3RD ST & MAIN ST AM

Date: Tuesday, June 7, 2022

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

Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.4%	0.84
WB	7.8%	0.75
NB	2.1%	0.46
SB	10.5%	0.63
All	5.5%	0.73

Traffic Counts - Motorized Vehicles

Interval Start Time	MAIN ST Eastbound				MAIN ST Westbound				3RD ST Northbound			3RD ST Southbound				Total	Rolling Hour	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right
7:00 AM	0	0	5	0	0	0	4	0	0	0	0	0	0	0	4	0	13	344
7:05 AM	0	0	10	0	0	1	9	0	0	2	0	1	0	0	0	0	23	371
7:10 AM	0	0	10	2	0	1	9	0	0	2	0	2	0	1	0	0	27	377
7:15 AM	0	0	8	2	0	1	8	0	0	0	0	0	0	0	0	0	19	373
7:20 AM	0	0	4	2	0	3	3	1	0	0	0	0	0	1	0	0	14	382
7:25 AM	0	0	7	0	0	1	9	0	0	0	0	0	0	1	0	1	19	378
7:30 AM	0	0	12	2	0	4	19	1	0	2	0	1	0	0	1	0	42	380
7:35 AM	0	0	3	1	0	1	16	0	0	1	3	3	0	2	0	0	30	354
7:40 AM	0	0	6	1	0	3	8	0	0	3	3	0	0	0	1	1	26	350
7:45 AM	0	0	13	1	0	5	10	0	0	4	1	3	0	1	3	0	41	338
7:50 AM	0	0	3	6	0	3	14	0	0	9	6	2	0	1	1	0	45	327
7:55 AM	0	0	5	5	0	4	9	1	0	15	3	2	0	0	1	0	45	300
8:00 AM	0	0	7	2	0	2	11	0	0	10	3	4	0	0	1	0	40	274
8:05 AM	0	0	9	2	0	2	6	0	0	7	1	2	0	0	0	0	29	
8:10 AM	0	0	7	0	0	1	10	0	0	2	1	2	0	0	0	0	23	
8:15 AM	0	0	15	1	0	1	5	0	0	2	0	1	0	2	0	1	28	
8:20 AM	0	0	2	0	0	0	7	0	0	1	0	0	0	0	0	0	10	
8:25 AM	0	0	6	0	0	1	10	1	0	2	0	1	0	0	0	0	21	
8:30 AM	0	0	9	0	0	1	3	0	0	0	0	1	0	1	1	0	16	
8:35 AM	0	0	9	0	0	2	12	0	0	1	1	0	0	1	0	0	26	
8:40 AM	0	0	7	0	0	0	3	0	0	1	0	0	0	2	0	1	14	
8:45 AM	0	0	10	1	0	1	16	1	0	0	1	0	0	0	0	0	30	
8:50 AM	0	0	6	0	0	0	9	0	0	1	0	1	0	0	1	0	18	
8:55 AM	0	0	2	1	0	3	9	0	0	3	0	0	0	1	0	0	19	
Count Total	0	0	175	29	0	41	219	5	0	68	23	26	0	14	14	4	618	
Peak Hour	0	0	91	23	0	30	120	3	0	55	21	20	0	8	8	3	382	

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

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	1	0	1	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	1	0	1	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	1	1
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0	7:20 AM	2	0	0	0	2
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	1	0	0	0	1
7:30 AM	1	0	1	0	2	7:30 AM	0	0	0	0	0	7:30 AM	1	0	0	0	1
7:35 AM	0	1	2	0	3	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	1	1
7:40 AM	0	0	1	1	2	7:40 AM	0	0	0	0	0	7:40 AM	4	8	0	0	12
7:45 AM	2	0	1	0	3	7:45 AM	0	0	0	0	0	7:45 AM	1	0	0	0	1
7:50 AM	0	0	2	0	2	7:50 AM	0	0	0	0	0	7:50 AM	1	0	0	0	1
7:55 AM	0	0	1	0	1	7:55 AM	0	0	0	0	0	7:55 AM	4	0	0	1	5
8:00 AM	0	0	1	0	1	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	1	0	1	0	2	8:05 AM	0	0	0	0	0	8:05 AM	1	1	0	0	2
8:10 AM	0	1	2	0	3	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	1	1
8:15 AM	1	0	0	1	2	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	1	0	2	0	3	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	1	0	1	0	2	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	1	0	2	0	3	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	1	0	1	8:45 AM	0	0	0	0	0	8:45 AM	2	0	0	0	2
8:50 AM	0	0	0	1	1	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	1	0	0	1	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	8	3	20	3	34	Count Total	0	0	0	0	0	Count Total	17	9	0	4	30
Peak Hour	5	2	12	2	21	Peak Hour	0	0	0	0	0	Peak Hour	15	9	0	3	27



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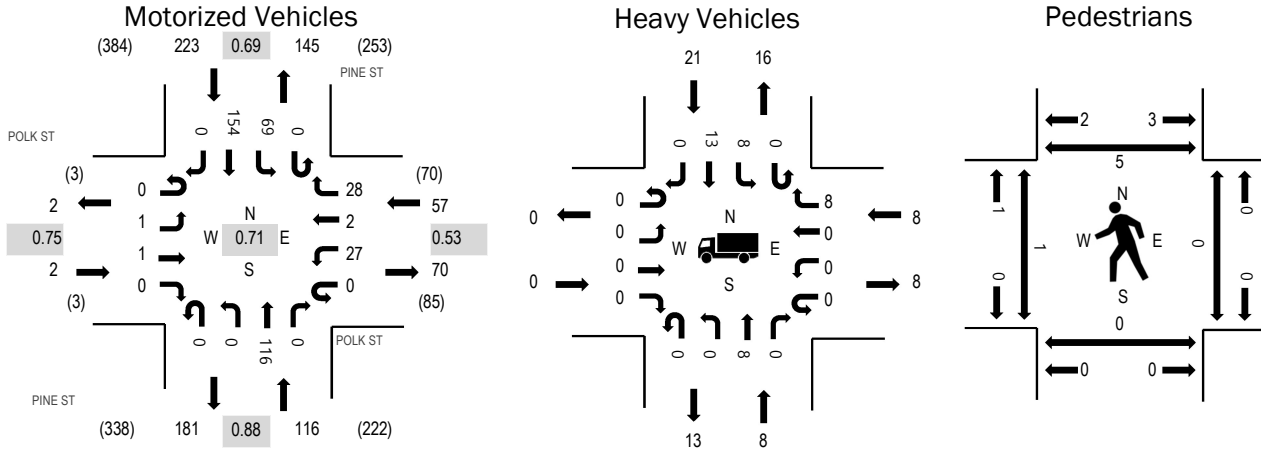
Location: 5 PINE ST & POLK ST AM

Date: Tuesday, June 7, 2022

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

Peak 15-Minutes: 07:40 AM - 07:55 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.75
WB	14.0%	0.53
NB	6.9%	0.88
SB	9.4%	0.69
All	9.3%	0.71

Traffic Counts - Motorized Vehicles

Interval Start Time	POLK ST Eastbound				POLK ST Westbound				PINE ST Northbound				PINE ST Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	0	0	0	2	0	0	0	0	8	0	0	0	12	0	22	366
7:05 AM	0	0	0	0	0	0	0	2	0	0	13	0	0	0	10	0	25	386
7:10 AM	0	0	0	0	0	1	0	0	0	0	5	0	0	1	16	0	23	392
7:15 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	1	14	0	22	389
7:20 AM	0	0	1	0	0	1	0	0	0	0	10	0	0	3	7	0	22	390
7:25 AM	0	0	0	0	0	0	0	1	0	1	5	0	0	2	7	0	16	393
7:30 AM	0	0	0	0	0	1	0	1	0	0	11	0	0	4	8	0	25	398
7:35 AM	0	0	0	0	0	1	0	1	0	0	9	0	0	4	14	0	29	398
7:40 AM	0	0	0	0	0	2	0	4	0	0	10	0	0	6	23	0	45	392
7:45 AM	0	0	0	0	0	4	0	7	0	0	14	0	0	8	13	0	46	370
7:50 AM	0	0	1	0	0	4	0	4	0	0	8	0	0	16	16	0	49	350
7:55 AM	0	0	0	0	0	3	1	4	0	0	11	0	0	13	10	0	42	329
8:00 AM	0	0	0	0	0	4	0	2	0	0	15	0	0	9	12	0	42	313
8:05 AM	0	0	0	0	0	0	1	0	0	0	12	0	0	4	14	0	31	
8:10 AM	0	0	0	0	0	3	0	1	0	0	3	0	0	2	11	0	20	
8:15 AM	0	1	0	0	0	2	0	2	0	0	8	0	0	2	8	0	23	
8:20 AM	0	0	0	0	0	3	0	1	0	0	6	0	0	1	14	0	25	
8:25 AM	0	0	0	0	0	0	0	1	0	0	9	0	0	0	11	0	21	
8:30 AM	0	0	0	0	0	0	0	0	0	0	10	0	0	1	14	0	25	
8:35 AM	0	0	0	0	0	2	0	0	0	0	6	0	0	2	13	0	23	
8:40 AM	0	0	0	0	0	1	0	0	0	0	12	0	0	0	10	0	23	
8:45 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	2	17	0	26	
8:50 AM	0	0	0	0	0	2	0	0	0	0	8	0	0	2	16	0	28	
8:55 AM	0	0	0	0	0	1	0	0	0	0	14	0	0	0	11	0	26	
Count Total	0	1	2	0	0	37	2	31	0	1	221	0	0	83	301	0	679	
Peak Hour	0	1	1	0	0	27	2	28	0	0	116	0	0	69	154	0	398	

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

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	3	0	0	3	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	1	1	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	1	1
7:10 AM	0	1	0	1	2	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	1	0	1	2	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	1	2	0	1	4	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	1	1
7:25 AM	0	2	0	1	3	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	1	0	3	4	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	1	1	0	2	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	1	1	4	6	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	1	1
7:45 AM	0	0	3	3	6	7:45 AM	0	0	0	0	0	7:45 AM	1	0	0	1	2
7:50 AM	0	1	3	2	6	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	1	1
7:55 AM	0	2	0	0	2	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	1	0	0	1	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	2	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	0	0	1	1	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	0	3	3	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	1	0	1	2	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	2	2
8:30 AM	0	1	0	1	2	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	1	0	1	2	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	1	1	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	1	0	2	3	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	2	0	1	3	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	1	24	8	34	67	Count Total	0	0	0	0	0	Count Total	1	0	0	7	8
Peak Hour	0	8	8	21	37	Peak Hour	0	0	0	0	0	Peak Hour	1	0	0	5	6



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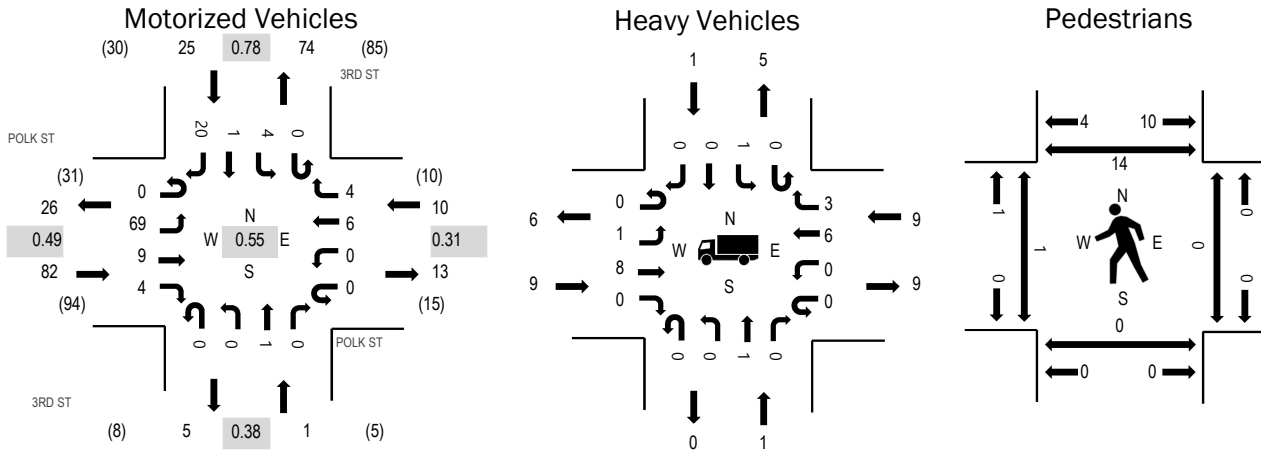
Location: 6 3RD ST & POLK ST AM

Date: Tuesday, June 7, 2022

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

Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	11.0%	0.49
WB	90.0%	0.31
NB	100.0%	0.38
SB	4.0%	0.78
All	16.9%	0.55

Traffic Counts - Motorized Vehicles

Interval Start Time	POLK ST Eastbound				POLK ST Westbound				3RD ST Northbound			3RD ST Southbound				Total	Rolling Hour	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	100
7:05 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	107
7:10 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3	113
7:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2	115
7:20 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4	118
7:25 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	117
7:30 AM	0	1	2	2	0	0	0	0	0	0	1	0	0	2	0	2	10	113
7:35 AM	0	4	1	0	0	0	1	1	0	0	0	0	0	1	0	1	9	103
7:40 AM	0	6	2	0	0	0	2	0	0	0	0	0	0	0	0	2	12	98
7:45 AM	0	7	3	0	0	0	1	1	0	0	0	0	0	0	0	4	16	88
7:50 AM	0	13	1	2	0	0	2	2	0	0	0	0	0	0	0	2	22	74
7:55 AM	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	53
8:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	39
8:05 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	
8:10 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	
8:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	2	5	
8:20 AM	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3	
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:35 AM	0	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0	4	
8:40 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	
8:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	
8:50 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
8:55 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	
Count Total	0	78	9	7	0	0	6	4	0	2	3	0	0	6	1	23	139	
Peak Hour	0	69	9	4	0	0	6	4	0	0	1	0	0	4	1	20	118	

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

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	1	1	0	0	2	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	1	0	2	1	4	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	1	1
7:40 AM	2	0	2	0	4	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	3	0	2	0	5	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	3	3
7:50 AM	2	0	3	0	5	7:50 AM	0	0	0	0	0	7:50 AM	1	0	0	0	1
7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	8	8
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	2	2
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	1	0	0	0	1	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	0	0	0	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	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	10	1	9	1	21	Count Total	0	0	0	0	0	Count Total	1	0	0	14	15
Peak Hour	9	1	9	1	20	Peak Hour	0	0	0	0	0	Peak Hour	1	0	0	14	15



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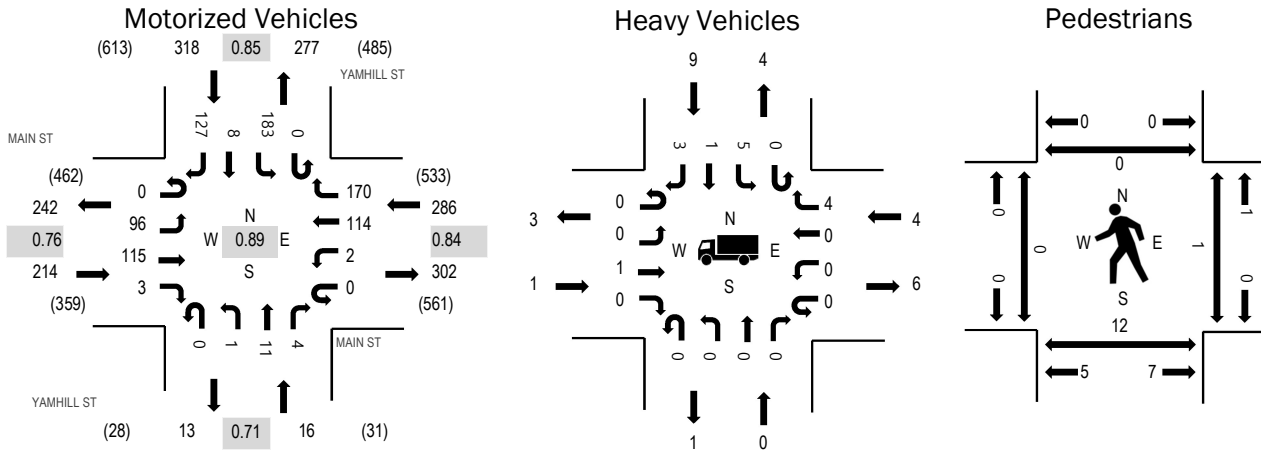
Location: 1 YAMHILL ST & MAIN ST PM

Date: Tuesday, June 7, 2022

Peak Hour: 04:40 PM - 05:40 PM

Peak 15-Minutes: 05:10 PM - 05:25 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.5%	0.76
WB	1.4%	0.84
NB	0.0%	0.71
SB	2.8%	0.85
All	1.7%	0.89

Traffic Counts - Motorized Vehicles

Interval Start Time	MAIN ST Eastbound				MAIN ST Westbound				YAMHILL ST Northbound				YAMHILL ST Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	5	3	1	0	0	12	12	0	0	1	0	0	17	0	16	67	752
4:05 PM	0	5	4	1	0	0	8	5	0	0	2	0	0	22	1	16	64	748
4:10 PM	0	7	12	0	0	0	11	7	0	0	0	2	0	27	0	1	67	757
4:15 PM	0	6	9	0	0	0	11	12	0	0	0	0	0	12	0	7	57	782
4:20 PM	0	3	9	2	0	0	9	13	0	0	1	0	0	11	1	13	62	788
4:25 PM	0	9	4	0	0	0	10	11	0	0	0	0	0	18	1	7	60	806
4:30 PM	0	7	6	0	0	0	6	15	0	1	1	0	0	11	1	9	57	820
4:35 PM	0	6	11	0	0	2	10	10	0	0	0	1	0	7	1	11	59	826
4:40 PM	0	6	10	1	0	0	5	11	0	0	1	0	0	16	0	10	60	834
4:45 PM	0	6	11	0	0	0	12	11	0	0	1	0	0	17	1	12	71	814
4:50 PM	0	10	8	0	0	0	11	16	0	0	0	1	0	7	0	11	64	811
4:55 PM	0	4	15	0	0	0	7	16	0	0	3	0	0	14	1	4	64	796
5:00 PM	0	3	9	1	0	0	11	8	0	0	1	1	0	17	0	12	63	784
5:05 PM	0	7	6	1	0	0	13	9	0	0	1	0	0	20	0	16	73	
5:10 PM	0	10	16	0	0	1	8	29	0	0	0	0	0	24	1	3	92	
5:15 PM	0	10	7	0	0	0	8	12	0	0	1	0	0	12	2	11	63	
5:20 PM	0	14	13	0	0	0	10	19	0	1	0	1	0	16	0	6	80	
5:25 PM	0	9	6	0	0	0	12	14	0	0	1	0	0	15	0	17	74	
5:30 PM	0	6	7	0	0	0	8	12	0	0	1	0	0	13	2	14	63	
5:35 PM	0	11	7	0	0	1	9	13	0	0	1	1	0	12	1	11	67	
5:40 PM	0	0	5	0	0	0	6	12	0	0	1	0	0	10	1	5	40	
5:45 PM	0	5	8	0	0	0	10	17	0	0	2	0	0	17	1	8	68	
5:50 PM	0	5	5	0	0	0	6	13	0	0	0	1	0	8	0	11	49	
5:55 PM	0	4	3	0	0	1	7	11	0	0	0	2	0	14	1	9	52	
Count Total	0	158	194	7	0	5	220	308	0	2	19	10	0	357	16	240	1,536	
Peak Hour	0	96	115	3	0	2	114	170	0	1	11	4	0	183	8	127	834	

