CROOK COUNTY BOARD OF COMMISSIONERS AGENDA

Wednesday, October 1, 2025 at 9:00 am

Crook County Annex I 320 NE Court St. I Prineville OR

Members of the public and media are welcome to attend in person or via Zoom: Phone: 1-253-215-8782; Meeting ID: 954 2612 6858; Passcode: 178149

PUBLIC COMMENT

Please note that each speaker is limited to a maximum of five (5) minutes. This guideline helps ensure that everyone has an equal opportunity to speak.

CONSENT AGENDA

(Consent agenda items are routine matters - e.g. minutes, appropriations orders, contracts, agreements, completion of previously discussed matters and decisions requiring Board ratification which are not expected to generate discussion. Any member of the Board may request removal of an item for separate discussion or vote. All remaining items are approved in a single motion.)

1. **Approval of OHA IGA No. 050110, Choice Model program services**
2. **Approval of OHA 2025-2027 Intergovernmental Agreement Amendment 2**
3. **Approval of Community Health Advisory Council (CHAC) Bylaws**

DISCUSSION

4. **Letter of Appreciation**
   Requester: Mitch Madden
   Lieutenant

5. **IGA with Multnomah Education Service District (MESD) for Medicaid Administrative Claiming**
   Requester: Katie Plumb
   Health and Human Services Director

6. **First Hearing of Ordinance 354: Transportation System Plan**

Requester: John Eisler
Community Development Director

MANAGER REPORT

COMMISSIONER UPDATES

PUBLIC COMMENT

Please note that each speaker is limited to a maximum of five (5) minutes. This guideline helps ensure that everyone has an equal opportunity to speak.

EXECUTIVE SESSION

None Scheduled

NOTICE AND DISCLAIMER

The Crook County Board of Commissioners is the governing body of Crook County, Oregon, and holds public meetings (generally on the first and third Wednesday of each month) to deliberate upon matters of County concern. As part of its efforts to keep the public apprised of its activities, the Crook County Board of Commissioners has published this PDF file. This file contains the material to be presented before the Board of Commissioners for its next scheduled regular meeting.

Please note that while County staff members make a dedicated effort to keep this file up to date, documents and content may be added, removed, or changed between when this file is posted online and when the Board of Commissioner meeting is held. The material contained herein may be changed at any time, with or without notice.

CROOK COUNTY MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY, ACCURACY, FITNESS FOR A PARTICULAR PURPOSE, OR FOR ANY OTHER MATTER. THE COUNTY IS NOT RESPONSIBLE FOR POSSIBLE ERRORS, OMMISSIONS, MISUSE, OR MISINTERPRETATION.

Please also note that this file does not contain any material scheduled to be discussed at an executive session, or material the access to which may be restricted under the terms of Oregon law.

If you are interested in obtaining additional copies of any of the documents contained herein, they may be obtained by completing a Crook County Public Records Request form. Request forms are available on the County's website or at the County Administration office.

Additional Items

Additional items may be discussed that arise too late to be included as a part of this notice. For information about adding agenda items, please contact the County Administration office at 447-6555. Assistance to handicapped individuals is provided with advance notice.

Contact: Brian Barney (brian.barney@crookcountyor.gov (541) 447-6555) | Agenda published on 09/24/2025 at 3:54 PM

AGENDA ITEM REQUEST

Date:
September 22, 2025

Meeting date desired:
October 1, 2025

Subject:
Mental Health Funding agreement No. 050110, Choice Model services

Background and policy implications:
Choice Model funds are used to eliminate barriers for severely mentally ill from gaining stability. Usually, these funds are spent on things like first and last month's rent or transportation expenses. These are things traditionally not allowable expenses for "treatment," but critical for the success of severely mentally ill remaining in the community.

Rick Treleaven at BestCare has reviewed the terms, and advised that he does not oppose its execution.

Budget/fiscal impacts:
This agreement would provide $33,959.99 for a service element called the Choice Model program, for the period of July 1, 2025 through December 31, 2025. Of that, roughly $32,000 is reserved for patients who are not eligible for Medicaid. The original term is only six months, but OHA can decide to unilaterally extend the duration. If they do, the contract contemplates that they may provide such additional funding as they deem appropriate. The Agreement allows the County to terminate on 90-days' prior written notice.

Requested by:
Rick Treleaven, BestCare Treatment Services

Presenters:
N/A – Consent Agenda

Legal review (only if requested): *Yes*

Elected official sponsor (if applicable): *N/A*

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Agreement Number PO-44300-00050110

STATE OF OREGON
INTERGOVERNMENTAL AGREEMENT

You can get this document in other languages, large print, braille, or a format you prefer free of charge. Contact the Agreement Administrator at the contact information found below. We accept all relay calls.