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

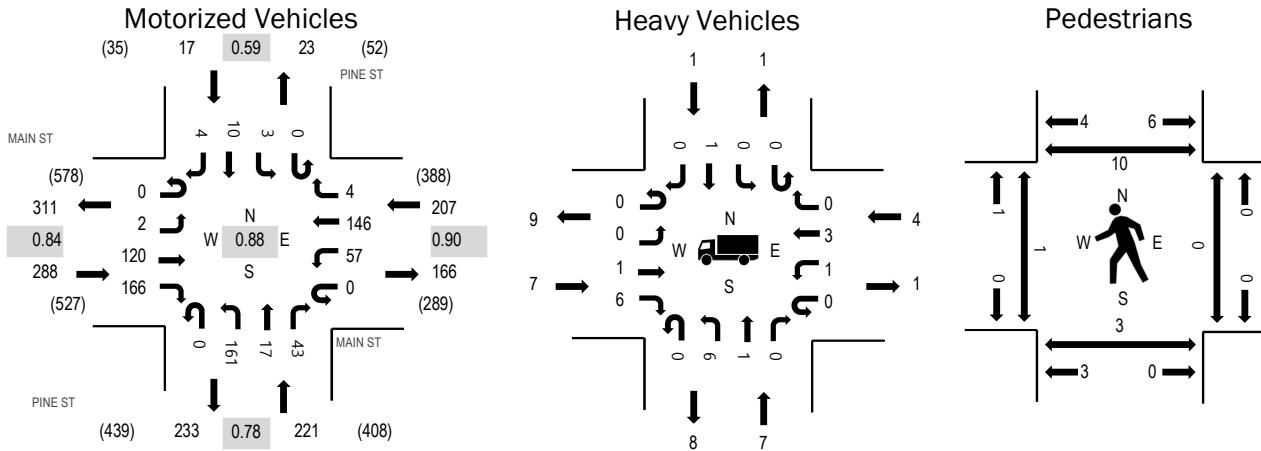
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	1	3	4	4:00 PM	0	0	0	0	0	4:00 PM	0	2	0	0	2
4:05 PM	0	0	0	3	3	4:05 PM	0	0	0	0	0	4:05 PM	0	1	0	0	1
4:10 PM	0	0	1	7	8	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	1	0	0	1	2	4:15 PM	0	0	0	0	0	4:15 PM	0	1	0	0	1
4:20 PM	1	0	0	0	1	4:20 PM	0	0	0	0	0	4:20 PM	0	1	0	0	1
4:25 PM	1	0	2	2	5	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	1	2	3	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	3	0	1	0	4	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	1	4	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	1	1	2	4:55 PM	0	0	0	0	0	4:55 PM	0	4	0	0	4
5:00 PM	0	0	0	1	1	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	1	0	0	1
5:10 PM	0	0	1	0	1	5:10 PM	0	0	0	0	0	5:10 PM	0	4	0	0	4
5:15 PM	1	0	0	2	3	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	1	0	1	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	1	1	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	2	0	0	2
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	1	1	0	2
5:40 PM	1	0	2	1	4	5:40 PM	0	0	0	0	0	5:40 PM	0	1	0	0	1
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	1	1	2	5:50 PM	0	0	0	0	0	5:50 PM	0	1	0	0	1
5:55 PM	0	0	1	0	1	5:55 PM	0	0	0	0	0	5:55 PM	1	0	0	0	1
Count Total	8	0	14	29	51	Count Total	0	0	0	0	0	Count Total	1	19	1	0	21
Peak Hour	1	0	4	9	14	Peak Hour	0	0	0	0	0	Peak Hour	0	12	1	0	13



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Location: 2 PINE ST & MAIN ST PM
Date: Tuesday, June 7, 2022
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:10 PM - 05:25 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.4%	0.84
WB	1.9%	0.90
NB	3.2%	0.78
SB	5.9%	0.59
All	2.6%	0.88

Traffic Counts - Motorized Vehicles

Interval Start Time	MAIN ST Eastbound				MAIN ST Westbound				PINE ST Northbound			PINE ST Southbound				Total	Rolling Hour	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right
4:00 PM	0	0	5	15	0	4	13	0	0	8	0	0	0	2	1	0	48	681
4:05 PM	0	0	11	6	0	7	13	1	0	9	0	1	0	0	1	0	49	687
4:10 PM	0	0	13	22	0	4	9	1	0	10	4	2	0	0	1	1	67	698
4:15 PM	0	1	10	20	0	3	10	1	0	9	0	3	0	0	2	0	59	716
4:20 PM	0	0	5	13	0	6	13	0	0	11	2	3	0	1	0	0	54	715
4:25 PM	0	1	5	10	0	3	13	0	0	11	4	5	0	1	1	0	54	726
4:30 PM	0	0	7	14	0	7	11	1	0	9	3	1	0	0	2	2	57	733
4:35 PM	0	1	8	13	0	6	12	1	0	15	4	4	0	0	0	0	64	720
4:40 PM	0	0	12	13	0	5	7	0	0	10	0	3	0	0	1	1	52	715
4:45 PM	0	0	10	13	0	2	11	0	0	11	2	5	0	0	1	0	55	709
4:50 PM	0	0	7	10	0	3	14	0	0	19	0	3	0	0	0	0	56	702
4:55 PM	0	1	12	11	0	5	16	0	0	15	1	5	0	0	0	0	66	704
5:00 PM	0	0	11	13	0	4	14	0	0	6	0	5	0	0	0	1	54	677
5:05 PM	0	0	8	20	0	6	12	1	0	9	0	0	0	2	2	0	60	
5:10 PM	0	0	13	21	0	8	13	0	0	21	2	5	0	1	1	0	85	
5:15 PM	0	0	12	10	0	2	7	1	0	17	2	5	0	0	2	0	58	
5:20 PM	0	0	10	14	0	3	18	0	0	17	2	1	0	0	0	0	65	
5:25 PM	0	0	10	14	0	6	11	0	0	12	1	6	0	0	1	0	61	
5:30 PM	0	0	8	9	0	3	11	0	0	11	1	1	0	0	0	0	44	
5:35 PM	0	0	7	14	0	3	9	1	0	14	2	6	0	1	1	1	59	
5:40 PM	0	0	6	9	0	1	11	1	0	13	3	0	0	1	1	0	46	
5:45 PM	0	0	3	9	0	5	10	0	0	13	2	5	0	0	0	1	48	
5:50 PM	0	0	12	10	0	6	8	0	0	15	2	4	0	0	1	0	58	
5:55 PM	0	1	0	14	0	1	10	0	0	10	1	2	0	0	0	0	39	
Count Total	0	5	205	317	0	103	276	9	0	295	38	75	0	9	19	7	1,358	
Peak Hour	0	2	120	166	0	57	146	4	0	161	17	43	0	3	10	4	733	

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

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	1	0	1	0	2	4:00 PM	0	0	0	0	0	4:00 PM	0	1	0	0	1
4:05 PM	2	0	0	0	2	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	5	1	0	0	6	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	5	0	0	0	5	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	2	2
4:20 PM	3	0	1	0	4	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	1	0	0	1	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	2	2	1	0	5	4:30 PM	0	0	0	0	0	4:30 PM	1	0	0	0	1
4:35 PM	0	0	2	0	2	4:35 PM	0	0	0	0	0	4:35 PM	0	1	0	0	1
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	2	0	0	2
4:45 PM	2	0	1	0	3	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	1	0	1
4:55 PM	0	2	0	0	2	4:55 PM	0	0	0	0	0	4:55 PM	0	2	0	2	4
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	4	4
5:05 PM	1	0	0	0	1	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	2	0	1	3	5:10 PM	0	0	0	0	0	5:10 PM	0	1	0	3	4
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	1	1
5:20 PM	2	1	0	0	3	5:20 PM	0	0	0	0	0	5:20 PM	0	0	2	0	2
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	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	1	0	0	0	1
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	1	2	0	0	3	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	2	2
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	1	1	0	0	2	5:50 PM	0	0	0	0	0	5:50 PM	2	1	0	0	3
5:55 PM	0	1	1	0	2	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	25	13	7	1	46	Count Total	0	0	0	0	0	Count Total	4	8	3	14	29
Peak Hour	7	7	4	1	19	Peak Hour	0	0	0	0	0	Peak Hour	1	6	3	10	20



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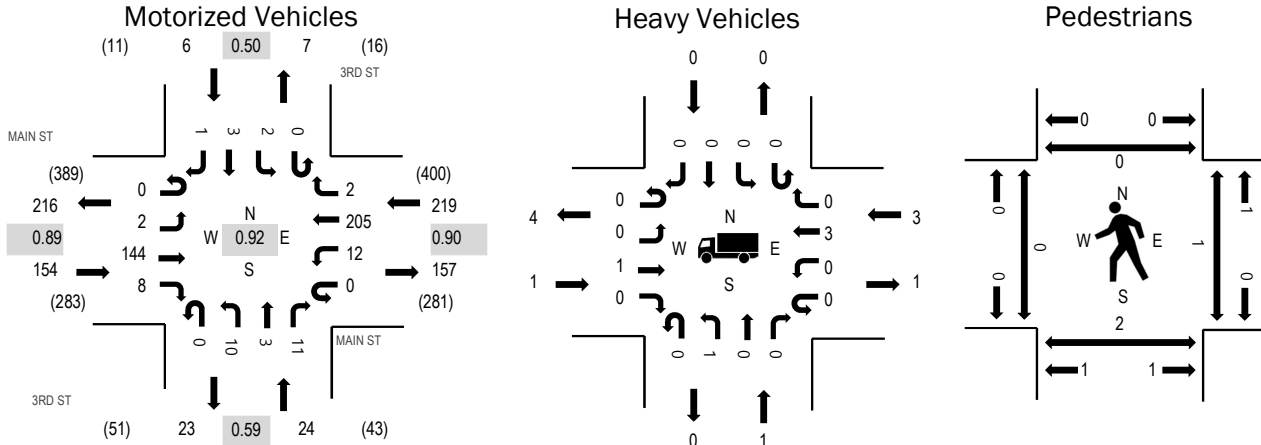
Location: 3 3RD ST & MAIN ST PM

Date: Tuesday, June 7, 2022

Peak Hour: 04:25 PM - 05:25 PM

Peak 15-Minutes: 05:10 PM - 05:25 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.6%	0.89
WB	1.4%	0.90
NB	4.2%	0.59
SB	0.0%	0.50
All	1.2%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	MAIN ST Eastbound				MAIN ST Westbound				3RD ST Northbound			3RD ST Southbound				Total	Rolling Hour	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right
4:00 PM	0	0	11	0	0	3	20	0	0	1	2	0	0	0	0	0	37	376
4:05 PM	0	1	10	1	0	0	14	0	0	0	0	0	0	0	0	0	26	375
4:10 PM	0	0	11	2	0	1	13	0	0	0	1	2	0	0	0	1	31	381
4:15 PM	1	0	11	0	0	1	15	0	0	2	0	0	0	0	0	0	30	390
4:20 PM	0	0	10	0	0	1	14	0	0	1	1	0	0	0	0	0	27	391
4:25 PM	0	0	10	0	0	1	17	0	0	0	0	0	0	1	0	0	29	403
4:30 PM	0	1	11	1	0	1	19	0	0	4	0	0	0	0	0	0	37	398
4:35 PM	0	0	12	0	0	2	14	1	0	1	1	1	0	0	1	0	33	392
4:40 PM	0	0	11	1	0	0	6	0	0	1	0	3	0	0	0	1	23	386
4:45 PM	0	0	15	0	0	1	16	0	0	0	1	1	0	0	0	0	34	392
4:50 PM	0	0	9	2	0	0	22	0	0	0	0	0	0	0	1	0	34	385
4:55 PM	0	1	17	0	0	1	14	0	0	0	0	2	0	0	0	0	35	379
5:00 PM	0	0	11	0	0	3	18	1	0	1	1	1	0	0	0	0	36	361
5:05 PM	0	0	9	0	0	0	21	0	0	1	0	0	0	1	0	0	32	
5:10 PM	0	0	21	1	0	0	17	0	0	0	0	0	0	0	1	0	40	
5:15 PM	0	0	9	0	0	1	21	0	0	0	0	0	0	0	0	0	31	
5:20 PM	0	0	9	3	0	2	20	0	0	2	0	3	0	0	0	0	39	
5:25 PM	0	0	9	1	0	0	13	0	0	1	0	0	0	0	0	0	24	
5:30 PM	0	1	13	1	0	1	13	0	0	1	0	1	0	0	0	0	31	
5:35 PM	0	0	12	1	0	2	10	0	0	0	0	2	0	0	0	0	27	
5:40 PM	0	0	6	0	0	3	17	0	0	1	1	0	0	1	0	0	29	
5:45 PM	0	1	7	0	0	2	17	0	0	0	0	0	0	0	0	0	27	
5:50 PM	0	0	13	1	0	2	10	1	0	0	0	0	0	0	1	0	28	
5:55 PM	0	0	4	1	0	1	7	0	0	1	0	1	0	0	2	0	17	
Count Total	1	5	261	16	0	29	368	3	0	18	8	17	0	3	6	2	737	
Peak Hour	0	2	144	8	0	12	205	2	0	10	3	11	0	2	3	1	403	

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

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	1	0	1	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	1	0	0	1
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	1	0	1	4:15 PM	0	0	0	0	0	4:15 PM	1	0	0	0	1
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	1	0	1	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	1	1	0	2	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	3	0	0	3
4:40 PM	0	0	1	0	1	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	1	0	0	1
4:50 PM	0	0	0	0	0	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	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	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	1	0	0	0	1	5:15 PM	0	0	0	0	0	5:15 PM	0	0	1	0	1
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	0	0	0	0	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	2	2	0	0	4
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	1	0	0	1
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	1	0	0	1
5:50 PM	0	0	1	0	1	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	2	2	0	0	4
Count Total	1	1	6	0	8	Count Total	0	0	0	0	0	Count Total	5	11	1	0	17
Peak Hour	1	1	3	0	5	Peak Hour	0	0	0	0	0	Peak Hour	0	4	1	0	5



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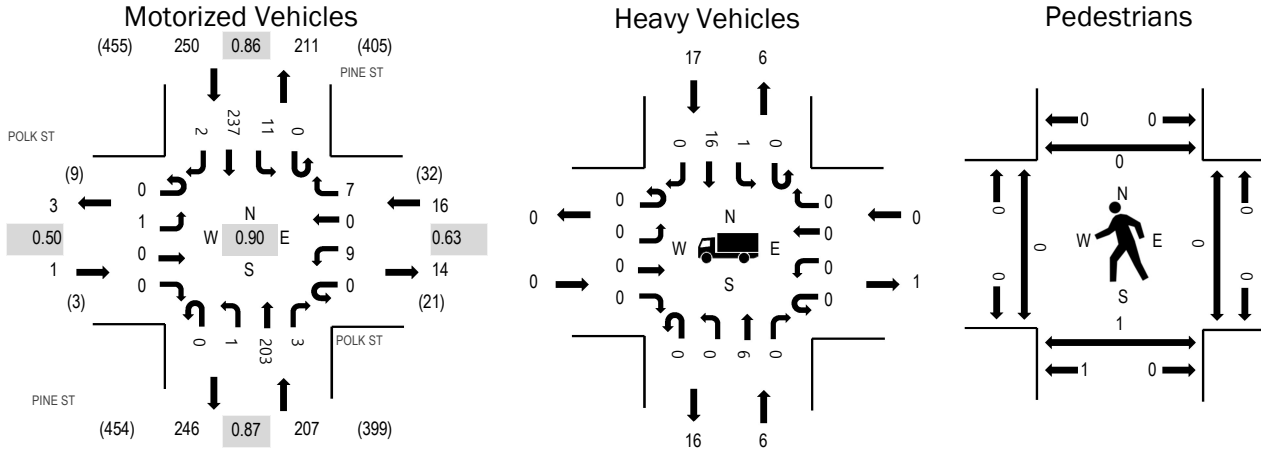
Location: 5 PINE ST & POLK ST PM

Date: Tuesday, June 7, 2022

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

Peak 15-Minutes: 05:05 PM - 05:20 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.50
WB	0.0%	0.63
NB	2.9%	0.87
SB	6.8%	0.86
All	4.9%	0.90

Traffic Counts - Motorized Vehicles

Interval Start Time	POLK ST Eastbound				POLK ST Westbound				PINE ST Northbound			PINE ST Southbound				Total	Rolling Hour	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right
4:00 PM	0	0	0	0	0	0	1	1	0	1	8	0	0	1	18	0	30	453
4:05 PM	0	0	0	1	0	1	0	0	0	0	12	0	0	0	17	0	31	453
4:10 PM	0	0	0	0	0	2	0	1	0	0	13	0	0	0	28	0	44	467
4:15 PM	0	0	0	0	0	1	0	0	0	0	15	0	0	0	22	0	38	474
4:20 PM	0	0	0	0	0	1	0	0	0	0	14	0	0	0	22	1	38	471
4:25 PM	0	0	0	0	0	0	0	1	0	0	19	0	0	0	16	0	36	471
4:30 PM	0	0	0	0	0	1	0	0	0	1	21	0	0	1	20	0	44	472
4:35 PM	0	1	0	0	0	1	0	0	0	0	17	1	0	2	19	0	41	457
4:40 PM	0	0	0	0	0	2	0	0	0	0	15	1	0	0	20	0	38	454
4:45 PM	0	0	0	0	0	2	0	3	0	0	17	0	0	1	23	0	46	445
4:50 PM	0	0	0	0	0	1	0	0	0	0	21	0	0	0	9	0	31	437
4:55 PM	0	0	0	0	0	0	0	1	0	0	16	0	0	3	16	0	36	445
5:00 PM	0	0	0	0	0	0	0	2	0	0	6	0	0	1	21	0	30	436
5:05 PM	0	0	0	0	0	0	0	0	0	0	18	0	0	2	25	0	45	474
5:10 PM	0	0	0	0	0	0	0	0	0	0	24	1	0	1	24	1	51	474
5:15 PM	0	0	0	0	0	0	0	0	0	0	19	0	0	0	16	0	35	474
5:20 PM	0	0	0	0	0	2	0	1	0	0	18	0	0	1	16	0	38	474
5:25 PM	0	0	0	0	0	1	0	0	0	0	17	1	0	1	17	0	37	474
5:30 PM	0	0	1	0	0	0	0	0	0	0	11	0	0	0	17	0	29	474
5:35 PM	0	0	0	0	0	0	0	1	0	0	20	0	0	0	17	0	38	474
5:40 PM	0	0	0	0	0	0	0	1	0	1	16	0	0	0	11	0	29	474
5:45 PM	0	0	0	0	0	1	0	0	0	0	21	0	0	1	15	0	38	474
5:50 PM	0	0	0	0	0	0	2	0	0	1	21	0	0	0	15	0	39	474
5:55 PM	0	0	0	0	0	0	0	1	0	0	12	0	0	1	13	0	27	474
Count Total	0	1	1	1	0	16	3	13	0	4	391	4	0	16	437	2	889	
Peak Hour	0	1	0	0	0	9	0	7	0	1	203	3	0	11	237	2	474	

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

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	2	2	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	2	2	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	1	0	4	5	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	6	6	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	2	2	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	2	0	0	2	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	1	0	3	4	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	1	1	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	2	2	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	1	0	1	2	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	1	1	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	2	0	0	2	5:05 PM	0	0	0	0	0	5:05 PM	0	1	0	0	1
5:10 PM	0	0	0	1	1	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	1	0	0	1	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	1	1	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	0	0	1	1	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	1	0	0	1	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	1	0	1	2	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	1	0	0	3	4
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	2	0	0	2	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	12	0	29	41	Count Total	0	0	0	0	0	Count Total	1	1	0	3	5
Peak Hour	0	6	0	17	23	Peak Hour	0	0	0	0	0	Peak Hour	0	1	0	0	1



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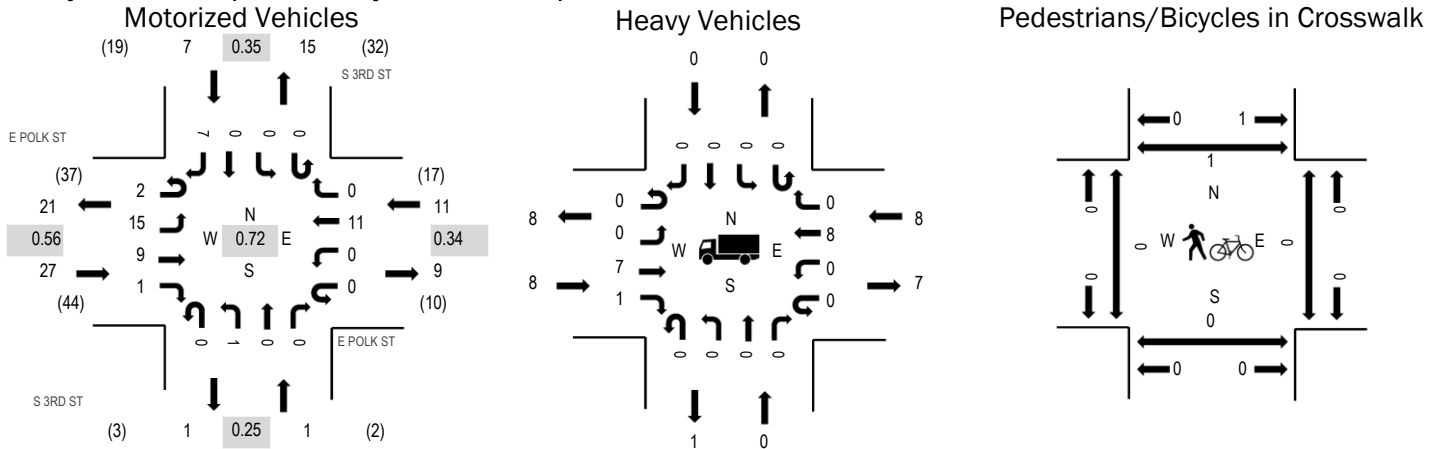
Location: 1 S 3RD ST & E POLK ST PM

Date: Thursday, September 15, 2022

Study Peak Hour: 02:00 PM - 03:00 PM

Peak 15-Minutes in Study Peak Hour: 02:40 PM - 02:55 PM

Study Peak Hour (for all study intersections)



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	29.6%	0.56
WB	72.7%	0.34
NB	0.0%	0.25
SB	0.0%	0.35
All	34.8%	0.72

Traffic Counts - Motorized Vehicles

Interval Start Time	E POLK ST Eastbound				E POLK ST Westbound				S 3RD ST Northbound				S 3RD ST Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
2:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	46
2:05 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	2	8	44
2:10 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	37
2:15 PM	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	39
2:20 PM	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	43
2:25 PM	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	5	40
2:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	37
2:35 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	38
2:40 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	4	37
2:45 PM	0	0	0	1	0	0	6	0	0	0	0	0	0	0	0	1	8	35
2:50 PM	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	1	4	34
2:55 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	33
3:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
3:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
3:10 PM	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	
3:15 PM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	3	7	
3:20 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2	
3:25 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
3:30 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	3	
3:35 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	
3:40 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
3:45 PM	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	4	7	
3:50 PM	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	
3:55 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	
Count Total	2	29	10	3	0	0	14	3	0	2	0	0	0	0	0	19	82	
Peak Hour	2	15	9	1	0	0	11	0	0	1	0	0	0	0	0	7	46	

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

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
2:00 PM	0	0	0	0	0	2:00 PM	0	0	0	0	0	2:00 PM	0	0	0	0	0
2:05 PM	1	0	0	0	1	2:05 PM	0	0	0	0	0	2:05 PM	0	0	0	0	0
2:10 PM	0	0	1	0	1	2:10 PM	0	0	0	0	0	2:10 PM	0	0	0	1	1
2:15 PM	0	0	0	0	0	2:15 PM	0	0	0	0	0	2:15 PM	0	0	0	0	0
2:20 PM	2	0	0	0	2	2:20 PM	0	0	0	0	0	2:20 PM	0	0	0	0	0
2:25 PM	3	0	0	0	3	2:25 PM	0	0	0	0	0	2:25 PM	0	0	0	0	0
2:30 PM	1	0	0	0	1	2:30 PM	0	0	0	0	0	2:30 PM	0	0	0	0	0
2:35 PM	0	0	0	0	0	2:35 PM	0	0	0	0	0	2:35 PM	0	0	0	0	0
2:40 PM	0	0	0	0	0	2:40 PM	0	0	0	0	0	2:40 PM	0	0	0	0	0
2:45 PM	1	0	5	0	6	2:45 PM	0	0	0	0	0	2:45 PM	0	0	0	0	0
2:50 PM	0	0	2	0	2	2:50 PM	0	0	0	0	0	2:50 PM	0	0	0	0	0
2:55 PM	0	0	0	0	0	2:55 PM	0	0	0	0	0	2:55 PM	0	0	0	0	0
3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0
3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0
3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0
3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0
3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0
3:30 PM	1	0	1	0	2	3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0
3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0
3:40 PM	1	0	0	0	1	3:40 PM	0	0	0	0	0	3:40 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0
3:50 PM	0	0	0	0	0	3:50 PM	0	0	0	0	0	3:50 PM	0	0	0	0	0
3:55 PM	0	0	0	0	0	3:55 PM	0	0	0	0	0	3:55 PM	0	0	0	0	0
Count Total	10	0	9	0	19	Count Total	0	0	0	0	0	Count Total	0	0	0	1	1
Peak Hour	8	0	8	0	16	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	1	1



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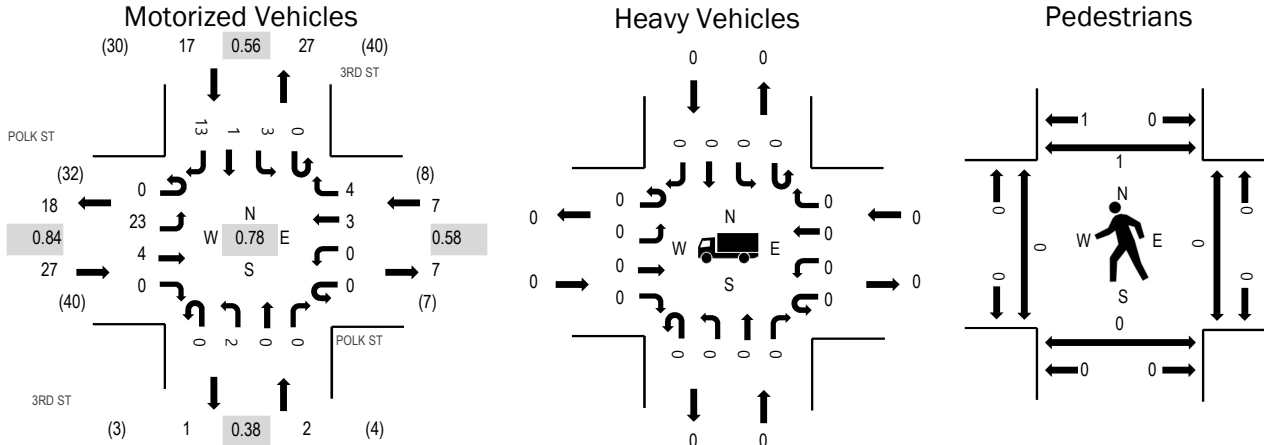
Location: 6 3RD ST & POLK ST PM

Date: Tuesday, June 7, 2022

Peak Hour: 04:40 PM - 05:40 PM

Peak 15-Minutes: 05:25 PM - 05:40 PM

Peak Hour



Note: Total study counts contained in parentheses.

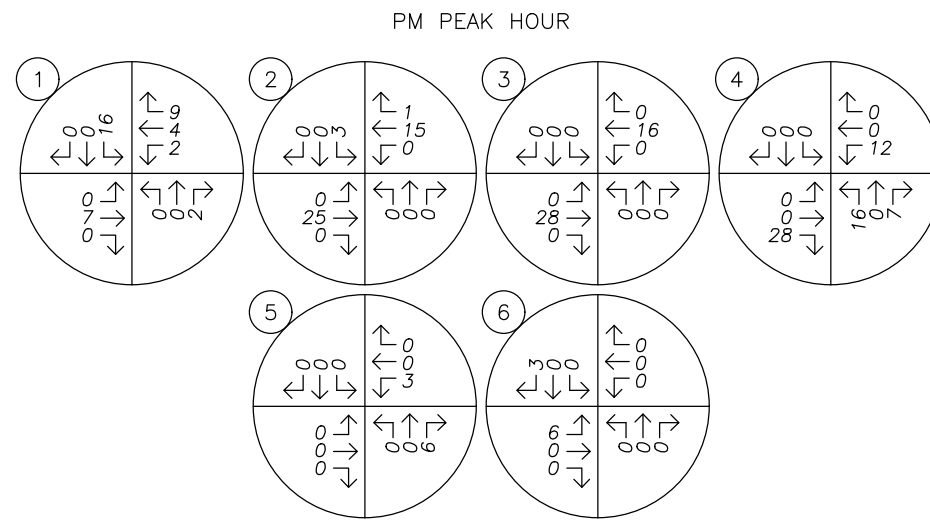
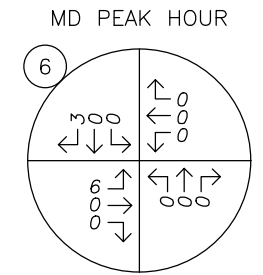
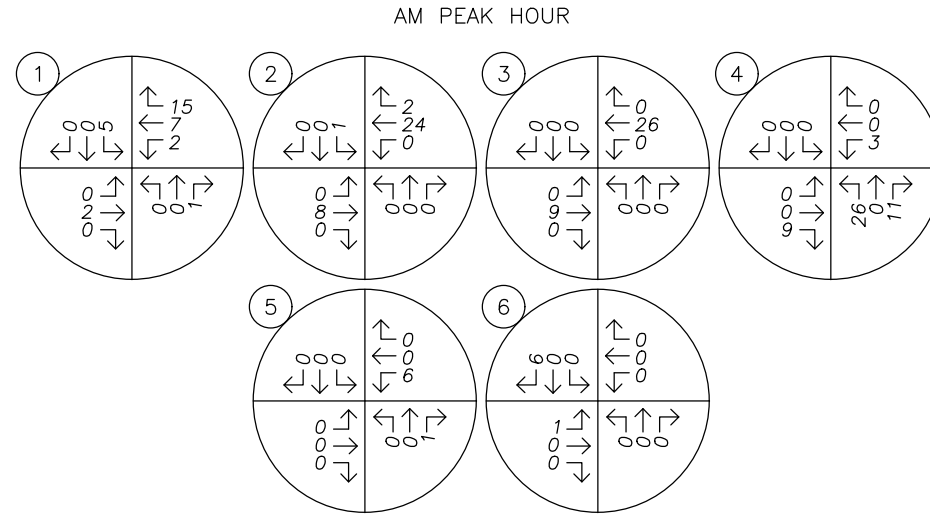
	HV%	PHF
EB	0.0%	0.84
WB	0.0%	0.58
NB	0.0%	0.38
SB	0.0%	0.56
All	0.0%	0.78

Traffic Counts - Motorized Vehicles

Interval Start Time	POLK ST Eastbound				POLK ST Westbound				3RD ST Northbound			3RD ST Southbound				Total	Rolling Hour	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right
4:00 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	4	36
4:05 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	36
4:10 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	36
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
4:20 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	40
4:25 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	42
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	48
4:35 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	50
4:40 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	1	0	2	7	53
4:45 PM	0	2	0	0	0	0	1	1	0	0	0	0	0	0	0	1	5	48
4:50 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	48
4:55 PM	0	3	0	0	0	0	0	1	0	1	0	0	0	0	0	1	6	48
5:00 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4	46
5:05 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	
5:10 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
5:15 PM	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	
5:20 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	
5:25 PM	0	2	1	0	0	0	1	0	0	0	0	0	0	0	1	2	7	
5:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	
5:35 PM	0	2	1	0	0	0	0	1	0	0	0	0	0	0	0	3	7	
5:40 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	
5:50 PM	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3	
5:55 PM	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	4	
Count Total	0	34	4	2	0	0	3	5	0	3	1	0	0	3	1	26	82	
Peak Hour	0	23	4	0	0	0	3	4	0	2	0	0	0	3	1	13	53	

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

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	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	0	0	0	0	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	0	0	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	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	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	1	1
5:30 PM	0	0	0	0	0	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	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	2	2
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	2	0	0	2
Count Total	0	0	0	0	0	Count Total	0	0	0	0	0	Count Total	0	2	0	3	5
Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	1	1



No Scale



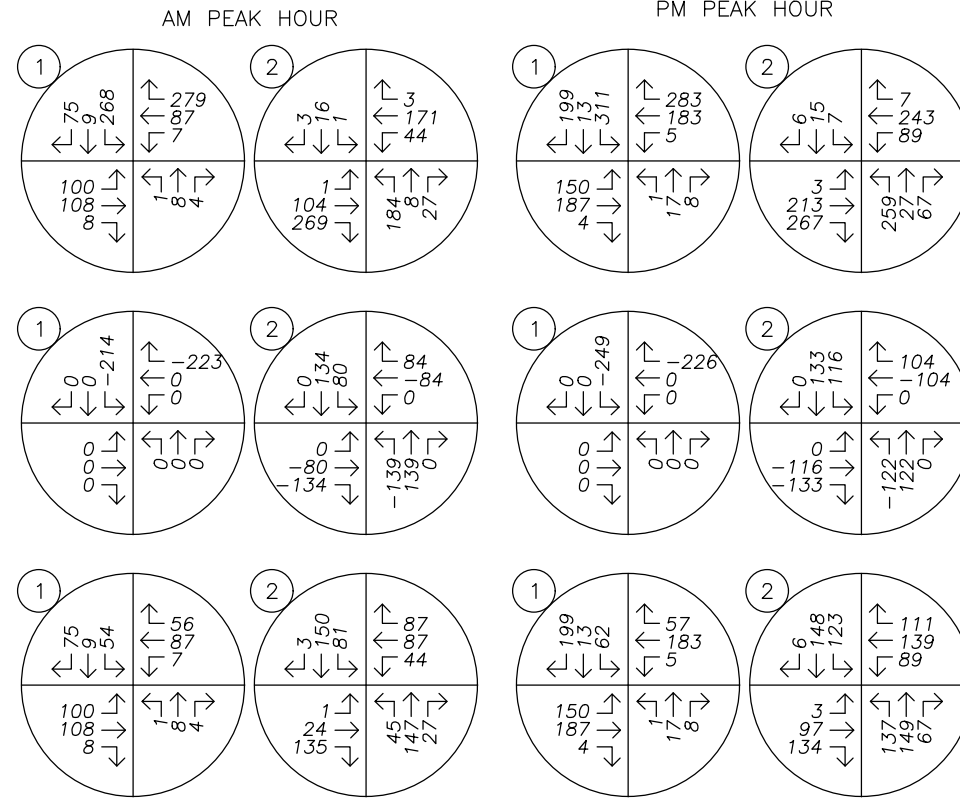
TRAFFIC VOLUMES
In-Process Development Trips
AM, MD, & PM Peak Hours