This Agreement is between the State of Oregon, acting by and through its Oregon Health Authority, hereinafter referred to as "**OHA**," and

Crook County
300 NE Third Street, Room 10
Prineville, Oregon 97754-1919
Attention: Eric Blain
Telephone: 541-416-3919
E-mail address: Eric.Blaine@CrookCountyOR.gov

hereinafter referred to as "**Agency**."

Work to be performed under this Agreement relates principally to OHA's

Health Systems
BH Adult Mental Health Program
500 Summer Street NE
Salem, Oregon 97301
Contract Administrator: Michael Oyster or delegate
Telephone: 503-410-2303
E-mail address: Michael.W.Oyster@oha.oregon.gov

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1. **Effective Date and Duration**. This Agreement shall become effective on **July 1, 2025,** when signed by all parties, regardless of the date of the parties' signatures. Unless extended or terminated earlier in accordance with its terms, this Agreement shall expire on **December 31, 2025**. Agreement termination shall not extinguish or prejudice OHA's right to enforce this Agreement with respect to any default by Agency that has not been cured.

2. **Agreement Documents**.

   a. This Agreement consists of this document and includes the following listed exhibits which are incorporated into this Agreement:

   (1) Exhibit A, Part 1: Statement of Work
   (2) Exhibit A, Part 2: Payment and Financial Reporting
   (3) Exhibit A, Part 3: Special Provisions
   (4) Exhibit B: Standard Terms and Conditions
   (5) Exhibit C: Insurance Requirements
   (6) Exhibit D: RESERVED
   (7) Exhibit E: Financial Pages

   There are no understandings, agreements, or representations, oral or written, regarding this Agreement that are not specified herein.

   b. In the event of a conflict between two or more of the documents comprising this Agreement, the language in the document with the highest precedence shall control. The precedence of each of the documents comprising this Agreement is as follows, listed from highest precedence to lowest precedence: this Agreement without Exhibits, Exhibits B, A, and C.

3. **Consideration**.

   a. The maximum not-to-exceed amount payable to Contractor under this Contract, which includes any allowable expenses, is set forth in **"Exhibit E, Financial Pages"** OHA will not pay Contractor any amount in excess of the not-to-exceed amount for completing the work and will not pay for Work until this Contract has been signed by all parties.

   b. OHA will only pay for completed Work under this Agreement, and may make interim payments as provided for in Exhibit A. For purposes of this Agreement, "Work" means specific work to be performed or services to be delivered by Agency as set forth in Exhibit A.

4. **Contractor Determination**. In accordance with the State Controller's Oregon Accounting Manual, policy 30.40.00.104, OHA's determination is that:

   ☐ Agency is a contractor ☒ Not applicable

   Assistance Listings number(s) of federal funds to be paid through this Agreement: N/A

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5. Agency Information and Certification.

a. Agency Information. This information is requested pursuant to ORS 305.385.

PLEASE PRINT OR TYPE THE FOLLOWING INFORMATION:

Agency Name (exactly as filed with the IRS): _____

_____

Street address: _____

City, state, zip code: _____

Email address: _____

Telephone: _____ Fax: _____

Agency Proof of Insurance. Agency shall provide the following information upon submission of the signed Agreement. All insurance listed herein must be in effect prior to Agreement execution.

Workers' Compensation Insurance Company: _____

Policy #: _____ Expiration Date: _____

b. Certification. Without limiting the generality of the foregoing, by signature on this Agreement, the undersigned hereby certifies under penalty of perjury that:

(1) Agency acknowledges that the Oregon False Claims Act, ORS 180.750 to 180.785, applies to any "claim" (as defined by ORS 180.750) that is made by (or caused by) the Agency and that pertains to this Agreement or to the project for which the Agreement work is being performed. Agency certifies that no claim described in the previous sentence is or will be a "false claim" (as defined by ORS 180.750) or an act prohibited by ORS 180.755. The Oregon Attorney General may enforce the liabilities and penalties provided by the Oregon False Claims Act against the Agency, in addition to any remedies that may be available to OHA under this Agreement;

(2) The information shown in Section 5.a., "Agency Information" above is Agency's true, accurate and correct information;

(3) To the best of the undersigned's knowledge, Agency has not discriminated against and will not discriminate against minority, women or emerging small business enterprises certified under ORS 200.055 in obtaining any required subcontracts;

(4) Agency and Agency's employees and agents are not included on the list titled "Specially Designated Nationals" maintained by the Office of Foreign Assets Control of the United States Department of the Treasury and currently found at *https://www.treasury.gov/resource-center/sanctions/SDN-List/Pages/default.aspx*;

(5) Agency is not listed on the non-procurement portion of the General

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Service Administration's "List of Parties Excluded from Federal procurement or Non-procurement Programs" found at *https://www.sam.gov/SAM*;

(6) Agency is not subject to backup withholding because:

(a) Agency is exempt from backup withholding;

(b) Agency has not been notified by the IRS that Agency is subject to backup withholding as a result of a failure to report all interest or dividends; or

(c) The IRS has notified Agency that Agency is no longer subject to backup withholding; and

(7) Agency's Federal Employer Identification Number (FEIN) or Social Security Number (SSN) provided to OHA is true and accurate. If this information changes, Agency shall provide OHA with the new FEIN or SSN within 10 days.