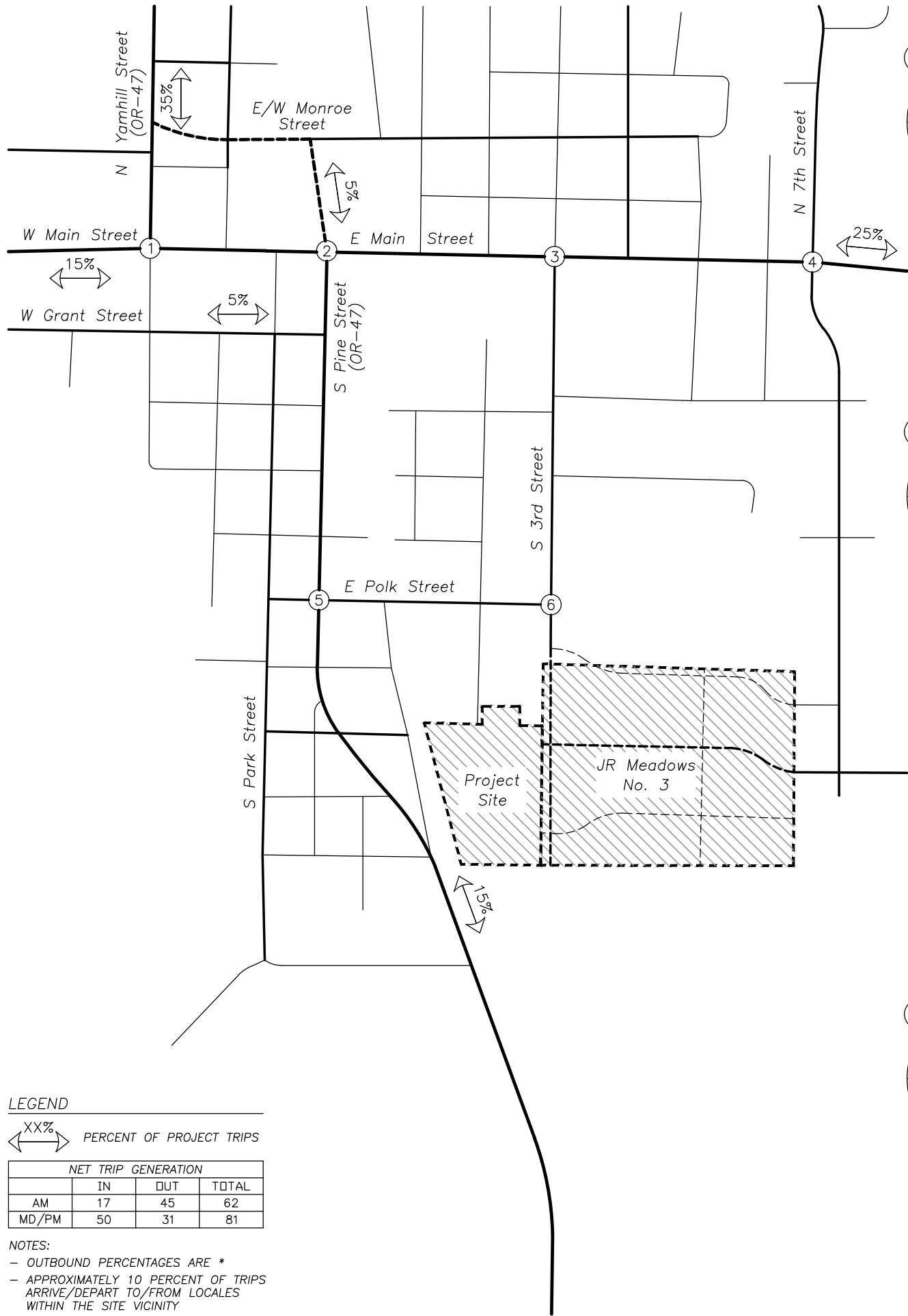


2025 VOLUMES
(NO BYPASS)

REROUTED
TRAFFIC

2025 VOLUMES
(WITH BYPASS)

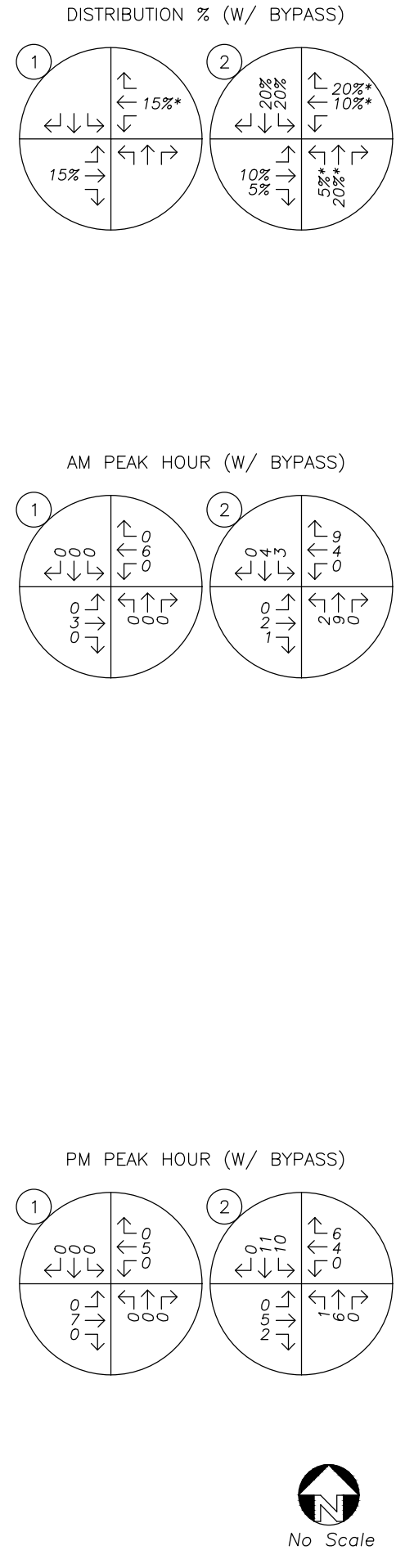
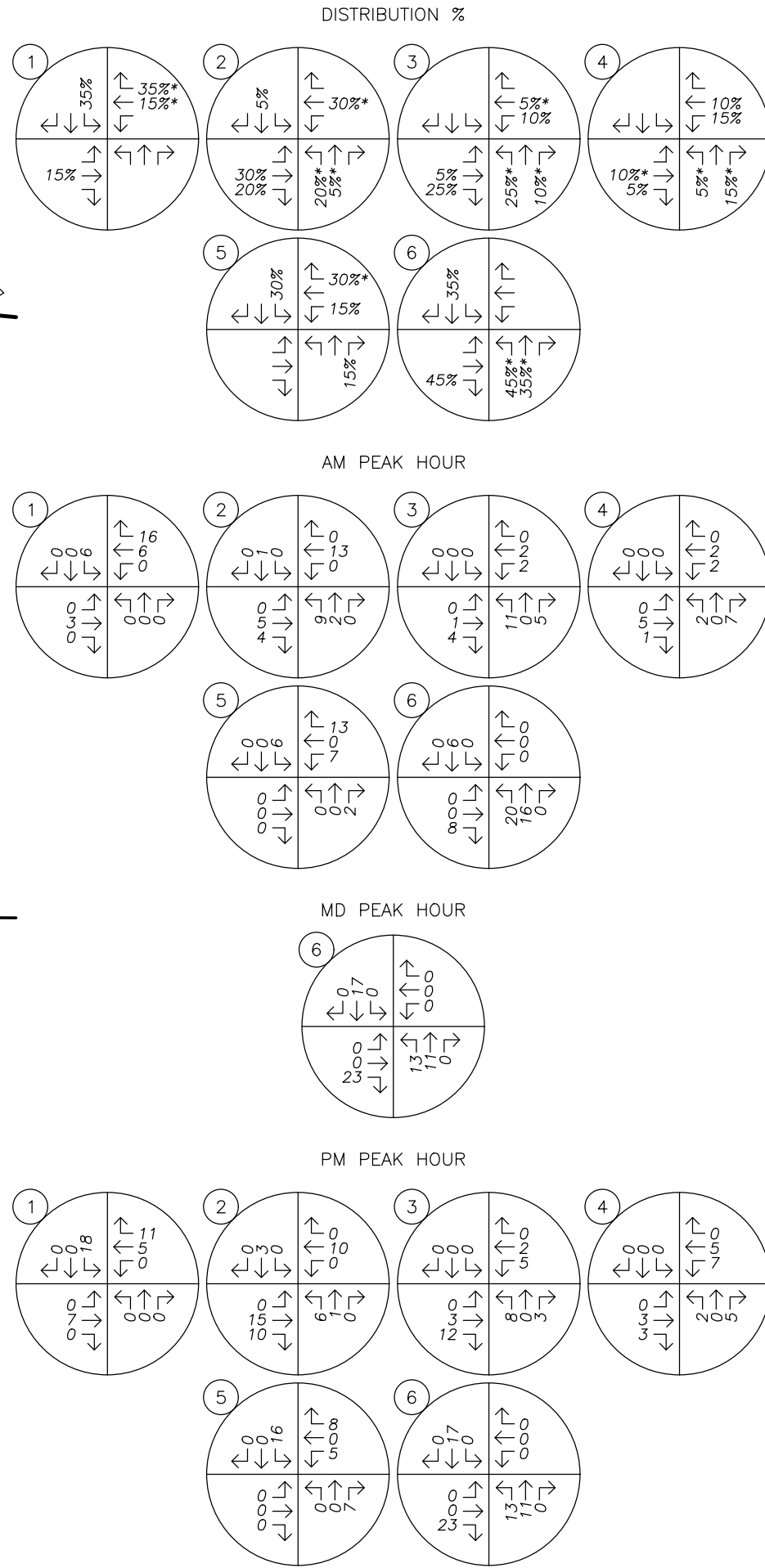




LEGEND
 XX% PERCENT OF PROJECT TRIPS

NET TRIP GENERATION			
	IN	OUT	TOTAL
AM	17	45	62
MD/PM	50	31	81

NOTES:
 - OUTBOUND PERCENTAGES ARE *
 - APPROXIMATELY 10 PERCENT OF TRIPS ARRIVE/DEPART TO/FROM LOCALES WITHIN THE SITE VICINITY



No Scale

TRAFFIC VOLUMES

JR Meadows No. 3 Subdivision Trips
 AM, MD, & PM Peak Hours



Appendix D

ODOT Main Street Bypass Project



Name: **OR47: Realignment (Carlton)**

Key: **18746**

Description **Reroute OR47 on N Pine Street and W Monroe Street and construct new OR47 alignment at Yamhill Street. Jurisdictionally transfer OR47 from Main Street/Yamhill Street to City of Carlton to aid traffic flow.**

Region: **2**

MPO: **Non-MPO**

Work Type: **BIKPED, OPERAT**

Applicant: **CITY OF CARLTON**

Status: **PROJECT SCHEDULED FOR CONSTRUCTION**

Location(s)-					
Mileposts	Length	Route	Highway	ACT	County(s)
				MID-WILLAMETTE VALLEY ACT	YAMHILL
				MID-WILLAMETTE VALLEY ACT	YAMHILL
37.69 to 38.04	0.35	OR-47	TUALATIN VALLEY HIGHWAY	MID-WILLAMETTE VALLEY ACT	YAMHILL

Current Project Estimate											
	Planning	Prelim. Engineering	Right of Way	Utility Relocation	Construction	Other	Project Total				
Year	2018		2023		2024		2024				
Total		\$988,251.38		\$2,450,000.00		\$115,000.00		\$5,637,025.00		\$450,000.00	\$9,640,276.38
Fund 1		Z300 \$482,972.96	Y240 \$2,198,385.00	Y240 \$103,189.50	Y240 \$5,058,102.53	S010 \$450,000.00					
Match		\$55,278.42	\$251,615.00	\$11,810.50	\$578,922.47						
Fund 2		Z3E3 \$403,785.00									
Match		\$46,215.00									

Footnote:

Most Recent Approved Amendment	
Amendment No: 21-24-1213	Approval Date: 10/22/2021
Requested Action: Update project name and location milepoints from 37.72-38.06 to 37.69-38.04 and add locations at Pine/Monroe and Yamhill streets. Slip the Right of Way, Utility Relocation, and Construction phases. Increase the total project estimate by \$1,920,000.	

Name: **OR219: Edgewood Dr - Aldercrest Dr**

Key: **18749**

Description **Construct bike lanes, sidewalks, curbs, curb ramps, drainage, water quality facilities, and landscape buffers on OR 219 between Edgewood Dr and Aldercrest Dr to improve pedestrian safety.**

Region: **2**

MPO: **Non-MPO**

Work Type: **BIKPED**

Applicant: **CITY OF NEWBERG**




Status: **PROJECT SCHEDULED FOR CONSTRUCTION**

Location(s)-					
Mileposts	Length	Route	Highway	ACT	County(s)
18.71 to 19.38	0.67	OR-219	HILLSBORO/SILVERTON	MID-WILLAMETTE VALLEY ACT	YAMHILL

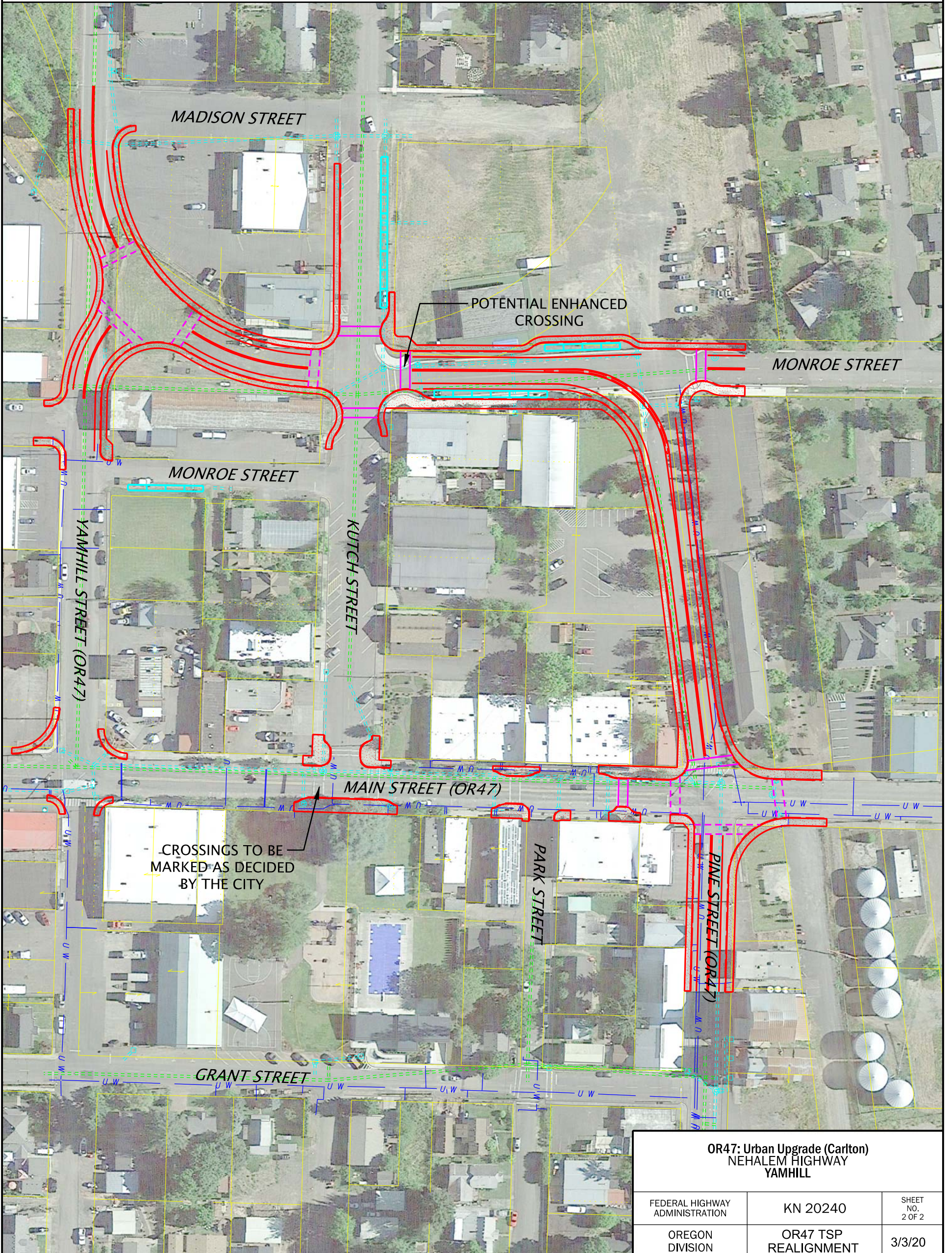
Current Project Estimate											
	Planning	Prelim. Engineering	Right of Way	Utility Relocation	Construction	Other	Project Total				
Year	2017		2021		2022						
Total		\$773,635.00		\$380,000.00		\$1,797,543.15		\$2,951,178.15			
Fund 1		Z302 \$465,698.70	Z300 \$219,938.23		Y300 \$1,054,248.44						
Match		\$53,301.30	\$25,172.92		\$120,663.46						
Fund 2		Z3E2 \$228,483.99	Z302 \$120,183.79		Y307 \$558,687.02						
Match		\$26,151.01	\$13,755.57		\$63,944.23						
Fund 3			M30E \$805.69								
Match			\$92.21								
Fund 4			M300 \$46.29								
Match			\$5.30								

Footnote:

Most Recent Approved Amendment	
Amendment No: 21-24-2325	Approval Date: 7/17/2022
Requested Action: Update project description to accurately describe work to be done.	

-  POTENTIAL PARKING AREAS
-  POTENTIAL CROSSING (UNMARKED)
-  POTENTIAL CROSSING (MARKED)

**APPROXIMATE AERIAL
CONCEPT DRAWING
INFORMATION ONLY**



OR47: Urban Upgrade (Carlton) NEHALEM HIGHWAY YAMHILL		
FEDERAL HIGHWAY ADMINISTRATION	KN 20240	SHEET NO. 2 OF 2
OREGON DIVISION	OR47 TSP REALIGNMENT	3/3/20

Appendix E

Crash History Data



OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF CARLTON, YAMHILL COUNTY

YAMHILL ST at MAIN ST, City of Carlton, Yamhill County, 01/01/2016 to 12/31/2020

1 - 2 of 2 Crash records shown.

SER#	S	D	M	P	R	J	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE																							
INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE	A S																		
RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	G E LICNS PED																		
UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P# TYPE SVRTY E X RES LOC ERROR ACT EVENT CAUSE																	
00969	N	N	N	N	N	N	09/27/2019	09	MAIN ST	INTER	CROSS	N	Y	CLR	FIX OBJ	01	NONE	9	TURN-R																	
CITY							FR	0	YAMHILL ST	S		STOP SIGN	N	DRY	FIX	N/A		S -E																		
N							5P			05	0		N	DAY	PDO	SEMI TOW			01	DRVR	NONE	00	Unk	UNK	000	000	00									
N							45 17 39.07	-123 10															UNK													
							46.62																													
00357	N	N	N	N	N	N	04/19/2019	06	MAIN ST	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE	9	STRGHT																	
CITY							FR		YAMHILL ST	CN		STOP SIGN	N	WET	ANGL	N/A		E -W																		
N							4P			02	0		N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000	000	00									
N							45 17 39.35	-123 10	002900100S00														UNK													
							46.63																													
																02	NONE	9	STRGHT																	
																N/A		S -N																		
																PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000	000	00									
																							UNK													

Disclaimer: 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 Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF CARLTON, YAMHILL COUNTY

MAIN ST at 3RD ST, City of Carlton, Yamhill County, 01/01/2016 to 12/31/2020

SER#	P	R	J	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	SPCL USE	MOVE	A	S	INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED	RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
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CITY OF CARLTON, YAMHILL COUNTY

POLK ST at PINE ST, City of Carlton, Yamhill County, 01/01/2016 to 12/31/2020

SER#	P	R	J	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	SPCL USE	MOVE	A	S	INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED	RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 URBAN NON-SYSTEM CRASH LISTING
 POLK ST at 3RD ST, City of Carlton, Yamhill County, 01/01/2016 to 12/31/2020

CITY OF CARLTON, YAMHILL COUNTY

SER#	P	R	J	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	SPCL USE	TRLR QTY	MOVE	A	S	RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED	UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
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Appendix F

Preliminary Signal Warrant Analysis

Preliminary All-Way Stop-Control Warrant Analysis





Multi-Way Stop Warrant Analysis

Project: 2nd Street Subdivision
 Date: 2/6/2023
 Scenario: 2026 Background Conditions

Major Street:	Main Street	Minor Street:	Yamhill Street
PM Peak Hour Volumes:	586	PM Peak Hour Volumes:	313

Warrant Used:

<u> </u>	100 percent of standard warrants used
<u> X </u>	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph.

ADT on Major St. (total of both approaches)		ADT on Minor St. (total of both approaches)	
100%	70%	100%	70%
<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
5,310	3,717	3,540	2,478

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Multi-Way Stop Warrant Met?
Section 2B.07.C			
Major Street	5,860	3,717	
Minor Street	3,130	2,478	Yes

Note: Minor Street includes the total of vehicular, pedestrian, and bicycle traffic.

Traffic Signal Warrant Analysis



Project: 2nd Street Subdivision
 Date: 2/6/2023
 Scenario: Existing Conditions

Major Street:	Main Street	Minor Street:	Yamhill Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	745	PM Peak Hour Volumes:	300

Warrant Used:

_____ 100 percent of standard warrants used
 X 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
Major St.	Minor St.	100% Warrants	70% Warrants	100% Warrants	70% Warrants
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
<i>Warrant 1</i>			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	7,450	6,200	
Minor Street*	3,000	1,850	Yes
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	7,450	9,300	
Minor Street*	3,000	950	No
<i>Combination Warrant</i>			
Major Street	7,450	7,440	
Minor Street*	3,000	1,480	Yes

Note: Minor street right-turning traffic volumes reduced by 85% of the right-turn capacity per APM.

Traffic Signal Warrant Analysis



Project: 2nd Street Subdivision
 Date: 2/6/2023
 Scenario: Existing Conditions

Major Street:	Main Street	Minor Street:	Pine Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	737	PM Peak Hour Volumes:	278

Warrant Used:

 100 percent of standard warrants used
 X 70 percent of standard warrants used due to 85th percentile speed in excess
 of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>100%</u> <u>Warrants</u>	<u>70%</u> <u>Warrants</u>	<u>100%</u> <u>Warrants</u>	<u>70%</u> <u>Warrants</u>
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	7,370	6,200	
Minor Street*	2,780	1,850	Yes
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	7,370	9,300	
Minor Street*	2,780	950	No
<i>Combination Warrant</i>			
Major Street	7,370	7,440	
Minor Street*	2,780	1,480	No

Note: Minor street right-turning traffic volumes reduced by 85% of the right-turn capacity per APM.

Traffic Signal Warrant Analysis



Project: 2nd Street Subdivision
 Date: 2/6/2023
 Scenario: 2026 Buildout Conditions (with Bypass & JR Meadows No. 3 Subdivision)

Major Street:	Main Street	Minor Street:	Yamhill Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	603	PM Peak Hour Volumes:	224

Warrant Used:

- 100 percent of standard warrants used
- 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
Major St.	Minor St.	100% Warrants	70% Warrants	100% Warrants	70% Warrants
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	6,030	6,200	
Minor Street*	2,240	1,850	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	6,030	9,300	
Minor Street*	2,240	950	No
<i>Combination Warrant</i>			
Major Street	6,030	7,440	
Minor Street*	2,240	1,480	No

Note: Minor street right-turning traffic volumes reduced by 25%.

Traffic Signal Warrant Analysis



Project: 2nd Street Subdivision
 Date: 2/6/2023
 Scenario: 2026 Background Conditions (with Bypass)

Major Street:	Pine Street	Minor Street:	Main Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	630	PM Peak Hour Volumes:	228

Warrant Used:

<u> </u>	100 percent of standard warrants used
<u> X </u>	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
Major St.	Minor St.	100% Warrants	70% Warrants	100% Warrants	70% Warrants
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
<i>Warrant 1</i>			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	6,300	6,200	
Minor Street*	2,280	1,850	Yes
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	6,300	9,300	
Minor Street*	2,280	950	No
<i>Combination Warrant</i>			
Major Street	6,300	7,440	
Minor Street*	2,280	1,480	No

Note: Minor street right-turning traffic volumes reduced by 85% of the right-turn capacity per APM.

Traffic Signal Warrant Analysis



Project: 2nd Street Subdivision
 Date: 2/6/2023
 Scenario: 2026 Buildout Conditions (with JR Meadows No. 3 Subdivision)

Major Street:	Main Street	Minor Street:	3rd Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	657	PM Peak Hour Volumes:	46

Warrant Used:

_____ 100 percent of standard warrants used
 X 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
Major St.	Minor St.	100% Warrants	70% Warrants	100% Warrants	70% Warrants
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
<i>Warrant 1</i>			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	6,570	6,200	
Minor Street*	460	1,850	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	6,570	9,300	
Minor Street*	460	950	No
<i>Combination Warrant</i>			
Major Street	6,570	7,440	
Minor Street*	460	1,480	No

Note: Minor street right-turning traffic volumes reduced by 25%.

Traffic Signal Warrant Analysis



Project: 2nd Street Subdivision
 Date: 2/6/2023
 Scenario: 2026 Buildout Conditions (with JR Meadows No. 3 Subdivision)

Major Street:	Main Street	Minor Street:	7th Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	985	PM Peak Hour Volumes:	37

Warrant Used:

<u> </u>	100 percent of standard warrants used
<u> X </u>	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
Major St.	Minor St.	100% Warrants	70% Warrants	100% Warrants	70% Warrants
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
<i>Warrant 1</i>			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	9,850	6,200	
Minor Street*	370	1,850	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	9,850	9,300	
Minor Street*	370	950	No
<i>Combination Warrant</i>			
Major Street	9,850	7,440	
Minor Street*	370	1,480	No

Note: Minor street right-turning traffic volumes reduced by 25%.

Traffic Signal Warrant Analysis



Project: 2nd Street Subdivision
 Date: 2/6/2023
 Scenario: 2026 Buildout Conditions (with JR Meadows No. 3 Subdivision)

Major Street:	Pine Street	Minor Street:	Polk Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	782	PM Peak Hour Volumes:	39

Warrant Used:

<u> </u>	100 percent of standard warrants used
<u> X </u>	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
Major St.	Minor St.	100% Warrants	70% Warrants	100% Warrants	70% Warrants
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	7,820	6,200	
Minor Street*	390	1,850	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	7,820	9,300	
Minor Street*	390	950	No
<i>Combination Warrant</i>			
Major Street	7,820	7,440	
Minor Street*	390	1,480	No

Note: Minor street right-turning traffic volumes reduced by 85% of the right-turn capacity per APM.

Traffic Signal Warrant Analysis



Project: 2nd Street Subdivision
 Date: 2/6/2023
 Scenario: 2026 Buildout Conditions (with JR Meadows No. 3 Subdivision)

Major Street:	3rd Street	Minor Street:	Polk Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	85	PM Peak Hour Volumes:	71

Warrant Used:

<u> </u>	100 percent of standard warrants used
<u> X </u>	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
Major St.	Minor St.	100% Warrants	70% Warrants	100% Warrants	70% Warrants
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
<i>Warrant 1</i>			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	850	6,200	
Minor Street*	710	1,850	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	850	9,300	
Minor Street*	710	950	No
<i>Combination Warrant</i>			
Major Street	850	7,440	
Minor Street*	710	1,480	No

Note: Minor street right-turning traffic volumes reduced by 25%.

Appendix G

Level of Service Descriptions

Capacity Reports





Level of Service Definitions

Level of service is used to describe the quality of traffic flow. Levels of service A to C are considered good, and rural roads are usually designed for level of service C. Urban streets and signalized intersections are typically designed for level of service D. Level of service E is considered to be the limit of acceptable delay. For unsignalized intersections, level of service E is generally considered acceptable. Here is a more complete description of levels of service:

- *Level of service A:* Very low delay at intersections, with all traffic signal cycles clearing and no vehicles waiting through more than one signal cycle. On highways, low volume and high speeds, with speeds not restricted by other vehicles.
- *Level of service B:* Operating speeds beginning to be affected by other traffic; short traffic delays at intersections. Higher average intersection delay than for level of service A resulting from more vehicles stopping.
- *Level of service C:* Operating speeds and maneuverability closely controlled by other traffic; higher delays at intersections than for level of service B due to a significant number of vehicles stopping. Not all signal cycles clear the waiting vehicles. This is the recommended design standard for rural highways.
- *Level of service D:* Tolerable operating speeds; long traffic delays occur at intersections. The influence of congestion is noticeable. At traffic signals many vehicles stop, and the proportion of vehicles not stopping declines. The number of signal cycle failures, for which vehicles must wait through more than one signal cycle, are noticeable. This is typically the design level for urban signalized intersections.
- *Level of service E:* Restricted speeds, very long traffic delays at traffic signals, and traffic volumes near capacity. Flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate to level of service F. Traffic signal cycle failures are frequent occurrences. For unsignalized intersections, level of service E or better is generally considered acceptable.
- *Level of service F:* Extreme delays, resulting in long queues which may interfere with other traffic movements. There may be stoppages of long duration, and speeds may drop to zero. There may be frequent signal cycle failures. Level of service F will typically result when vehicle arrival rates are greater than capacity. It is considered unacceptable by most drivers.



Level of Service Criteria
For Signalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (Seconds)
A	<10
B	10-20
C	20-35
D	35-55
E	55-80
F	>80

Level of Service Criteria
For Unsignalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (Seconds)
A	<10
B	10-15
C	15-25
D	25-35
E	35-50
F	>50

HCM 6th TWSC

1: N Yamhill Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	8.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	92	7	98	3	1	7	74	258	5	8	257	69
Future Vol, veh/h	92	7	98	3	1	7	74	258	5	8	257	69
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, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	12	12	12	18	18	18	12	12	12	9	9	9
Mvmt Flow	111	8	118	4	1	8	89	311	6	10	310	83

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	869	867	352	927	905	314	393	0	0	317	0	0
Stage 1	372	372	-	492	492	-	-	-	-	-	-	-
Stage 2	497	495	-	435	413	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.62	6.32	7.28	6.68	6.38	4.22	-	-	4.19	-	-
Critical Hdwy Stg 1	6.22	5.62	-	6.28	5.68	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.62	-	6.28	5.68	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.108	3.408	3.662	4.162	3.462	2.308	-	-	2.281	-	-
Pot Cap-1 Maneuver	262	280	670	233	260	691	1113	-	-	1205	-	-
Stage 1	629	602	-	530	522	-	-	-	-	-	-	-
Stage 2	537	530	-	570	567	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	237	250	670	172	232	691	1113	-	-	1205	-	-
Mov Cap-2 Maneuver	237	250	-	172	232	-	-	-	-	-	-	-
Stage 1	568	595	-	479	471	-	-	-	-	-	-	-
Stage 2	478	479	-	458	561	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	34.4		15.9		1.9		0.2	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1113	-	-	350	345	1205	-	-
HCM Lane V/C Ratio	0.08	-	-	0.678	0.038	0.008	-	-
HCM Control Delay (s)	8.5	0	-	34.4	15.9	8	0	-
HCM Lane LOS	A	A	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	4.7	0.1	0	-	-

HCM 6th TWSC

2: S Pine Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	15	41	1	136	7	180	25	89	263	1
Future Vol, veh/h	3	0	15	41	1	136	7	180	25	89	263	1
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, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	11	11	11	6	6	6	15	15	15	6	6	6
Mvmt Flow	4	0	20	54	1	179	9	237	33	117	346	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	943	869	347	863	853	254	347	0	0	270	0	0
Stage 1	581	581	-	272	272	-	-	-	-	-	-	-
Stage 2	362	288	-	591	581	-	-	-	-	-	-	-
Critical Hdwy	7.21	6.61	6.31	7.16	6.56	6.26	4.25	-	-	4.16	-	-
Critical Hdwy Stg 1	6.21	5.61	-	6.16	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.21	5.61	-	6.16	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.599	4.099	3.399	3.554	4.054	3.354	2.335	-	-	2.254	-	-
Pot Cap-1 Maneuver	234	281	676	270	292	775	1143	-	-	1271	-	-
Stage 1	484	485	-	725	677	-	-	-	-	-	-	-
Stage 2	638	658	-	486	493	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	163	247	676	238	256	775	1143	-	-	1271	-	-
Mov Cap-2 Maneuver	163	247	-	238	256	-	-	-	-	-	-	-
Stage 1	480	430	-	718	671	-	-	-	-	-	-	-
Stage 2	485	652	-	418	437	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.6		18.1		0.3		2	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1143	-	-	443	506	1271	-	-
HCM Lane V/C Ratio	0.008	-	-	0.053	0.463	0.092	-	-
HCM Control Delay (s)	8.2	0	-	13.6	18.1	8.1	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	2.4	0.3	-	-

HCM 6th TWSC

3: S 3rd Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	91	23	30	120	3	55	21	20	8	8	3
Future Vol, veh/h	0	91	23	30	120	3	55	21	20	8	8	3
Conflicting Peds, #/hr	3	0	9	9	0	3	15	0	0	0	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	4	4	4	8	8	8	2	2	2	11	11	11
Mvmt Flow	0	125	32	41	164	4	75	29	27	11	11	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	171	0	0	166	0	0	421	403	150	420	417	184
Stage 1	-	-	-	-	-	-	150	150	-	251	251	-
Stage 2	-	-	-	-	-	-	271	253	-	169	166	-
Critical Hdwy	4.14	-	-	4.18	-	-	7.12	6.52	6.22	7.21	6.61	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.21	5.61	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.21	5.61	-
Follow-up Hdwy	2.236	-	-	2.272	-	-	3.518	4.018	3.318	3.599	4.099	3.399
Pot Cap-1 Maneuver	1394	-	-	1376	-	-	543	536	896	528	513	836
Stage 1	-	-	-	-	-	-	853	773	-	734	683	-
Stage 2	-	-	-	-	-	-	735	698	-	812	744	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1390	-	-	1364	-	-	506	512	888	476	490	822
Mov Cap-2 Maneuver	-	-	-	-	-	-	506	512	-	476	490	-
Stage 1	-	-	-	-	-	-	845	766	-	732	658	-
Stage 2	-	-	-	-	-	-	685	673	-	757	737	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.5			13.4			12.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	557	1390	-	-	1364	-	-	517
HCM Lane V/C Ratio	0.236	-	-	-	0.03	-	-	0.05
HCM Control Delay (s)	13.4	0	-	-	7.7	0	-	12.3
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.9	0	-	-	0.1	-	-	0.2

HCM 6th TWSC

4: S 7th Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	344	3	2	214	2	10	0	5	25	0	37
Future Vol, veh/h	10	344	3	2	214	2	10	0	5	25	0	37
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3	0	0	0	2	2	2
Mvmt Flow	11	382	3	2	238	2	11	0	6	28	0	41

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	241	0	0	385	0	0	670	651	384	653	651	240
Stage 1	-	-	-	-	-	-	406	406	-	244	244	-
Stage 2	-	-	-	-	-	-	264	245	-	409	407	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1320	-	-	1168	-	-	373	390	668	380	388	799
Stage 1	-	-	-	-	-	-	626	601	-	760	704	-
Stage 2	-	-	-	-	-	-	746	707	-	619	597	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1319	-	-	1168	-	-	350	385	668	373	383	798
Mov Cap-2 Maneuver	-	-	-	-	-	-	350	385	-	373	383	-
Stage 1	-	-	-	-	-	-	619	594	-	751	702	-
Stage 2	-	-	-	-	-	-	706	705	-	607	590	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	14	12.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	416	1319	-	-	1168	-	-	547
HCM Lane V/C Ratio	0.04	0.008	-	-	0.002	-	-	0.126
HCM Control Delay (s)	14	7.8	0	-	8.1	0	-	12.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4

HCM 6th TWSC
5: S Pine Street & E Polk Street

02/06/2023

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	2	0	32	0	24	0	232	8	77	260	0
Future Vol, veh/h	1	2	0	32	0	24	0	232	8	77	260	0
Conflicting Peds, #/hr	5	0	0	0	0	5	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	2	2	2	9	9	9	5	5	5
Mvmt Flow	1	2	0	36	0	27	0	261	9	87	292	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	753	739	295	733	735	271	295	0	0	270	0	0
Stage 1	469	469	-	266	266	-	-	-	-	-	-	-
Stage 2	284	270	-	467	469	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.12	6.52	6.22	4.19	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.518	4.018	3.318	2.281	-	-	2.245	-	-
Pot Cap-1 Maneuver	329	347	749	336	347	768	1227	-	-	1276	-	-
Stage 1	579	564	-	739	689	-	-	-	-	-	-	-
Stage 2	727	690	-	576	561	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	295	318	747	313	318	764	1223	-	-	1276	-	-
Mov Cap-2 Maneuver	295	318	-	313	318	-	-	-	-	-	-	-
Stage 1	577	517	-	739	689	-	-	-	-	-	-	-
Stage 2	698	690	-	527	514	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	16.7		15.1		0		1.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1223	-	-	310	419	1276	-	-
HCM Lane V/C Ratio	-	-	-	0.011	0.15	0.068	-	-
HCM Control Delay (s)	0	-	-	16.7	15.1	8	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0.2	-	-

HCM 6th AWSC

6: S 3rd Street & E Polk Street

02/06/2023

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	69	9	4	0	6	4	0	1	0	4	1	20
Future Vol, veh/h	69	9	4	0	6	4	0	1	0	4	1	20
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles, %	11	11	11	90	90	90	100	100	100	4	4	4
Mvmt Flow	125	16	7	0	11	7	0	2	0	7	2	36
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	8.6	9.1	7.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	84%	0%	16%
Vol Thru, %	100%	11%	60%	4%
Vol Right, %	0%	5%	40%	80%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	82	10	25
LT Vol	0	69	0	4
Through Vol	1	9	6	1
RT Vol	0	4	4	20
Lane Flow Rate	2	149	18	45
Geometry Grp	1	1	1	1
Degree of Util (X)	0.003	0.179	0.027	0.05
Departure Headway (Hd)	6.052	4.322	5.388	3.922
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	595	829	661	919
Service Time	4.054	2.353	3.45	1.922
HCM Lane V/C Ratio	0.003	0.18	0.027	0.049
HCM Control Delay	9.1	8.3	8.6	7.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.6	0.1	0.2

HCM 6th TWSC

1: N Yamhill Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	62.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	139	4	166	6	1	16	165	268	3	12	288	184
Future Vol, veh/h	139	4	166	6	1	16	165	268	3	12	288	184
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, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	0	0	0	1	1	1	3	3	3
Mvmt Flow	156	4	187	7	1	18	185	301	3	13	324	207

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1136	1128	428	1222	1230	303	531	0	0	304	0	0
Stage 1	454	454	-	673	673	-	-	-	-	-	-	-
Stage 2	682	674	-	549	557	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.1	6.5	6.2	4.11	-	-	4.13	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.5	4	3.3	2.209	-	-	2.227	-	-
Pot Cap-1 Maneuver	180	205	629	158	179	741	1042	-	-	1251	-	-
Stage 1	588	571	-	448	457	-	-	-	-	-	-	-
Stage 2	441	455	-	524	515	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 144	159	629	90	139	741	1042	-	-	1251	-	-
Mov Cap-2 Maneuver	~ 144	159	-	90	139	-	-	-	-	-	-	-
Stage 1	462	562	-	352	359	-	-	-	-	-	-	-
Stage 2	337	358	-	360	507	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	245.8		21.7		3.5		0.2	
HCM LOS	F		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1042	-	-	246	241	1251	-	-
HCM Lane V/C Ratio	0.178	-	-	1.411	0.107	0.011	-	-
HCM Control Delay (s)	9.2	0	-	245.8	21.7	7.9	0	-
HCM Lane LOS	A	A	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.6	-	-	19.4	0.4	0	-	-

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

HCM 6th TWSC

2: S Pine Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	23.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	4	14	82	6	211	25	253	62	174	261	3
Future Vol, veh/h	6	4	14	82	6	211	25	253	62	174	261	3
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, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	6	6	6	2	2	2	3	3	3	2	2	2
Mvmt Flow	7	5	16	93	7	240	28	288	70	198	297	3

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1198	1109	299	1084	1075	323	300	0	0	358	0	0
Stage 1	695	695	-	379	379	-	-	-	-	-	-	-
Stage 2	503	414	-	705	696	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.12	6.52	6.22	4.13	-	-	4.12	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.518	4.018	3.318	2.227	-	-	2.218	-	-
Pot Cap-1 Maneuver	159	206	731	194	220	718	1255	-	-	1201	-	-
Stage 1	426	438	-	643	615	-	-	-	-	-	-	-
Stage 2	543	586	-	427	443	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	85	161	731	154	172	718	1255	-	-	1201	-	-
Mov Cap-2 Maneuver	85	161	-	154	172	-	-	-	-	-	-	-
Stage 1	414	351	-	625	598	-	-	-	-	-	-	-
Stage 2	348	570	-	331	355	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	24.8		78.5		0.6		3.4	
HCM LOS	C		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1255	-	-	209	347	1201	-	-
HCM Lane V/C Ratio	0.023	-	-	0.13	0.979	0.165	-	-
HCM Control Delay (s)	7.9	0	-	24.8	78.5	8.6	0	-
HCM Lane LOS	A	A	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	10.8	0.6	-	-

HCM 6th TWSC

3: S 3rd Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	208	12	17	297	3	14	4	16	3	4	1
Future Vol, veh/h	3	208	12	17	297	3	14	4	16	3	4	1
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	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, %	1	1	1	1	1	1	4	4	4	0	0	0
Mvmt Flow	3	226	13	18	323	3	15	4	17	3	4	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	326	0	0	241	0	0	604	603	236	611	608	325
Stage 1	-	-	-	-	-	-	241	241	-	361	361	-
Stage 2	-	-	-	-	-	-	363	362	-	250	247	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.14	6.54	6.24	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.536	4.036	3.336	3.5	4	3.3
Pot Cap-1 Maneuver	1239	-	-	1331	-	-	407	410	798	409	413	721
Stage 1	-	-	-	-	-	-	758	702	-	662	629	-
Stage 2	-	-	-	-	-	-	652	622	-	759	706	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1239	-	-	1328	-	-	396	401	796	390	404	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	396	401	-	390	404	-
Stage 1	-	-	-	-	-	-	754	698	-	660	618	-
Stage 2	-	-	-	-	-	-	635	611	-	735	702	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.4			12.5			13.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	520	1239	-	-	1328	-	-	421
HCM Lane V/C Ratio	0.071	0.003	-	-	0.014	-	-	0.021
HCM Control Delay (s)	12.5	7.9	0	-	7.7	0	-	13.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

HCM 6th TWSC

4: S 7th Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	305	11	5	455	28	7	0	3	8	0	19
Future Vol, veh/h	45	305	11	5	455	28	7	0	3	8	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	2	2	2	0	0	0	0	0	0
Mvmt Flow	48	328	12	5	489	30	8	0	3	9	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	519	0	0	340	0	0	954	959	335	947	950	504
Stage 1	-	-	-	-	-	-	430	430	-	514	514	-
Stage 2	-	-	-	-	-	-	524	529	-	433	436	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1037	-	-	1219	-	-	240	259	712	243	262	572
Stage 1	-	-	-	-	-	-	607	587	-	547	539	-
Stage 2	-	-	-	-	-	-	540	530	-	605	583	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1037	-	-	1219	-	-	220	243	711	230	245	572
Mov Cap-2 Maneuver	-	-	-	-	-	-	220	243	-	230	245	-
Stage 1	-	-	-	-	-	-	572	554	-	516	536	-
Stage 2	-	-	-	-	-	-	518	527	-	567	550	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			0.1			18.5			14.8		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	277	1037	-	-	1219	-	-	397
HCM Lane V/C Ratio	0.039	0.047	-	-	0.004	-	-	0.073
HCM Control Delay (s)	18.5	8.6	0	-	8	0	-	14.8
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

HCM 6th TWSC
5: S Pine Street & E Polk Street

02/06/2023

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	0	27	0	10	0	359	7	14	341	3
Future Vol, veh/h	1	1	0	27	0	10	0	359	7	14	341	3
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, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	1	1	1
Mvmt Flow	1	1	0	33	0	12	0	433	8	17	411	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	890	888	413	885	886	437	415	0	0	441	0	0
Stage 1	447	447	-	437	437	-	-	-	-	-	-	-
Stage 2	443	441	-	448	449	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.209	-	-
Pot Cap-1 Maneuver	266	285	643	268	286	624	1133	-	-	1124	-	-
Stage 1	595	577	-	602	583	-	-	-	-	-	-	-
Stage 2	598	580	-	594	576	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	257	279	643	263	280	624	1133	-	-	1124	-	-
Mov Cap-2 Maneuver	257	279	-	263	280	-	-	-	-	-	-	-
Stage 1	595	565	-	602	583	-	-	-	-	-	-	-
Stage 2	586	580	-	581	564	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.6	18.5	0	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1133	-	-	268	312	1124	-	-
HCM Lane V/C Ratio	-	-	-	0.009	0.143	0.015	-	-
HCM Control Delay (s)	0	-	-	18.6	18.5	8.3	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0	-	-

HCM 6th AWSC

6: S 3rd Street & E Polk Street

02/06/2023

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	33	6	0	0	4	6	3	0	0	4	1	19
Future Vol, veh/h	33	6	0	0	4	6	3	0	0	4	1	19
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	42	8	0	0	5	8	4	0	0	5	1	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.4	6.7	7.3	6.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	85%	0%	17%
Vol Thru, %	0%	15%	40%	4%
Vol Right, %	0%	0%	60%	79%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	39	10	24
LT Vol	3	33	0	4
Through Vol	0	6	4	1
RT Vol	0	0	6	19
Lane Flow Rate	4	50	13	31
Geometry Grp	1	1	1	1
Degree of Util (X)	0.005	0.057	0.013	0.03
Departure Headway (Hd)	4.231	4.137	3.636	3.568
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	845	869	985	1001
Service Time	2.263	2.149	1.656	1.599
HCM Lane V/C Ratio	0.005	0.058	0.013	0.031
HCM Control Delay	7.3	7.4	6.7	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0	0.1

HCM 6th AWSC

6: S 3rd Street & E Polk Street

02/06/2023

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	13	1	0	16	0	1	0	0	0	0	10
Future Vol, veh/h	25	13	1	0	16	0	1	0	0	0	0	10
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	30	30	30	73	73	73	0	0	0	0	0	0
Mvmt Flow	35	18	1	0	22	0	1	0	0	0	0	14
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	8.4	7.3	6.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	64%	0%	0%
Vol Thru, %	0%	33%	100%	0%
Vol Right, %	0%	3%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	39	16	10
LT Vol	1	25	0	0
Through Vol	0	13	16	0
RT Vol	0	1	0	10
Lane Flow Rate	1	54	22	14
Geometry Grp	1	1	1	1
Degree of Util (X)	0.002	0.069	0.032	0.013
Departure Headway (Hd)	4.243	4.565	5.207	3.433
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	836	787	689	1030
Service Time	2.308	2.579	3.229	1.497
HCM Lane V/C Ratio	0.001	0.069	0.032	0.014
HCM Control Delay	7.3	7.9	8.4	6.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0.1	0