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AGENCY, BY EXECUTION OF THIS AGREEMENT, HEREBY ACKNOWLEDGES THAT AGENCY HAS READ THIS AGREEMENT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS.

AGENCY: YOU WILL NOT BE PAID FOR SERVICES RENDERED BEFORE THE EFFECTIVE DATE OF THIS AGREEMENT.

6. Signatures.

Crook County
By:

Authorized Signature	Printed Name	Title	Date

State of Oregon, acting by and through its Oregon Health Authority
By:

Authorized Signature	Printed Name	Title	Date

Approved by: Director, OHA Health Systems Division
By:

Authorized Signature	Printed Name	Title	Date

Approved for Legal Sufficiency:

Not Required per OAR 137-045-0030(1)(b)

Oregon Department of Justice — Date

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EXHIBIT A

Part 1
Statement of Work

1. **Purpose:** County shall provide oversight and care coordination of Individuals whose county of responsibility falls within Crook County, or who are members and Individuals assigned to the County by OHA to ensure access to services consistent with the clinical needs of the Individual and the purpose of the Choice Model Services. County of responsibility is defined as the county in which an Individual most recently maintained a postal address, or if residence is otherwise indeterminate, the county where the Individual was placed on an involuntary hold. Incarceration or placement in the state hospital or a licensed 24-hour facility is not to be used to make this determination. OHA requires that the County meets the highest standards prevalent in the industry or business most closely involved in providing the appropriate goods or services.

2. **Services to be provided by Contractor shall include:** Where referenced in this Contract, "Contract Settlement" means OHA's reconciliation of amounts OHA actually disbursed to County against amounts that OHA is obligated to pay to the contract for services provided under this Contract. Contract Settlement can occur following the end of a biennial period, upon termination or expiration of this Contract. County shall provide the following:

a. Service Name: **CHOICE MODEL SERVICES**

Service ID Code: **MHS 06**

(1) **Service Description**

(a) **For purposes of this Contract the following definitions apply:**

i. **Acute Care Psychiatric Facility** or **Acute Care Psychiatric Hospital** means a hospital that provides 24 hour-a-day psychiatric, multi-disciplinary, inpatient or residential stabilization, care and treatment, for adults ages 18 years of age or older with serious psychiatric disabilities.

ii. **Assertive Community Treatment (ACT)** means an evidence-based practice designed to provide comprehensive treatment and support services to Individuals with SPMI. ACT is intended to serve Individuals who have serious functional impairments and who have not responded to traditional psychiatric outpatient treatment. ACT services are provided by a single multi-disciplinary team, which typically includes a psychiatrist, a nurse, a therapist, supported employment, and a peer, and are designed to

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meet the individual needs of each Individual and to help keep the Individual in the community and out of a structured service setting, such as residential or hospital care. ACT is characterized by:

A. Low client to staff ratios;

B. Providing services in the community rather than in the office;

C. Shared caseloads among team members;

D. 24-hour staff availability;

E. Direct provision of all services by the team (rather than referring Individuals to other agencies); and

F. Time-unlimited services.

iii. **Behavioral Health Treatment** means treatment for mental illness, substance use disorders, or problem gambling.

iv. **County of Responsibility (COR)** means the county in which an Individual most recently maintained a postal address, or if residence is otherwise indeterminate, the county where the Individual was last present before being transported to an acute psychiatric hospital such as where the Individual was placed on a police officer custody, director's custody or transport custody. Incarceration or placement on an involuntary hold, at OSH or a licensed 24-hour facility, is not to be used to make this determination. OHA will determine COR if there is a disagreement between counties.

v. **Discharge Plan** means a written document prepared by the contractor beginning at admission and updated through the Discharge Planning process which identifies housing, treatment, and other services needed to support the continuity of care necessary to maintain the Individual's stability in the community. This report shall combine information from the Individual, OSH, community providers, recovery plan, and other resources.

vi. **Discharge Planning** means a process that begins upon admission to OSH or licensed residential setting and is based on the presumption that, with sufficient supports and services, all Individuals can live in an integrated community setting. Discharge planning is developed and implemented through a person-centered planning process in which the Individual has a primary role in creating, and is based on principles of self-determination.