HCM 6th AWSC

1: N Yamhill Street & E Main Street

02/06/2023

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	100	108	8	7	87	56	1	8	4	54	9	75
Future Vol, veh/h	100	108	8	7	87	56	1	8	4	54	9	75
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	12	12	12	12	12	12	18	18	18	9	9	9
Mvmt Flow	120	130	10	8	105	67	1	10	5	65	11	90
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.5	9.1	8.5	9.3
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	46%	5%	39%
Vol Thru, %	62%	50%	58%	7%
Vol Right, %	31%	4%	37%	54%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	216	150	138
LT Vol	1	100	7	54
Through Vol	8	108	87	9
RT Vol	4	8	56	75
Lane Flow Rate	16	260	181	166
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.35	0.234	0.225
Departure Headway (Hd)	5.321	4.836	4.655	4.869
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	668	742	768	735
Service Time	3.389	2.88	2.703	2.919
HCM Lane V/C Ratio	0.024	0.35	0.236	0.226
HCM Control Delay	8.5	10.5	9.1	9.3
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.1	1.6	0.9	0.9

HCM 6th Signalized Intersection Summary
2: S Pine Street & E Main Street

02/06/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	1	24	135	44	87	87	45	147	27	81	150	3
Future Volume (veh/h)	1	24	135	44	87	87	45	147	27	81	150	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1668	1668	1668	1668	1668	1545	1545	1545	1600	1600	1600
Adj Flow Rate, veh/h	1	32	57	58	114	68	59	193	25	107	197	4
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	6	6	6	6	6	6	15	15	15	11	11	11
Cap, veh/h	155	166	290	262	260	132	252	401	47	336	381	7
Arrive On Green	0.29	0.31	0.29	0.29	0.31	0.29	0.33	0.35	0.33	0.33	0.35	0.33
Sat Flow, veh/h	5	540	943	238	844	428	190	1132	131	370	1074	19
Grp Volume(v), veh/h	90	0	0	240	0	0	277	0	0	308	0	0
Grp Sat Flow(s),veh/h/ln1488		0	0	1510	0	0	1452	0	0	1463	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	3.1	0.0	0.0	3.5	0.0	0.0	3.8	0.0	0.0
Prop In Lane	0.01		0.63	0.24		0.28	0.21		0.09	0.35		0.01
Lane Grp Cap(c), veh/h	580	0	0	621	0	0	669	0	0	693	0	0
V/C Ratio(X)	0.16	0.00	0.00	0.39	0.00	0.00	0.41	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	1688	0	0	1722	0	0	1756	0	0	1765	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.2	0.0	0.0	6.8	0.0	0.0	6.1	0.0	0.0	6.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.2	0.0	0.0	0.0	0.7	0.0	0.0	0.7	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	0.0	0.0	7.2	0.0	0.0	6.5	0.0	0.0	6.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		90			240			277			308	
Approach Delay, s/veh		6.3			7.2			6.5			6.7	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.3		12.4		11.3		12.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		24.5		26.5		24.5		26.5				
Max Q Clear Time (g_c+I1), s		3.1		5.5		5.1		5.8				
Green Ext Time (p_c), s		0.4		1.8		1.4		2.0				
Intersection Summary												
HCM 6th Ctrl Delay				6.7								
HCM 6th LOS				A								

HCM 6th TWSC

3: S 3rd Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	108	25	32	156	3	60	23	22	9	9	3
Future Vol, veh/h	0	108	25	32	156	3	60	23	22	9	9	3
Conflicting Peds, #/hr	3	0	9	9	0	3	15	0	0	0	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	4	4	4	8	8	8	2	2	2	11	11	11
Mvmt Flow	0	148	34	44	214	4	82	32	30	12	12	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	221	0	0	191	0	0	501	483	174	503	498	234
Stage 1	-	-	-	-	-	-	174	174	-	307	307	-
Stage 2	-	-	-	-	-	-	327	309	-	196	191	-
Critical Hdwy	4.14	-	-	4.18	-	-	7.12	6.52	6.22	7.21	6.61	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.21	5.61	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.21	5.61	-
Follow-up Hdwy	2.236	-	-	2.272	-	-	3.518	4.018	3.318	3.599	4.099	3.399
Pot Cap-1 Maneuver	1336	-	-	1347	-	-	480	483	869	465	461	783
Stage 1	-	-	-	-	-	-	828	755	-	684	645	-
Stage 2	-	-	-	-	-	-	686	660	-	785	726	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1332	-	-	1335	-	-	444	459	862	412	438	770
Mov Cap-2 Maneuver	-	-	-	-	-	-	444	459	-	412	438	-
Stage 1	-	-	-	-	-	-	821	748	-	682	619	-
Stage 2	-	-	-	-	-	-	634	633	-	726	719	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.3	15.1	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	498	1332	-	-	1335	-	-	454
HCM Lane V/C Ratio	0.289	-	-	-	0.033	-	-	0.063
HCM Control Delay (s)	15.1	0	-	-	7.8	0	-	13.5
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	1.2	0	-	-	0.1	-	-	0.2

HCM 6th TWSC

4: S 7th Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	372	12	5	232	2	37	0	16	27	0	40
Future Vol, veh/h	11	372	12	5	232	2	37	0	16	27	0	40
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3	0	0	0	2	2	2
Mvmt Flow	12	413	13	6	258	2	41	0	18	30	0	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	261	0	0	426	0	0	737	717	420	725	722	260
Stage 1	-	-	-	-	-	-	444	444	-	272	272	-
Stage 2	-	-	-	-	-	-	293	273	-	453	450	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1298	-	-	1128	-	-	337	358	638	340	353	779
Stage 1	-	-	-	-	-	-	597	579	-	734	685	-
Stage 2	-	-	-	-	-	-	719	688	-	586	572	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1297	-	-	1128	-	-	313	351	638	326	346	778
Mov Cap-2 Maneuver	-	-	-	-	-	-	313	351	-	326	346	-
Stage 1	-	-	-	-	-	-	590	572	-	724	680	-
Stage 2	-	-	-	-	-	-	674	683	-	563	565	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.2			16.6			13.5		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	370	1297	-	-	1128	-	-	499
HCM Lane V/C Ratio	0.159	0.009	-	-	0.005	-	-	0.149
HCM Control Delay (s)	16.6	7.8	0	-	8.2	0	-	13.5
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.5

HCM 6th TWSC
5: S Pine Street & E Polk Street

02/06/2023

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	2	0	41	0	26	0	237	10	83	266	0
Future Vol, veh/h	1	2	0	41	0	26	0	237	10	83	266	0
Conflicting Peds, #/hr	5	0	0	0	0	5	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	2	2	2	9	9	9	5	5	5
Mvmt Flow	1	2	0	46	0	29	0	266	11	93	299	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	779	765	302	758	760	277	302	0	0	277	0	0
Stage 1	488	488	-	272	272	-	-	-	-	-	-	-
Stage 2	291	277	-	486	488	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.12	6.52	6.22	4.19	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.518	4.018	3.318	2.281	-	-	2.245	-	-
Pot Cap-1 Maneuver	316	336	742	324	336	762	1220	-	-	1269	-	-
Stage 1	565	553	-	734	685	-	-	-	-	-	-	-
Stage 2	721	685	-	563	550	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	281	305	740	301	305	758	1217	-	-	1269	-	-
Mov Cap-2 Maneuver	281	305	-	301	305	-	-	-	-	-	-	-
Stage 1	563	503	-	734	685	-	-	-	-	-	-	-
Stage 2	690	685	-	511	500	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.3		16.3		0		1.9	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1217	-	-	297	393	1269	-	-
HCM Lane V/C Ratio	-	-	-	0.011	0.192	0.073	-	-
HCM Control Delay (s)	0	-	-	17.3	16.3	8.1	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0.2	-	-

HCM 6th AWSC

6: S 3rd Street & E Polk Street

02/06/2023

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	76	10	4	0	6	4	0	1	0	4	1	28
Future Vol, veh/h	76	10	4	0	6	4	0	1	0	4	1	28
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles, %	11	11	11	90	90	90	100	100	100	4	4	4
Mvmt Flow	138	18	7	0	11	7	0	2	0	7	2	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	8.7	9.1	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	84%	0%	12%
Vol Thru, %	100%	11%	60%	3%
Vol Right, %	0%	4%	40%	85%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	90	10	33
LT Vol	0	76	0	4
Through Vol	1	10	6	1
RT Vol	0	4	4	28
Lane Flow Rate	2	164	18	60
Geometry Grp	1	1	1	1
Degree of Util (X)	0.003	0.198	0.027	0.065
Departure Headway (Hd)	6.104	4.351	5.425	3.922
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	590	823	655	919
Service Time	4.106	2.386	3.498	1.922
HCM Lane V/C Ratio	0.003	0.199	0.027	0.065
HCM Control Delay	9.1	8.5	8.7	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.7	0.1	0.2

HCM 6th AWSC

1: N Yamhill Street & E Main Street

02/06/2023

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	150	187	4	5	183	57	1	17	8	62	13	199
Future Vol, veh/h	150	187	4	5	183	57	1	17	8	62	13	199
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	3	3	3
Mvmt Flow	169	210	4	6	206	64	1	19	9	70	15	224
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.4	12	9.5	12.8
HCM LOS	C	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %		4%	44%	2%	23%
Vol Thru, %		65%	55%	75%	5%
Vol Right, %		31%	1%	23%	73%
Sign Control		Stop	Stop	Stop	Stop
Traffic Vol by Lane		26	341	245	274
LT Vol		1	150	5	62
Through Vol		17	187	183	13
RT Vol		8	4	57	199
Lane Flow Rate		29	383	275	308
Geometry Grp		1	1	1	1
Degree of Util (X)		0.049	0.572	0.407	0.456
Departure Headway (Hd)		6.079	5.371	5.323	5.337
Convergence, Y/N		Yes	Yes	Yes	Yes
Cap		585	671	674	674
Service Time		4.153	3.411	3.369	3.385
HCM Lane V/C Ratio		0.05	0.571	0.408	0.457
HCM Control Delay		9.5	15.4	12	12.8
HCM Lane LOS		A	C	B	B
HCM 95th-tile Q		0.2	3.6	2	2.4

HCM 6th Signalized Intersection Summary 2: S Pine Street & E Main Street

02/06/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	3	97	134	89	139	111	137	149	67	123	148	6
Future Volume (veh/h)	3	97	134	89	139	111	137	149	67	123	148	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1723	1723	1723	1709	1709	1709	1668	1668	1668
Adj Flow Rate, veh/h	3	110	71	101	158	96	156	169	61	140	168	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	6	6	6
Cap, veh/h	122	358	227	263	293	150	351	291	90	365	354	11
Arrive On Green	0.35	0.37	0.35	0.35	0.37	0.35	0.35	0.37	0.35	0.35	0.37	0.35
Sat Flow, veh/h	7	974	616	302	797	408	502	786	242	527	955	29
Grp Volume(v), veh/h	184	0	0	355	0	0	386	0	0	314	0	0
Grp Sat Flow(s),veh/h/ln1597	0	0	0	1508	0	0	1530	0	0	1511	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.9	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.5	0.0	0.0	5.9	0.0	0.0	6.2	0.0	0.0	4.7	0.0	0.0
Prop In Lane	0.02		0.39	0.28		0.27	0.40		0.16	0.45		0.02
Lane Grp Cap(c), veh/h	681	0	0	681	0	0	707	0	0	705	0	0
V/C Ratio(X)	0.27	0.00	0.00	0.52	0.00	0.00	0.55	0.00	0.00	0.45	0.00	0.00
Avail Cap(c_a), veh/h	1398	0	0	1340	0	0	1439	0	0	1405	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.0	0.0	0.0	8.0	0.0	0.0	8.1	0.0	0.0	7.6	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.6	0.0	0.0	0.7	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.6	0.0	0.0	0.0	1.4	0.0	0.0	1.6	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.2	0.0	0.0	8.6	0.0	0.0	8.7	0.0	0.0	8.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		184			355			386			314	
Approach Delay, s/veh		7.2			8.6			8.7			8.0	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.2		15.3		15.2		15.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		24.5		26.5		24.5		26.5				
Max Q Clear Time (g_c+I1), s		4.5		8.2		7.9		6.7				
Green Ext Time (p_c), s		1.0		2.5		2.2		2.1				
Intersection Summary												
HCM 6th Ctrl Delay				8.3								
HCM 6th LOS				A								

HCM 6th TWSC

3: S 3rd Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	253	13	18	337	3	15	4	17	3	4	1
Future Vol, veh/h	3	253	13	18	337	3	15	4	17	3	4	1
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	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, %	1	1	1	1	1	1	4	4	4	0	0	0
Mvmt Flow	3	275	14	20	366	3	16	4	18	3	4	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	369	0	0	291	0	0	700	699	285	708	705	368
Stage 1	-	-	-	-	-	-	290	290	-	408	408	-
Stage 2	-	-	-	-	-	-	410	409	-	300	297	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.14	6.54	6.24	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.536	4.036	3.336	3.5	4	3.3
Pot Cap-1 Maneuver	1195	-	-	1276	-	-	351	361	749	352	363	682
Stage 1	-	-	-	-	-	-	713	669	-	624	600	-
Stage 2	-	-	-	-	-	-	615	593	-	713	671	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1195	-	-	1274	-	-	340	352	747	334	354	682
Mov Cap-2 Maneuver	-	-	-	-	-	-	340	352	-	334	354	-
Stage 1	-	-	-	-	-	-	709	666	-	622	588	-
Stage 2	-	-	-	-	-	-	597	581	-	688	668	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.4			13.6			15		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	460	1195	-	-	1274	-	-	368
HCM Lane V/C Ratio	0.085	0.003	-	-	0.015	-	-	0.024
HCM Control Delay (s)	13.6	8	0	-	7.9	0	-	15
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

HCM 6th TWSC
4: S 7th Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	330	40	17	493	30	24	0	10	9	0	21
Future Vol, veh/h	49	330	40	17	493	30	24	0	10	9	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	2	2	2	0	0	0	0	0	0
Mvmt Flow	53	355	43	18	530	32	26	0	11	10	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	562	0	0	398	0	0	1077	1081	378	1071	1086	546
Stage 1	-	-	-	-	-	-	483	483	-	582	582	-
Stage 2	-	-	-	-	-	-	594	598	-	489	504	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	999	-	-	1161	-	-	198	220	673	200	218	541
Stage 1	-	-	-	-	-	-	569	556	-	502	502	-
Stage 2	-	-	-	-	-	-	495	494	-	564	544	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	999	-	-	1161	-	-	177	200	672	183	198	541
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	200	-	183	198	-
Stage 1	-	-	-	-	-	-	530	518	-	467	490	-
Stage 2	-	-	-	-	-	-	463	483	-	516	506	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.3			24			16.7		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	226	999	-	-	1161	-	-	341
HCM Lane V/C Ratio	0.162	0.053	-	-	0.016	-	-	0.095
HCM Control Delay (s)	24	8.8	0	-	8.2	0	-	16.7
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	0.3

HCM 6th TWSC
5: S Pine Street & E Polk Street

02/06/2023

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	0	32	0	11	0	367	14	15	349	3
Future Vol, veh/h	1	1	0	32	0	11	0	367	14	15	349	3
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, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	1	1	1
Mvmt Flow	1	1	0	39	0	13	0	442	17	18	420	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	915	917	422	910	911	451	424	0	0	459	0	0
Stage 1	458	458	-	451	451	-	-	-	-	-	-	-
Stage 2	457	459	-	459	460	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.209	-	-
Pot Cap-1 Maneuver	256	274	636	258	276	613	1125	-	-	1107	-	-
Stage 1	587	570	-	592	574	-	-	-	-	-	-	-
Stage 2	587	570	-	586	569	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	247	268	636	253	270	613	1125	-	-	1107	-	-
Mov Cap-2 Maneuver	247	268	-	253	270	-	-	-	-	-	-	-
Stage 1	587	558	-	592	574	-	-	-	-	-	-	-
Stage 2	574	570	-	572	557	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.1		19.6		0		0.3	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1125	-	-	257	298	1107	-	-
HCM Lane V/C Ratio	-	-	-	0.009	0.174	0.016	-	-
HCM Control Delay (s)	0	-	-	19.1	19.6	8.3	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0.1	-	-

HCM 6th AWSC
6: S 3rd Street & E Polk Street

02/06/2023

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	42	6	0	0	4	6	3	0	0	4	1	24
Future Vol, veh/h	42	6	0	0	4	6	3	0	0	4	1	24
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	54	8	0	0	5	8	4	0	0	5	1	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	6.7	7.3	6.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	88%	0%	14%
Vol Thru, %	0%	12%	40%	3%
Vol Right, %	0%	0%	60%	83%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	48	10	29
LT Vol	3	42	0	4
Through Vol	0	6	4	1
RT Vol	0	0	6	24
Lane Flow Rate	4	62	13	37
Geometry Grp	1	1	1	1
Degree of Util (X)	0.005	0.071	0.013	0.037
Departure Headway (Hd)	4.258	4.155	3.657	3.562
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	838	865	978	1001
Service Time	2.297	2.168	1.682	1.599
HCM Lane V/C Ratio	0.005	0.072	0.013	0.037
HCM Control Delay	7.3	7.5	6.7	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0	0.1

HCM 6th AWSC

6: S 3rd Street & E Polk Street

02/06/2023

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	33	14	1	0	17	0	1	0	0	0	0	14
Future Vol, veh/h	33	14	1	0	17	0	1	0	0	0	0	14
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	30	30	30	73	73	73	0	0	0	0	0	0
Mvmt Flow	46	19	1	0	24	0	1	0	0	0	0	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	8.4	7.4	6.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	69%	0%	0%
Vol Thru, %	0%	29%	100%	0%
Vol Right, %	0%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	48	17	14
LT Vol	1	33	0	0
Through Vol	0	14	17	0
RT Vol	0	1	0	14
Lane Flow Rate	1	67	24	19
Geometry Grp	1	1	1	1
Degree of Util (X)	0.002	0.085	0.034	0.019
Departure Headway (Hd)	4.271	4.588	5.227	3.456
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	828	783	685	1019
Service Time	2.349	2.605	3.255	1.532
HCM Lane V/C Ratio	0.001	0.086	0.035	0.019
HCM Control Delay	7.4	8	8.4	6.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.3	0.1	0.1

HCM 6th AWSC

1: N Yamhill Street & E Main Street

02/06/2023

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	100	109	8	7	90	56	1	8	4	54	9	75
Future Vol, veh/h	100	109	8	7	90	56	1	8	4	54	9	75
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	12	12	12	12	12	12	18	18	18	9	9	9
Mvmt Flow	120	131	10	8	108	67	1	10	5	65	11	90
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.5	9.2	8.5	9.4
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	46%	5%	39%
Vol Thru, %	62%	50%	59%	7%
Vol Right, %	31%	4%	37%	54%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	217	153	138
LT Vol	1	100	7	54
Through Vol	8	109	90	9
RT Vol	4	8	56	75
Lane Flow Rate	16	261	184	166
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.352	0.239	0.225
Departure Headway (Hd)	5.332	4.841	4.663	4.88
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	667	740	767	733
Service Time	3.402	2.884	2.709	2.931
HCM Lane V/C Ratio	0.024	0.353	0.24	0.226
HCM Control Delay	8.5	10.5	9.2	9.4
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.1	1.6	0.9	0.9

HCM 6th Signalized Intersection Summary 2: S Pine Street & E Main Street

02/06/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	1	24	136	44	88	89	47	151	27	82	152	3
Future Volume (veh/h)	1	24	136	44	88	89	47	151	27	82	152	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1668	1668	1668	1668	1668	1545	1545	1545	1600	1600	1600
Adj Flow Rate, veh/h	1	32	58	58	116	70	62	199	27	108	200	4
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	6	6	6	6	6	6	15	15	15	11	11	11
Cap, veh/h	154	165	293	259	261	134	252	399	48	334	383	7
Arrive On Green	0.29	0.31	0.29	0.29	0.31	0.29	0.34	0.36	0.34	0.34	0.36	0.34
Sat Flow, veh/h	5	534	948	233	844	433	194	1121	136	370	1076	19
Grp Volume(v), veh/h	91	0	0	244	0	0	288	0	0	312	0	0
Grp Sat Flow(s),veh/h/ln1487	0	0	0	1510	0	0	1451	0	0	1465	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	3.1	0.0	0.0	3.7	0.0	0.0	3.9	0.0	0.0
Prop In Lane	0.01		0.64	0.24		0.29	0.22		0.09	0.35		0.01
Lane Grp Cap(c), veh/h	581	0	0	622	0	0	669	0	0	694	0	0
V/C Ratio(X)	0.16	0.00	0.00	0.39	0.00	0.00	0.43	0.00	0.00	0.45	0.00	0.00
Avail Cap(c_a), veh/h	1673	0	0	1707	0	0	1739	0	0	1748	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.2	0.0	0.0	6.9	0.0	0.0	6.2	0.0	0.0	6.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.2	0.0	0.0	0.0	0.7	0.0	0.0	0.7	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	0.0	0.0	7.3	0.0	0.0	6.6	0.0	0.0	6.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		91			244			288			312	
Approach Delay, s/veh		6.3			7.3			6.6			6.7	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.4		12.5		11.4		12.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		24.5		26.5		24.5		26.5				
Max Q Clear Time (g_c+I1), s		3.1		5.7		5.1		5.9				
Green Ext Time (p_c), s		0.5		1.8		1.5		2.0				
Intersection Summary												
HCM 6th Ctrl Delay				6.8								
HCM 6th LOS				A								

HCM 6th TWSC
3: S 3rd Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	108	26	34	156	3	63	23	26	9	9	3
Future Vol, veh/h	0	108	26	34	156	3	63	23	26	9	9	3
Conflicting Peds, #/hr	3	0	9	9	0	3	15	0	0	0	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	4	4	4	8	8	8	2	2	2	11	11	11
Mvmt Flow	0	148	36	47	214	4	86	32	36	12	12	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	221	0	0	193	0	0	508	490	175	513	506	234
Stage 1	-	-	-	-	-	-	175	175	-	313	313	-
Stage 2	-	-	-	-	-	-	333	315	-	200	193	-
Critical Hdwy	4.14	-	-	4.18	-	-	7.12	6.52	6.22	7.21	6.61	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.21	5.61	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.21	5.61	-
Follow-up Hdwy	2.236	-	-	2.272	-	-	3.518	4.018	3.318	3.599	4.099	3.399
Pot Cap-1 Maneuver	1336	-	-	1345	-	-	475	479	868	458	456	783
Stage 1	-	-	-	-	-	-	827	754	-	679	641	-
Stage 2	-	-	-	-	-	-	681	656	-	782	724	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1332	-	-	1333	-	-	438	455	861	402	433	770
Mov Cap-2 Maneuver	-	-	-	-	-	-	438	455	-	402	433	-
Stage 1	-	-	-	-	-	-	820	747	-	677	613	-
Stage 2	-	-	-	-	-	-	628	628	-	718	717	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.4	15.4	13.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	499	1332	-	-	1333	-	-	446
HCM Lane V/C Ratio	0.307	-	-	-	0.035	-	-	0.065
HCM Control Delay (s)	15.4	0	-	-	7.8	0	-	13.6
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	1.3	0	-	-	0.1	-	-	0.2

HCM 6th TWSC

4: S 7th Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	376	12	5	234	2	37	0	16	27	0	40
Future Vol, veh/h	11	376	12	5	234	2	37	0	16	27	0	40
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3	0	0	0	2	2	2
Mvmt Flow	12	418	13	6	260	2	41	0	18	30	0	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	263	0	0	431	0	0	744	724	425	732	729	262
Stage 1	-	-	-	-	-	-	449	449	-	274	274	-
Stage 2	-	-	-	-	-	-	295	275	-	458	455	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1295	-	-	1123	-	-	333	354	634	337	350	777
Stage 1	-	-	-	-	-	-	593	576	-	732	683	-
Stage 2	-	-	-	-	-	-	718	686	-	583	569	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1294	-	-	1123	-	-	310	347	634	323	343	776
Mov Cap-2 Maneuver	-	-	-	-	-	-	310	347	-	323	343	-
Stage 1	-	-	-	-	-	-	586	569	-	722	678	-
Stage 2	-	-	-	-	-	-	673	681	-	560	562	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.2			16.7			13.5		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	367	1294	-	-	1123	-	-	496
HCM Lane V/C Ratio	0.16	0.009	-	-	0.005	-	-	0.15
HCM Control Delay (s)	16.7	7.8	0	-	8.2	0	-	13.5
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.5

HCM 6th TWSC
5: S Pine Street & E Polk Street

02/06/2023

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	2	0	44	0	33	0	237	11	86	266	0
Future Vol, veh/h	1	2	0	44	0	33	0	237	11	86	266	0
Conflicting Peds, #/hr	5	0	0	0	0	5	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	2	2	2	9	9	9	5	5	5
Mvmt Flow	1	2	0	49	0	37	0	266	12	97	299	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	792	774	302	766	768	277	302	0	0	278	0	0
Stage 1	496	496	-	272	272	-	-	-	-	-	-	-
Stage 2	296	278	-	494	496	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.12	6.52	6.22	4.19	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.518	4.018	3.318	2.281	-	-	2.245	-	-
Pot Cap-1 Maneuver	309	332	742	320	332	762	1220	-	-	1268	-	-
Stage 1	559	549	-	734	685	-	-	-	-	-	-	-
Stage 2	717	684	-	557	545	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	271	300	740	296	300	758	1217	-	-	1268	-	-
Mov Cap-2 Maneuver	271	300	-	296	300	-	-	-	-	-	-	-
Stage 1	557	497	-	734	685	-	-	-	-	-	-	-
Stage 2	679	684	-	503	493	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.6	16.4	0	2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1217	-	-	290	401	1268	-	-
HCM Lane V/C Ratio	-	-	-	0.012	0.216	0.076	-	-
HCM Control Delay (s)	0	-	-	17.6	16.4	8.1	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.8	0.2	-	-

HCM 6th AWSC

6: S 3rd Street & E Polk Street

02/06/2023

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	81	10	5	0	6	4	3	3	0	4	2	30
Future Vol, veh/h	81	10	5	0	6	4	3	3	0	4	2	30
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles, %	11	11	11	90	90	90	100	100	100	4	4	4
Mvmt Flow	147	18	9	0	11	7	5	5	0	7	4	55
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.6	8.7	9.4	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	84%	0%	11%
Vol Thru, %	50%	10%	60%	6%
Vol Right, %	0%	5%	40%	83%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	6	96	10	36
LT Vol	3	81	0	4
Through Vol	3	10	6	2
RT Vol	0	5	4	30
Lane Flow Rate	11	175	18	65
Geometry Grp	1	1	1	1
Degree of Util (X)	0.019	0.212	0.028	0.072
Departure Headway (Hd)	6.241	4.372	5.46	3.972
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	577	815	648	907
Service Time	4.243	2.427	3.557	1.973
HCM Lane V/C Ratio	0.019	0.215	0.028	0.072
HCM Control Delay	9.4	8.6	8.7	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.8	0.1	0.2

HCM 6th AWSC

1: N Yamhill Street & E Main Street

02/06/2023

Intersection	
Intersection Delay, s/veh	13.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	150	190	4	5	185	57	1	17	8	62	13	199
Future Vol, veh/h	150	190	4	5	185	57	1	17	8	62	13	199
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	3	3	3
Mvmt Flow	169	213	4	6	208	64	1	19	9	70	15	224
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.5	12.1	9.5	12.9
HCM LOS	C	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %		4%	44%	2%	23%
Vol Thru, %		65%	55%	75%	5%
Vol Right, %		31%	1%	23%	73%
Sign Control		Stop	Stop	Stop	Stop
Traffic Vol by Lane		26	344	247	274
LT Vol		1	150	5	62
Through Vol		17	190	185	13
RT Vol		8	4	57	199
Lane Flow Rate		29	387	278	308
Geometry Grp		1	1	1	1
Degree of Util (X)		0.05	0.577	0.411	0.458
Departure Headway (Hd)		6.101	5.376	5.333	5.354
Convergence, Y/N		Yes	Yes	Yes	Yes
Cap		583	669	674	671
Service Time		4.175	3.421	3.382	3.402
HCM Lane V/C Ratio		0.05	0.578	0.412	0.459
HCM Control Delay		9.5	15.5	12.1	12.9
HCM Lane LOS		A	C	B	B
HCM 95th-tile Q		0.2	3.7	2	2.4

HCM 6th Signalized Intersection Summary

2: S Pine Street & E Main Street

02/06/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	3	98	136	89	140	112	138	152	67	125	154	6
Future Volume (veh/h)	3	98	136	89	140	112	138	152	67	125	154	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1723	1723	1723	1709	1709	1709	1668	1668	1668
Adj Flow Rate, veh/h	3	111	73	101	159	97	157	173	62	142	175	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	6	6	6
Cap, veh/h	121	356	229	260	293	151	349	295	90	361	357	10
Arrive On Green	0.35	0.37	0.35	0.35	0.37	0.35	0.36	0.37	0.36	0.36	0.37	0.36
Sat Flow, veh/h	7	966	623	301	797	409	499	791	242	519	959	28
Grp Volume(v), veh/h	187	0	0	357	0	0	392	0	0	323	0	0
Grp Sat Flow(s),veh/h/ln	1596	0	0	1507	0	0	1532	0	0	1505	0	0
Q Serve(g_s), s	0.0	0.0	0.0	3.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.6	0.0	0.0	6.0	0.0	0.0	6.3	0.0	0.0	4.9	0.0	0.0
Prop In Lane	0.02		0.39	0.28		0.27	0.40		0.16	0.44		0.02
Lane Grp Cap(c), veh/h	680	0	0	680	0	0	710	0	0	705	0	0
V/C Ratio(X)	0.27	0.00	0.00	0.53	0.00	0.00	0.55	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	1383	0	0	1326	0	0	1425	0	0	1390	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.1	0.0	0.0	8.1	0.0	0.0	8.1	0.0	0.0	7.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.6	0.0	0.0	0.7	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	1.4	0.0	0.0	1.6	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	0.0	0.0	8.7	0.0	0.0	8.8	0.0	0.0	8.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		187			357			392			323	
Approach Delay, s/veh		7.3			8.7			8.8			8.1	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.3		15.5		15.3		15.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		24.5		26.5		24.5		26.5				
Max Q Clear Time (g_c+I1), s		4.6		8.3		8.0		6.9				
Green Ext Time (p_c), s		1.1		2.6		2.2		2.1				
Intersection Summary												
HCM 6th Ctrl Delay				8.4								
HCM 6th LOS				A								

HCM 6th TWSC
3: S 3rd Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	253	16	23	337	3	17	4	20	3	4	1
Future Vol, veh/h	3	253	16	23	337	3	17	4	20	3	4	1
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	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, %	1	1	1	1	1	1	4	4	4	0	0	0
Mvmt Flow	3	275	17	25	366	3	18	4	22	3	4	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	369	0	0	294	0	0	712	711	287	722	718	368
Stage 1	-	-	-	-	-	-	292	292	-	418	418	-
Stage 2	-	-	-	-	-	-	420	419	-	304	300	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.14	6.54	6.24	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.536	4.036	3.336	3.5	4	3.3
Pot Cap-1 Maneuver	1195	-	-	1273	-	-	345	356	747	345	357	682
Stage 1	-	-	-	-	-	-	712	667	-	616	594	-
Stage 2	-	-	-	-	-	-	607	587	-	710	669	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1195	-	-	1271	-	-	333	345	745	324	346	682
Mov Cap-2 Maneuver	-	-	-	-	-	-	333	345	-	324	346	-
Stage 1	-	-	-	-	-	-	708	664	-	614	579	-
Stage 2	-	-	-	-	-	-	586	572	-	682	666	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.5			13.7			15.3		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	458	1195	-	-	1271	-	-	359
HCM Lane V/C Ratio	0.097	0.003	-	-	0.02	-	-	0.024
HCM Control Delay (s)	13.7	8	0	-	7.9	0	-	15.3
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.1

HCM 6th TWSC

4: S 7th Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	333	40	17	498	30	24	0	10	9	0	21
Future Vol, veh/h	49	333	40	17	498	30	24	0	10	9	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	2	2	2	0	0	0	0	0	0
Mvmt Flow	53	358	43	18	535	32	26	0	11	10	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	567	0	0	401	0	0	1085	1089	381	1079	1094	551
Stage 1	-	-	-	-	-	-	486	486	-	587	587	-
Stage 2	-	-	-	-	-	-	599	603	-	492	507	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	995	-	-	1158	-	-	196	217	671	198	216	538
Stage 1	-	-	-	-	-	-	566	554	-	499	500	-
Stage 2	-	-	-	-	-	-	492	492	-	562	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	995	-	-	1158	-	-	175	197	670	181	197	538
Mov Cap-2 Maneuver	-	-	-	-	-	-	175	197	-	181	197	-
Stage 1	-	-	-	-	-	-	527	516	-	465	489	-
Stage 2	-	-	-	-	-	-	461	481	-	514	506	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.3			24.2			16.8		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	224	995	-	-	1158	-	-	338
HCM Lane V/C Ratio	0.163	0.053	-	-	0.016	-	-	0.095
HCM Control Delay (s)	24.2	8.8	0	-	8.2	0	-	16.8
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	0.3

HCM 6th TWSC
5: S Pine Street & E Polk Street

02/06/2023

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	0	34	0	16	0	367	17	23	349	3
Future Vol, veh/h	1	1	0	34	0	16	0	367	17	23	349	3
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, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	1	1	1
Mvmt Flow	1	1	0	41	0	19	0	442	20	28	420	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	940	940	422	931	932	452	424	0	0	462	0	0
Stage 1	478	478	-	452	452	-	-	-	-	-	-	-
Stage 2	462	462	-	479	480	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.209	-	-
Pot Cap-1 Maneuver	246	266	636	249	269	612	1125	-	-	1104	-	-
Stage 1	572	559	-	591	574	-	-	-	-	-	-	-
Stage 2	584	568	-	571	558	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	232	257	636	242	260	612	1125	-	-	1104	-	-
Mov Cap-2 Maneuver	232	257	-	242	260	-	-	-	-	-	-	-
Stage 1	572	541	-	591	574	-	-	-	-	-	-	-
Stage 2	566	568	-	551	540	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.9	20	0	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1125	-	-	244	300	1104	-	-
HCM Lane V/C Ratio	-	-	-	0.01	0.201	0.025	-	-
HCM Control Delay (s)	0	-	-	19.9	20	8.3	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0.1	-	-

HCM 6th AWSC

6: S 3rd Street & E Polk Street

02/06/2023

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	6	4	0	4	6	5	2	0	4	3	30
Future Vol, veh/h	45	6	4	0	4	6	5	2	0	4	3	30
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	58	8	5	0	5	8	6	3	0	5	4	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	6.8	7.3	6.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	71%	82%	0%	11%
Vol Thru, %	29%	11%	40%	8%
Vol Right, %	0%	7%	60%	81%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	7	55	10	37
LT Vol	5	45	0	4
Through Vol	2	6	4	3
RT Vol	0	4	6	30
Lane Flow Rate	9	71	13	47
Geometry Grp	1	1	1	1
Degree of Util (X)	0.011	0.081	0.013	0.047
Departure Headway (Hd)	4.224	4.127	3.691	3.586
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	844	869	967	993
Service Time	2.268	2.145	1.722	1.627
HCM Lane V/C Ratio	0.011	0.082	0.013	0.047
HCM Control Delay	7.3	7.5	6.8	6.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.3	0	0.1

HCM 6th AWSC

6: S 3rd Street & E Polk Street

02/06/2023

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	36	14	5	0	17	0	3	2	0	0	2	20
Future Vol, veh/h	36	14	5	0	17	0	3	2	0	0	2	20
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	30	30	30	73	73	73	0	0	0	0	0	0
Mvmt Flow	50	19	7	0	24	0	4	3	0	0	3	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8.5	7.3	6.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	60%	65%	0%	0%
Vol Thru, %	40%	25%	100%	9%
Vol Right, %	0%	9%	0%	91%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	55	17	22
LT Vol	3	36	0	0
Through Vol	2	14	17	2
RT Vol	0	5	0	20
Lane Flow Rate	7	76	24	31
Geometry Grp	1	1	1	1
Degree of Util (X)	0.008	0.097	0.035	0.03
Departure Headway (Hd)	4.217	4.569	5.265	3.532
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	837	785	680	996
Service Time	2.303	2.591	3.3	1.617
HCM Lane V/C Ratio	0.008	0.097	0.035	0.031
HCM Control Delay	7.3	8.1	8.5	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.3	0.1	0.1

HCM 6th AWSC

1: N Yamhill Street & E Main Street

02/06/2023

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	100	112	8	7	96	56	1	8	4	54	9	75
Future Vol, veh/h	100	112	8	7	96	56	1	8	4	54	9	75
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	12	12	12	12	12	12	18	18	18	9	9	9
Mvmt Flow	120	135	10	8	116	67	1	10	5	65	11	90
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.6	9.3	8.6	9.4
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	45%	4%	39%
Vol Thru, %	62%	51%	60%	7%
Vol Right, %	31%	4%	35%	54%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	220	159	138
LT Vol	1	100	7	54
Through Vol	8	112	96	9
RT Vol	4	8	56	75
Lane Flow Rate	16	265	192	166
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.357	0.249	0.227
Departure Headway (Hd)	5.362	4.852	4.678	4.907
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	663	740	764	728
Service Time	3.433	2.897	2.726	2.958
HCM Lane V/C Ratio	0.024	0.358	0.251	0.228
HCM Control Delay	8.6	10.6	9.3	9.4
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.1	1.6	1	0.9

HCM 6th Signalized Intersection Summary 2: S Pine Street & E Main Street

02/06/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	1	26	137	44	92	98	49	160	27	85	156	3
Future Volume (veh/h)	1	26	137	44	92	98	49	160	27	85	156	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1668	1668	1668	1668	1668	1545	1545	1545	1600	1600	1600
Adj Flow Rate, veh/h	1	34	62	58	121	79	64	211	27	112	205	3
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	6	6	6	6	6	6	15	15	15	11	11	11
Cap, veh/h	150	169	302	249	264	147	246	403	46	333	383	5
Arrive On Green	0.30	0.32	0.30	0.30	0.32	0.30	0.34	0.36	0.34	0.34	0.36	0.34
Sat Flow, veh/h	5	532	951	217	830	462	193	1131	130	378	1074	14
Grp Volume(v), veh/h	97	0	0	258	0	0	302	0	0	320	0	0
Grp Sat Flow(s),veh/h/ln1487	0	0	0	1509	0	0	1454	0	0	1466	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	1.2	0.0	0.0	3.4	0.0	0.0	4.0	0.0	0.0	4.1	0.0	0.0
Prop In Lane	0.01		0.64	0.22		0.31	0.21		0.09	0.35		0.01
Lane Grp Cap(c), veh/h	591	0	0	628	0	0	666	0	0	691	0	0
V/C Ratio(X)	0.16	0.00	0.00	0.41	0.00	0.00	0.45	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	1689	0	0	1720	0	0	1639	0	0	1643	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.2	0.0	0.0	7.0	0.0	0.0	6.4	0.0	0.0	6.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.4	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.2	0.0	0.0	0.0	0.7	0.0	0.0	0.8	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.4	0.0	0.0	7.4	0.0	0.0	6.9	0.0	0.0	7.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		97			258			302			320	
Approach Delay, s/veh		6.4			7.4			6.9			7.0	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.8		12.7		11.8		12.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		25.5		25.5		25.5		25.5				
Max Q Clear Time (g_c+I1), s		3.2		6.0		5.4		6.1				
Green Ext Time (p_c), s		0.5		1.9		1.6		2.1				
Intersection Summary												
HCM 6th Ctrl Delay				7.0								
HCM 6th LOS				A								