vii. **Exceptional Needs Care Coordination (ENCC)** means a process-oriented activity to facilitate ongoing communication and collaboration with the Individual to arrange Services appropriate to their needs, preferences and choices. These functions include, but are not limited to:

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A. Facilitating communication between the Individual, family, natural supports and community resources, involved providers and agencies;

B. Organizing, facilitating and participating in interdisciplinary team (IDT) meetings when the Individual is in the community in collaboration with CCO Care Coordinators;

C. Emphasizing discharge planning in IDTs at OSH by collaborating with IDT members, providing recommendations in collaboration with CCO Care Coordinators towards discharge preparation and sharing revisions of the Discharge Plan;

D. Providing for continuity of care by creating linkages to and managing transitions between levels of care and transitions for adults with SPMI; and

E. In collaboration with CCO Care Coordinators, facilitating all referrals from OSH with the goal of providing oversight and care coordination for Adults with SPMI.

viii. **Face-to-Face** means a personal interaction where both words can be heard and facial expressions can be seen in person or through telehealth services where there is a live streaming audio and video.

ix. **Home and Community-Based Services (HCBS)** means the 1915 (i) state Medicaid plan amendment that allows for the use of Medicaid funding for home-based habilitation, behavioral habilitation, and psychosocial rehabilitation services for qualified Medicaid recipients who have been diagnosed with a mental illness.

x. **Home CCO** means enrollment in a Coordinated Care Organization (CCO) in a given service area, based upon an Individual's most recent permanent residency, determined at the time of original Oregon Health Plan eligibility determination or most current point of CCO enrollment prior to hospitalization per enrollment requirements in OAR 410-141-3500 through OAR 410-141-3870 and OAR 410-141-3815.

xi. **Individual** or **Client** means, with respect to a particular Service, any person who is enrolled in that Service, in whole or in part, with payments provided under this Contract.

xii. **In-Reach Services** means services delivered by community-based service providers to an Individual while at the Oregon State Hospital (OSH) or Acute Care Psychiatric Hospital to:

A. Maintain the Individual's connection to ongoing services and supports;

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B. Assist with stabilization and discharge planning; and

C. Collaborate with CCO Care Coordination to provide transition support for Individuals determined Ready to Transition from the OSH or determined appropriate for diversion from OSH while in an Acute Care Psychiatric Hospital.

xiii. **Integrated Setting** means a setting that enables Individuals with disabilities to interact with non-disabled persons to the fullest extent possible. Integrated settings are those that provide Individuals with disabilities opportunities to live, work, and receive services in the greater community, like Individuals without disabilities. Integrated settings:

A. Are located in mainstream society;

B. Offer access to community activities and opportunities at times, frequencies, and with persons of an Individual's choosing;

C. Afford Individuals choice in their daily life activities; and

D. Provide Individuals with disabilities the opportunity to interact with non-disabled persons to the fullest extent possible.

xiv. **Long-Term Psychiatric Care (LTPC)** means inpatient psychiatric services delivered in an Oregon State-operated Hospital after:

A. Usual and customary care has been provided in an acute inpatient hospital psychiatric care setting;

B. The Individual continues to be unsuccessful in an alternative setting; and

C. The Individual continues to need psychiatric hospitalization services.

xv. **Oregon State Hospital (OSH)** means any campus of the Oregon State Hospital system.

xvi. **Peer Delivered Services** means community-based services and supports provided by peers, and peer support specialists, to Individuals or family members with similar lived experience. These services are intended to support Individuals and families, to engage Individuals in ongoing treatment, and to live successfully in the community.

xvii. **Ready To Transition (RTT)** means that, consistent with the scope of the order of commitment, the Interdisciplinary Team (IDT) has determined that a State hospital level of care is no longer required as described in OAR 309-091-0035.

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xviii. **Recovery** means a process of change through which Individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential.

xix. **Recovery Plan** means a written document created by the Individual and facilitated by a peer support specialist, or an alternative as determined by the Individual, to help identify the Individual's strengths (e.g. knowledge gained from dealing with adversity, personal or professional roles, talents, personal traits) that can act as resources to the Individual and the Individual's recovery planning team in pursuing personal and treatment goals.

xx. **Serious and Persistent Mental Illness (SPMI)** means the current Diagnostic and Statistical Manual, Fifth Edition (DSM-V) of the American Psychiatric Association diagnostic criteria, incorporated by reference herein, for at least one of the following conditions, as a primary diagnosis for an adult 18 years of age or older:

A. Schizophrenia and other psychotic disorders;

B. Major depressive disorder;

C. Bipolar disorder;

D. Anxiety disorders limited to OCD (Obsessive Compulsive Disorder) and PTSD (Post Traumatic Stress Disorder);

E. Schizotypal personality disorder; or

F. Borderline personality disorder.

xxi. **Supported Housing** means permanent housing with tenancy rights and support services that enables Individuals to attain and maintain integrated affordable housing. Support services offered to Individuals living in supported housing are flexible and are available as needed and desired, but are not mandated as a condition of obtaining tenancy. Individuals have a private and secure place to make their home, just like other members of the community, with the same rights and responsibilities. Supported Housing enables Individuals with disabilities to interact with individuals without disabilities to the fullest extent possible. Supported Housing is scattered site housing. To be considered Supported Housing, for buildings with two or three units, no more than one unit may be used to provide Supported Housing for Individuals with SPMI who are referred by OHA or it contractors, and for buildings or complexes with four or more units, no more than 25% of the units in a building or complex may be used to provide Supported Housing for Individuals with SPMI who are referred by OHA or its contractors. Supported Housing has no more than two Individuals in a given apartment or house, with a private bedroom for each Individual. If two people are living

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together in an apartment or house, the Individuals must be able to select their own roommates. Supported Housing does not include housing where providers can reject Individuals for placement due to medical needs or substance abuse history.

xxii. **Voluntary by Guardian** means that an Individual's legal guardian has signed consent for admission to an acute psychiatric facility, Oregon State Hospital, or licensed residential facility.

(b) Service Description

i. Contractor shall offer oversight and care coordination for Adults with SPMI, as follows:

A. Facilitate access to quality, individualized community-based services and supports so that Individuals with SPMI are served in the most integrated setting possible; and

B. Facilitate effective utilization of services and facility-based care in the community.

C. Identify anticipated capacity needs across the system and communicate with Coordinated Care Organizations (CCO), Community Mental Health Programs (CMHP), and Oregon Health Authority (OHA).

iv. The Contractor's service area shall align primarily with the Home CCO and when no CCO is identified or the Home CCO has multiple MHS 06 Services contractors, then the service area will align with the COR as follows:

A. Home CCO is the designated service area for Individuals who are:

I. CCO enrolled members;

II. CCO members at the time of referral to Oregon State Hospital (OSH); and

B. COR is the designated service area for Individuals who are:

I. Fee-For-Service Medicaid Eligible;

II. Uninsured, underinsured, not eligible for Medicaid, or have exhausted Medicaid services, including those who meet the criteria for the Citizen Alien Waived Medical Program;

III. Undocumented;

IV. Privately insured;

V. Funded through Veterans Administration; or

VI. Other as approved by OHA.

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(c) Service Population

A. Individuals who meet the following criteria, shall be offered
Services through MHS 06 Services:

I. Have been civilly committed and admitted to OSH under ORS Chapter 426;

II. Have been civilly committed under ORS Chapter 426 and are referred to or at risk of being referred to OSH;

III. Admitted to OSH under guardian authorization; secured or non-secure licensed residential facility as defined in ORS 443.400 including licensed programs designated specifically for young adults in transition;

IV. Are residing in a licensed adult foster home, as defined in ORS 443.705, due to SPMI; or

V. As directed by OHA.

B. Individuals who, due to SPMI, meet the following criteria shall also be offered Services per Contractor's policies and procedures in Choice Model Services:

I. Are placed on outpatient commitment pursuant to ORS 426.127;

II. Are placed in assisted outpatient treatment pursuant to ORS 426.133;

III. Have transitioned from civil commitment pursuant to ORS 426.060 within the past 12 months;

IV. Have been found to lack fitness to proceed pursuant to ORS 161.370;

V. Will end jurisdiction within the next six months or ended jurisdiction under the Psychiatric Security Review Board (PSRB) within the past 12 months;

VI. Have been determined service eligible through the Department of Human Services (DHS), either through Aging & People with Disabilities (APD) or Intellectual/Developmental Disabilities (I/DD) Divisions to support the Behavioral Health Treatment service needs of Individuals determined service eligible for APD or I/DD; or

VII. Are at risk of meeting the above criteria without supports offered through Choice Model Services.

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(d) Services

Contractor shall provide:

i. Exceptional Needs Care Coordination as appropriate to the needs, preferences, and choices of each Individual.

ii. Coordination of behavioral Health Treatment services and supports not funded through other sources including, but not limited to:

A. Medicaid;

B. Medicare;

C. County Financial Assistance Agreements; or

D. CCO Contracts.

iii. Activities to remove barriers and facilitate access to integrated services and supports, which are not funded through other sources. Especially when Individuals are being discharged from OSH and when establishing residence in Supported Housing. These activities may include, but are not limited to:

A. Room and board payments;

B. Rental assistance, security deposits, and application fees;

C. Utility payments and deposits;

D. Prescription or over-the-counter medications and medical supplies not covered by Medicaid or other sources;

E. Transportation;

F. Activities to facilitate the securing of guardianship services, including but not limited to:

I. Paying the costs of:

(A) Court hearings to determine the necessity, continuation, or termination of a guardianship.

(B) Guardianship services to make decisions related to overseeing the care and supervision of an Individual.

II. If guardianship is expected to continue beyond a transitional period of time (6 months or less), then other payment options should be sought in order to maintain guardianship services.

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G. Activities to facilitate the securing of representative payee services; or

H. Peer Delivered Services.

iv. Support CCO Care Coordination efforts to gather documents such as the Community Questionnaire, develop a preliminary discharge plan from OSH and sign for final authorization for the Long-Term Psychiatric Care referral.

v. Other services and supports necessary to facilitate provision of services in the most integrated setting and the prevention of admission to higher levels of care.

(2) <u>Performance Requirements</u>

(a) Contractor shall provide the following services:

i. Exceptional Needs Care Coordination for Individuals served in Choice Model Services to facilitate access to services in the most integrated setting appropriate to the Individual's needs and strengths, including:

A. Care coordination and Discharge Planning for Individuals receiving services in licensed residential programs, even when placed outside the Contractor's service area.

B. Facilitate access to community-based rehabilitative mental health treatment services that are recovery-oriented, culturally responsive, and geographically accessible.

C. Facilitate access to Peer Delivered Services.

D. Serve as the Single Point Of Contact (SPOC) (OAR 309-019-0225) for all referrals from OSH to Assertive Community Treatment as described in OAR 309-019-0225 (25) Definition of SPOC in ACT Admission Process 309-019-0248.

E. Collaborate with CCO Care Coordination concerning Acute Care Psychiatric Hospitals to divert Individuals approved for LTPC from admission to OSH and toward community-based services and supports, when indicated to be appropriate.

F. Collaborate with the DSH, APD and I/DD Divisions to support the Behavioral Health Treatment service needs of Individuals determined service eligible for APD or I/DD.

G. Coordinate the transition from forensic services for Individuals ending jurisdiction under the PSRB within six months and who will be served in Choice Model Services.

H. Coordinate the transition from forensic services for Individuals found to lack fitness to proceed pursuant to

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ORS 161.370 and who will be enrolled in Choice Model Services; and

I. Serve as a resource for community partners and service agencies in locating local community-based Behavioral Health Treatment services and supports.

ii. In collaboration with CCO Care Coordinators, facilitate transition for Individuals with SPMI out of hospital settings and into the most integrated community settings by completing the following:

A. Hold a Face-to-Face meeting with each Individual within the Contractor's service area being referred to OSH from Acute Care Psychiatric Hospitals prior to being referred but no later than 72 hours from the date of approval for LTPC to identify services and supports necessary for community-based stabilization and facilitate access to those services and supports in order to divert Individuals from admission to OSH whenever possible.

B. Hold a Face-to-Face meeting with each Individual within the Contractor's service area who is civilly committed, and to the extent practical for Voluntary by Guardian, admitted to OSH within seven calendar days of admission.

C. Participate in OSH IDT meetings for each Individual within the Contractor's service area to update the Discharge Plan and to coordinate appropriate community-based services and supports.

D. Arrange, advocate, and coordinate appropriate In-Reach Services from CCOs and community providers who are delegated or identified as having responsibility for providing mental health services upon discharge.

E. Facilitate development of an initial Discharge Plan within 10 calendar days of admission to OSH and update the plan as appropriate after each IDT or discharge planning meeting with the Individual.

F. Coordinate and facilitate access to community-based resources of those civilly committed at OSH to support discharge from OSH within 72 hours of being determined RTT whenever possible for Individuals with SPMI who have been civilly committed, ensuring that:

I. No less than 90% of Individuals shall be discharged within 20 calendar days of being determined RTT.

II. If not discharged within the above timeframe then each Individual shall be discharged no later than 60 calendar days from the date placed on RTT.

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G. Collaborate with OSH to verify that entitlement enrollments (e.g. Medicaid, Medicare, SSI/SSDI) are in place and anticipated to be active upon discharge.

H. For Individuals not receiving Choice Model Services directly, collaborate and serve as a resource to support Discharge Planning for Individuals:

I. Determined services eligible for APD or I/DD;

II. Under the jurisdiction of ORS 161.370 to determine fitness to proceed; or

III. Under the jurisdiction of the PSRB.

(3) Reporting Requirements

None

(4) Special Reporting Requirements

(a) Contractor shall prepare and electronically submit, to bhd.contracts@odhsoha.oregon.gov, the following written reports using forms and procedures as prescribed on OHA's website, located at http://www.oregon.gov/OHA/HSD/AMH/Pages/Reporting-Requirements.aspx.

i. Maintain for reference but not submit policies and procedures for enrollment in Choice Model Services.

ii. Monthly Choice Model Client Status Reports shall be submitted no later than 45 calendar days following the end of each subject month during the term of the Contract for review and approval.

iii. Any other reports as mutually agreed upon between OHA and the Contractor.