HCM 6th TWSC

3: S 3rd Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	109	30	36	158	3	74	23	31	9	9	3
Future Vol, veh/h	0	109	30	36	158	3	74	23	31	9	9	3
Conflicting Peds, #/hr	3	0	9	9	0	3	15	0	0	0	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	4	4	4	8	8	8	2	2	2	11	11	11
Mvmt Flow	0	149	41	49	216	4	101	32	42	12	12	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	223	0	0	199	0	0	518	500	179	526	518	236
Stage 1	-	-	-	-	-	-	179	179	-	319	319	-
Stage 2	-	-	-	-	-	-	339	321	-	207	199	-
Critical Hdwy	4.14	-	-	4.18	-	-	7.12	6.52	6.22	7.21	6.61	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.21	5.61	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.21	5.61	-
Follow-up Hdwy	2.236	-	-	2.272	-	-	3.518	4.018	3.318	3.599	4.099	3.399
Pot Cap-1 Maneuver	1334	-	-	1338	-	-	468	473	864	449	449	781
Stage 1	-	-	-	-	-	-	823	751	-	674	637	-
Stage 2	-	-	-	-	-	-	676	652	-	775	720	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1330	-	-	1327	-	-	431	448	857	390	425	768
Mov Cap-2 Maneuver	-	-	-	-	-	-	431	448	-	390	425	-
Stage 1	-	-	-	-	-	-	816	744	-	672	608	-
Stage 2	-	-	-	-	-	-	622	623	-	705	714	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.4			16.2			13.8		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	494	1330	-	-	1327	-	-	436
HCM Lane V/C Ratio	0.355	-	-	-	0.037	-	-	0.066
HCM Control Delay (s)	16.2	0	-	-	7.8	0	-	13.8
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	1.6	0	-	-	0.1	-	-	0.2

HCM 6th TWSC

4: S 7th Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	381	13	7	236	2	39	0	23	27	0	40
Future Vol, veh/h	11	381	13	7	236	2	39	0	23	27	0	40
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3	0	0	0	2	2	2
Mvmt Flow	12	423	14	8	262	2	43	0	26	30	0	44

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	265	0	0	437	0	0	755	735	430	747	741	264
Stage 1	-	-	-	-	-	-	454	454	-	280	280	-
Stage 2	-	-	-	-	-	-	301	281	-	467	461	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1293	-	-	1117	-	-	328	349	629	329	344	775
Stage 1	-	-	-	-	-	-	589	573	-	727	679	-
Stage 2	-	-	-	-	-	-	712	682	-	576	565	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1292	-	-	1117	-	-	304	342	629	311	337	774
Mov Cap-2 Maneuver	-	-	-	-	-	-	304	342	-	311	337	-
Stage 1	-	-	-	-	-	-	582	566	-	718	673	-
Stage 2	-	-	-	-	-	-	666	676	-	546	558	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.2		0.2		16.7		13.8	
HCM LOS					C		B	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	376	1292	-	-	1117	-	-	484
HCM Lane V/C Ratio	0.183	0.009	-	-	0.007	-	-	0.154
HCM Control Delay (s)	16.7	7.8	0	-	8.2	0	-	13.8
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.5

HCM 6th TWSC
5: S Pine Street & E Polk Street

02/06/2023

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	2	0	51	0	46	0	237	13	92	266	0
Future Vol, veh/h	1	2	0	51	0	46	0	237	13	92	266	0
Conflicting Peds, #/hr	5	0	0	0	0	5	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	2	2	2	9	9	9	5	5	5
Mvmt Flow	1	2	0	57	0	52	0	266	15	103	299	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	813	789	302	780	782	279	302	0	0	281	0	0
Stage 1	508	508	-	274	274	-	-	-	-	-	-	-
Stage 2	305	281	-	506	508	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.12	6.52	6.22	4.19	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.518	4.018	3.318	2.281	-	-	2.245	-	-
Pot Cap-1 Maneuver	299	325	742	313	326	760	1220	-	-	1264	-	-
Stage 1	551	542	-	732	683	-	-	-	-	-	-	-
Stage 2	709	682	-	549	539	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	256	292	740	288	293	756	1217	-	-	1264	-	-
Mov Cap-2 Maneuver	256	292	-	288	293	-	-	-	-	-	-	-
Stage 1	549	487	-	732	683	-	-	-	-	-	-	-
Stage 2	657	682	-	493	485	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.1		17		0		2.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1217	-	-	279	408	1264	-	-
HCM Lane V/C Ratio	-	-	-	0.012	0.267	0.082	-	-
HCM Control Delay (s)	0	-	-	18.1	17	8.1	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	1.1	0.3	-	-

HCM 6th AWSC

6: S 3rd Street & E Polk Street

02/06/2023

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	81	10	13	0	6	4	23	19	0	4	8	30
Future Vol, veh/h	81	10	13	0	6	4	23	19	0	4	8	30
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles, %	11	11	11	90	90	90	100	100	100	4	4	4
Mvmt Flow	147	18	24	0	11	7	42	35	0	7	15	55
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.1	9	10.3	7.6
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	55%	78%	0%	10%
Vol Thru, %	45%	10%	60%	19%
Vol Right, %	0%	12%	40%	71%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	42	104	10	42
LT Vol	23	81	0	4
Through Vol	19	10	6	8
RT Vol	0	13	4	30
Lane Flow Rate	76	189	18	76
Geometry Grp	1	1	1	1
Degree of Util (X)	0.134	0.242	0.029	0.089
Departure Headway (Hd)	6.308	4.607	5.829	4.189
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	570	781	615	856
Service Time	4.331	2.625	3.855	2.211
HCM Lane V/C Ratio	0.133	0.242	0.029	0.089
HCM Control Delay	10.3	9.1	9	7.6
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	0.5	0.9	0.1	0.3

HCM 6th AWSC

1: N Yamhill Street & E Main Street

02/06/2023

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	150	197	4	5	190	57	1	17	8	62	13	199
Future Vol, veh/h	150	197	4	5	190	57	1	17	8	62	13	199
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	3	3	3
Mvmt Flow	169	221	4	6	213	64	1	19	9	70	15	224
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16	12.3	9.6	13
HCM LOS	C	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	43%	2%	23%
Vol Thru, %	65%	56%	75%	5%
Vol Right, %	31%	1%	23%	73%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	351	252	274
LT Vol	1	150	5	62
Through Vol	17	197	190	13
RT Vol	8	4	57	199
Lane Flow Rate	29	394	283	308
Geometry Grp	1	1	1	1
Degree of Util (X)	0.05	0.591	0.421	0.461
Departure Headway (Hd)	6.15	5.392	5.355	5.391
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	578	667	671	665
Service Time	4.228	3.436	3.406	3.442
HCM Lane V/C Ratio	0.05	0.591	0.422	0.463
HCM Control Delay	9.6	16	12.3	13
HCM Lane LOS	A	C	B	B
HCM 95th-tile Q	0.2	3.9	2.1	2.4

HCM 6th Signalized Intersection Summary 2: S Pine Street & E Main Street

02/06/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	3	103	138	89	144	118	139	158	67	135	165	6
Future Volume (veh/h)	3	103	138	89	144	118	139	158	67	135	165	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1723	1723	1723	1709	1709	1709	1668	1668	1668
Adj Flow Rate, veh/h	3	117	77	101	164	103	158	180	62	153	188	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	6	6	6
Cap, veh/h	119	360	233	254	296	157	345	301	89	361	349	10
Arrive On Green	0.36	0.37	0.36	0.36	0.37	0.36	0.36	0.37	0.36	0.36	0.37	0.36
Sat Flow, veh/h	6	966	624	291	793	421	498	807	239	525	936	26
Grp Volume(v), veh/h	197	0	0	368	0	0	400	0	0	347	0	0
Grp Sat Flow(s),veh/h/ln	1596	0	0	1505	0	0	1544	0	0	1486	0	0
Q Serve(g_s), s	0.0	0.0	0.0	3.2	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.8	0.0	0.0	6.3	0.0	0.0	6.5	0.0	0.0	5.6	0.0	0.0
Prop In Lane	0.02		0.39	0.27		0.28	0.39		0.15	0.44		0.02
Lane Grp Cap(c), veh/h	686	0	0	683	0	0	711	0	0	695	0	0
V/C Ratio(X)	0.29	0.00	0.00	0.54	0.00	0.00	0.56	0.00	0.00	0.50	0.00	0.00
Avail Cap(c_a), veh/h	1356	0	0	1299	0	0	1400	0	0	1354	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.1	0.0	0.0	8.2	0.0	0.0	8.3	0.0	0.0	8.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.7	0.0	0.0	0.7	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	1.6	0.0	0.0	1.7	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.4	0.0	0.0	8.9	0.0	0.0	9.0	0.0	0.0	8.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		197			368			400			347	
Approach Delay, s/veh		7.4			8.9			9.0			8.6	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.7		15.7		15.7		15.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		24.5		26.5		24.5		26.5				
Max Q Clear Time (g_c+I1), s		4.8		8.5		8.3		7.6				
Green Ext Time (p_c), s		1.1		2.6		2.3		2.3				
Intersection Summary												
HCM 6th Ctrl Delay				8.6								
HCM 6th LOS				A								

HCM 6th TWSC

3: S 3rd Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	256	28	28	339	3	25	4	23	3	4	1
Future Vol, veh/h	3	256	28	28	339	3	25	4	23	3	4	1
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	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, %	1	1	1	1	1	1	4	4	4	0	0	0
Mvmt Flow	3	278	30	30	368	3	27	4	25	3	4	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	371	0	0	310	0	0	733	732	296	745	746	370
Stage 1	-	-	-	-	-	-	301	301	-	430	430	-
Stage 2	-	-	-	-	-	-	432	431	-	315	316	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.14	6.54	6.24	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.536	4.036	3.336	3.5	4	3.3
Pot Cap-1 Maneuver	1193	-	-	1256	-	-	334	346	739	333	344	680
Stage 1	-	-	-	-	-	-	704	661	-	607	587	-
Stage 2	-	-	-	-	-	-	598	579	-	700	659	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1193	-	-	1254	-	-	321	334	737	310	332	680
Mov Cap-2 Maneuver	-	-	-	-	-	-	321	334	-	310	332	-
Stage 1	-	-	-	-	-	-	700	658	-	605	569	-
Stage 2	-	-	-	-	-	-	575	562	-	669	656	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.6			14.6			15.7		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	430	1193	-	-	1254	-	-	345
HCM Lane V/C Ratio	0.131	0.003	-	-	0.024	-	-	0.025
HCM Control Delay (s)	14.6	8	0	-	7.9	0	-	15.7
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.1

HCM 6th TWSC

4: S 7th Street & E Main Street

02/06/2023

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	336	43	24	503	30	26	0	15	9	0	21
Future Vol, veh/h	49	336	43	24	503	30	26	0	15	9	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	2	2	2	0	0	0	0	0	0
Mvmt Flow	53	361	46	26	541	32	28	0	16	10	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	573	0	0	407	0	0	1111	1115	385	1108	1122	557
Stage 1	-	-	-	-	-	-	490	490	-	609	609	-
Stage 2	-	-	-	-	-	-	621	625	-	499	513	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	990	-	-	1152	-	-	188	210	667	189	208	534
Stage 1	-	-	-	-	-	-	564	552	-	486	488	-
Stage 2	-	-	-	-	-	-	478	480	-	557	539	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	990	-	-	1152	-	-	166	189	666	170	187	534
Mov Cap-2 Maneuver	-	-	-	-	-	-	166	189	-	170	187	-
Stage 1	-	-	-	-	-	-	525	513	-	452	472	-
Stage 2	-	-	-	-	-	-	443	464	-	505	501	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.4			24.4			17.3		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	229	990	-	-	1152	-	-	325
HCM Lane V/C Ratio	0.193	0.053	-	-	0.022	-	-	0.099
HCM Control Delay (s)	24.4	8.8	0	-	8.2	0	-	17.3
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0.1	-	-	0.3

HCM 6th TWSC
5: S Pine Street & E Polk Street

02/06/2023

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	0	39	0	24	0	367	24	39	349	3
Future Vol, veh/h	1	1	0	39	0	24	0	367	24	39	349	3
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, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	1	1	1
Mvmt Flow	1	1	0	47	0	29	0	442	29	47	420	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	987	987	422	974	975	457	424	0	0	471	0	0
Stage 1	516	516	-	457	457	-	-	-	-	-	-	-
Stage 2	471	471	-	517	518	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.209	-	-
Pot Cap-1 Maneuver	228	249	636	233	253	608	1125	-	-	1096	-	-
Stage 1	546	538	-	587	571	-	-	-	-	-	-	-
Stage 2	577	563	-	545	536	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	208	235	636	222	239	608	1125	-	-	1096	-	-
Mov Cap-2 Maneuver	208	235	-	222	239	-	-	-	-	-	-	-
Stage 1	546	508	-	587	571	-	-	-	-	-	-	-
Stage 2	550	563	-	513	506	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.5		21.5		0		0.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1125	-	-	221	293	1096	-	-
HCM Lane V/C Ratio	-	-	-	0.011	0.259	0.043	-	-
HCM Control Delay (s)	0	-	-	21.5	21.5	8.4	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	1	0.1	-	-

HCM 6th AWSC

6: S 3rd Street & E Polk Street

02/06/2023

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	6	27	0	4	6	18	13	0	4	20	30
Future Vol, veh/h	45	6	27	0	4	6	18	13	0	4	20	30
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	58	8	35	0	5	8	23	17	0	5	26	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	6.9	7.5	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	58%	58%	0%	7%
Vol Thru, %	42%	8%	40%	37%
Vol Right, %	0%	35%	60%	56%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	78	10	54
LT Vol	18	45	0	4
Through Vol	13	6	4	20
RT Vol	0	27	6	30
Lane Flow Rate	40	100	13	69
Geometry Grp	1	1	1	1
Degree of Util (X)	0.047	0.111	0.014	0.073
Departure Headway (Hd)	4.266	4.006	3.806	3.807
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	833	890	930	933
Service Time	2.325	2.053	1.87	1.866
HCM Lane V/C Ratio	0.048	0.112	0.014	0.074
HCM Control Delay	7.5	7.6	6.9	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0	0.2

HCM 6th AWSC

6: S 3rd Street & E Polk Street

02/06/2023

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	36	14	28	0	17	0	16	13	0	0	19	20
Future Vol, veh/h	36	14	28	0	17	0	16	13	0	0	19	20
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	30	30	30	73	73	73	0	0	0	0	0	0
Mvmt Flow	50	19	39	0	24	0	22	18	0	0	26	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	8.7	7.6	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	55%	46%	0%	0%
Vol Thru, %	45%	18%	100%	49%
Vol Right, %	0%	36%	0%	51%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	78	17	39
LT Vol	16	36	0	0
Through Vol	13	14	17	19
RT Vol	0	28	0	20
Lane Flow Rate	40	108	24	54
Geometry Grp	1	1	1	1
Degree of Util (X)	0.049	0.134	0.035	0.06
Departure Headway (Hd)	4.392	4.469	5.391	3.963
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	820	796	658	909
Service Time	2.393	2.53	3.475	1.964
HCM Lane V/C Ratio	0.049	0.136	0.036	0.059
HCM Control Delay	7.6	8.2	8.7	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0.1	0.2

Pine Street at E Main Street

Right Turns on Red

APM Section 13.4.2: RTOR

Equation: $vRTOR = sRTOR * (r/C)$

AM Peak Hour													
	sRTOR				r				C	vRTOR			
	EBR	WBR	NBR	SBR	EBR	WBR	NBR	SBR		EBR	WBR	NBR	SBR
2025 Background Conditions	178	68	16	1	31	31	29	29	60	92	35	8	0
2025 Buildout Conditions	179	69	15	1	31	31	29	29	60	92	36	7	0
2025 Buildout Conditions + JRM3	180	76	14	1	30	30	30	30	60	90	38	7	1

Intersection v/c

APM Section 13.4.4: Critical Intersection v/c ratio

Method:

- Determine Critical Movements in HCM 2000 reports
- HCM 6th reports, determine adjusted and sat flow rates
- Adjust Flow/Sat Flow
- Sum up Crit Movement Flow Rates
- $X_c \text{ of intersection} = \text{sum}(\text{crit.move. Flow rates} * (C/(C-L)))$

AM Peak Hour																				
	Critical Movement				Adjust Flow				Saturated Flow				Adj/Sat Flows				C	L	Xc	
	WB	SB	-	-	WB	SB	-	-	WB	SB	-	-	WB	SB	-	-				Sum
2025 Background Conditions	WB	SB	-	-	240	308	-	-	1510	1463	-	-	0.15894	0.210526	-	-	0.369467	60	8	0.426
2025 Buildout Conditions	WB	SB	-	-	244	312	-	-	1510	1465	-	-	0.161589	0.212969	-	-	0.374559	60	8	0.432
2025 Buildout Conditions + JRM3	WB	SB	-	-	258	320	-	-	1509	1466	-	-	0.170974	0.218281	-	-	0.389255	60	8	0.449

Pine Street at E Main Street

Right Turns on Red

APM Section 13.4.2: RTOR

Equation: $vRTOR = sRTOR * (r/C)$

	PM Peak Hour												
	sRTOR				r				C	vRTOR			
	EBR	WBR	NBR	SBR	EBR	WBR	NBR	SBR		EBR	WBR	NBR	SBR
2025 Background Conditions	138	50	26	2	31	31	29	29	60	71	26	13	1
2025 Buildout Conditions	140	50	25	2	31	31	29	29	60	72	26	12	1
2025 Buildout Conditions + JRM3	135	52	25	2	31	31	29	29	60	70	27	12	1

Intersection v/c

APM Section 13.4.4: Critical Intersection v/c ratio

Method:

- Determine Critical Movements in HCM 2000 reports
- HCM 6th reports, determine adjusted and sat flow rates
- Adjust Flow/Sat Flow
- Sum up Crit Movement Flow Rates
- $X_c \text{ of intersection} = \text{sum}(\text{crit.move. Flow rates} * (C/(C-L)))$

	PM Peak Hour																			
	Critical Movement				Adjust Flow				Saturated Flow				Adj/Sat Flows				C	L	Xc	
	WB	NB	-	-	WB	NB	-	-	WB	NB	-	-	WB	NB	-	-				Sum
2025 Background Conditions	WB	NB	-	-	355	386	-	-	1507	1530	-	-	0.235567	0.252288	-	-	0.487855	60	8	0.563
2025 Buildout Conditions	WB	NB	-	-	357	392	-	-	1507	1532	-	-	0.236894	0.255875	-	-	0.492769	60	8	0.569
2025 Buildout Conditions + JRM3	WB	NB	-	-	368	400	-	-	1505	1544	-	-	0.244518	0.259067	-	-	0.503586	60	8	0.581

NOTICE OF PUBLIC HEARING, CITY OF CARLTON
City File# SUB 2023-02: South 2nd Street Preliminary Subdivision Plan

City of Carlton
191 E. Main Street
Carlton, OR 97111

November 6, 2023

Re: Notice of Public Hearing, City of Carlton, Monday, November 13, 2023, at 6:00 PM, Location 945 West Grant Street.

Dear Sirs,

I am sure it was an oversight, but the homeowners and residents along South 2nd Street, south of East Polk Street were not notified of the City of Carlton Planning Commission Public Hearing. Please be aware that we are very interested in any impact that this subdivision will have on our failing street. According to the plan on the back of the Notice of Public Hearing, City of Carlton, the primary access to the subdivision will be our street. This will also be access to future development of parcels AH, and R3 since the Southern Pacific Railroad is hesitant to allowing a crossing of their right-of-way. We would like our concerns to be included on the agenda of City File# SUB 2023-02: South 2nd Street Preliminary Subdivision Plan.


Currently S. 2nd Street south of East Polk Street is failing. At the time of the original lot subdivision, which created parcels MX, AH and R3, S 2nd Street was to be improved to public standards from the existing asphalt at that time to the end of parcel AH. This section of S. 2nd Street was not installed to public standards and is now non-existent.

That portion of S 2nd Street within the proposed subdivision will be constructed to public standards, including sanitary and storm sewers, water, associated underground services, curbs, sidewalks, approved sub-base, compacted base rock and finish rock course, and asphalt. This will be inspected to ensure compliance with our city standards. We feel that the portion of south 2nd Street between East Polk Street and the subdivision must meet the same standards. Will this be accomplished and paid for by the developer, the city or the residents that have endured the street problems thus far. The question of payment is asked because historically the city residents have been asked to pay for items that were the responsibility of the subdivision developer.

We would also like to make you aware that the asphalt on South 2nd Street is sinking over the sanitary sewer line. This settling is approximately 55 feet south of the centerline of East Polk Street. This is indicative of a damaged sewer line. Since it is on the west side of the sewer trench, it could be in the sewer lateral. We note this because any heavy truck traffic could cause more damage, and possibly a failure of our sewer services.

Thank you for your attention to the needs of the city residents.

Sincerely,



Joseph Amerson
729 S. 2nd Street
Carlton, OR 97111