(b) Upon OHA's identification of any deficiencies in the Contractor's performance under this Contract, including failure to submit reports as required, failure to expend available funding, or failure to meet performance requirements, Contractor shall prepare and submit to OHA within 30 calendar days a Corrective Action Plan (CAP) to be reviewed and approved by OHA. The CAP must include, but is not limited to, the following information:

i. Reason or reasons for the CAP based on OHA's concerns and the Contractor's review;

ii. The date the CAP will become effective with timelines for implementation;

iii. Planned action already taken to correct the deficiencies as well as proposed resolutions to address remaining deficits identified with oversight and monitoring by OHA; and

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iv. Proposed remedies, short of termination, should Contractor not come into compliance within the timeframe set forth in the CAP.

(5) Payment Calculation, Disbursement, and Confirmation of Performance and Reporting Requirements Procedures

OHA provides payments for MHS 06 Services in two different ways, through Part A and Part C payments. The payment type is identified in Exhibit E, "Financial Pages," on lines in which column "Part ABC," contains an "A" for Part A payment and a "C" for Part C payment. OHA provides payment for MHS 06 Services through Part A payments for non-Medicaid-eligible Services. Contractor and Service Providers shall maintain compliance with OAR 410-172-0600 through 0860 Medicaid Payment for Behavioral Health, and OAR 943-120-0310 through 0320 Provider Enrollment Services.
Payments provided to Contractor or Service Providers are subject to the following:

(a) OHA shall not authorize in aggregate, under this "Payment Calculation, Disbursement, and Confirmation of Performance and Reporting Requirements Procedures" section, payments requested for MHS 06 Services in excess of the contractual Not-to-Exceed amount. "Total aggregate payments" means the total of all payments authorized in Exhibit E, "Financial Pages." The monthly payment will be prorated for any month in which the Individual does not receive MHS 06 Services for a portion of the month.

Payments received by the Contractor or Service Provider from an Individual, the Individual's health insurance provider, another person's health insurance provider under which Individual is also covered, or any other Third-Party Resource (TPR) in support of Individual's care and Services, in addition to payments received under this Contract for the same Service, during the same time period or date of Service for the same Individual, must be returned to OHA unless TPR payment received are used to provide additional Service – increasing capacity – under the same Service Element for which payment from OHA and TPR was received.

(b) Contractor must make reasonable efforts to obtain payment first from other resources consistent with OAR 410-120-1280. Contractor is obligated to report to OHA, by email at hsd.contracts@odhsoha.oregon.gov, any TPR payments received, no later than 30 calendar days following expiration of this Contract. The following information shall be provided:

i. OHA Contract name and number;
ii. Client name and date of birth;
iii. Service for which payment was received;
iv. Date of service covered by payment;
v. Date of TPR payment received by Contractor or Service Provider; and
vi. Amount of payment.

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(c) Contractor is not entitled to payment in combination with Medicaid payments for the same Service, during the same time period or date of Services for the same Individual;

(d) OHA is not obligated to provide payments for any MHS 06 Services that are not properly reported in accordance with the "Reporting Requirements" and "Special Reporting Requirements" sections of this Contract or as required in an applicable Specialized Service Requirement by the date 60 calendar days after the earlier of expiration or termination of this Contract, termination of OHA's obligation to provide payment for MHS 06 Services, or termination of Contractor's obligation to include the Program Area in which MHS 06 Services fall.

(e) Part A Payments:

The Part A payment will be calculated, disbursed, and confirmed as follows:

i. Calculation of Payment: OHA will provide payment for MHS 06 Services provided under a particular line of Exhibit E, "Financial Pages," containing an "A" in column "Part ABC," from payments identified in that line in an amount equal to that line of the Financial Pages during the period specified in that line. The total of OHA payments for all MHS 06 Services delivered under a particular line of Exhibit E, "Financial Pages" containing an "A" in column "Part ABC," shall not exceed the total of payments for MHS 06 Services as specified in that line of the Financial Pages and are subject to the limitations described herein.

ii. Disbursement of Payment: Unless a different disbursement method is specified in that line of Exhibit E, "Financial Pages," OHA will disburse the Part A payments for MHS 06 Services provided under a particular line of the Financial Pages containing an "A" in column "Part ABC," to Contractor in substantially equal monthly payments during the period specified in that line of the Financial Pages subject to the following:

A. OHA may, upon written request of Contractor, adjust monthly payments;

B. Upon amendment to the Financial Pages, OHA shall adjust monthly payments as necessary, to reflect changes in the payments shown for MHS 06 Services provided under that line of the Financial Pages; and,

C. OHA may, after 30 calendar days (unless parties agree otherwise) written notice to Contractor, reduce the monthly payments based on under-used payment identified through MOTS and other reports in accordance with the "Reporting Requirements" and "Special Reporting Requirements" sections or applicable special conditions.

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(f) The Part C payments will be calculated and disbursed as follows:

i. Calculation of Performance Payment: Contractor will qualify for a performance payment at the end of the calendar year if it was operational, as defined by serving Individuals for a minimum of 180 calendar days per fiscal year and who:

A. Submit the Monthly Choice Model Client Status Report no later than 45 calendar days following the end of each subject month during the term of the contract; and

B. Address any deficiencies identified by the Contract Administrator.

ii. Disbursement of Performance Payment: The performance payment is based on achievement of the performance criteria in accordance with the "Performance Requirements" section above. Upon OHA's determination that Contractor met the performance criteria, Contractor may prepare and electronically submit a written invoice, to bhd.contracts@odhsoha.oregon.gov, for a performance payment, not to exceed the amount specified in that particular line of Exhibit E, "Financial Pages."

(g) Confirmation of Performance and Reporting Requirements: Contractor shall be required to demonstrate through the data properly reported in accordance with the and "Special Reporting Requirements" sections above, how payments provided for MHS 06 Services were utilized consistent with the terms and limitations herein to meet the performance requirements of this Service Description, and that Contractor shall be subject to the monitoring and review of performance requirements and quality measures by the OHA Contract Administrator for the Program under which this MHS 06 Service Description falls.

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EXHIBIT A

Part 2
Payment and Financial Reporting

1. Payment Provisions.

OHA agrees to pay Contractor for accomplishing the Work required by this Contract, as described in Exhibit A, Part 1 "Statement of Work," and Exhibit E, "Financial Pages."

2. Travel and Other Expenses.

OHA will not reimburse Contractor for any travel or additional expenses under this contract.

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EXHIBIT A

Part 3
Special Provisions

1. Confidentiality of Client Information.

a. Client Information.

(1) All information as to personal facts and circumstances obtained by the Agency on the client ("Client Information") shall be treated as privileged communications, shall be held confidential, and shall not be divulged without the written consent of the client, his or her guardian, or the responsible parent when the client is a minor child, or except as required by other terms of this Agreement. Nothing prohibits the disclosure of information in summaries, statistical, or other forms, which does not identify particular individuals.

(2) The use or disclosure of Client Information shall be limited to persons directly connected with the administration of this Agreement. Confidentiality policies shall be applied to all requests from outside sources.

(3) If Agency, or any of its officers, directors, employees, agents, or subcontractors receives or has access to confidential Social Security Administration (SSA), or Federal Tax Information (FTI), records in the performance of Work under this Agreement, Agency shall comply, and ensure that all of Agency's officers, directors, employees, agents and subcontractors comply, with the following provisions:

(a) With respect to SSA records:

i. Provide a current list of employees and employees of any agent or subcontractor with access to SSA records;

ii. Adhere to the same security requirements as employees of OHA;

iii. Abide by all relevant Federal laws, restrictions on access, use, disclosure, and the security requirements contained within OHA's agreement with SSA;

iv. Provide its employees and agents the same security awareness training as OHA's employees; and

v. Include the provisions of this Section 1.a.(3)(a) in any subcontract.

(b) With respect to Federal Tax Information (FTI), as defined in IRS Publication 1075:

i. Agency and its officers, directors and employees with access to, or who use FTI provided by OHA must meet the

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background check requirements defined in IRS Publication 1075;

ii. Any FTI made available to Agency shall be used only for the purpose of carrying out the provisions of this Agreement. Agency shall treat all information contained in FTI as confidential and that information shall not be divulged or made known in any manner to any person except as may be necessary in the performance of this Agreement. Inspection by or disclosure to anyone other than an officer or employee of the Agency is prohibited;

iii. Agency shall account for all FTI upon receipt and shall properly store all FTI before, during, and after processing. In addition, all FTI related output and products will be given the same level of protection as required for the source material;

iv. No work involving FTI furnished under this Agreement will be subcontracted without prior written approval of the IRS;

v. Maintain a list of employees who are authorized access to FTI. Such list will be provided to OHA and, upon request, to the IRS reviewing office; and

vi. Include the provisions of this Section 1.a.(3)(b) in any subcontract.

(c) Failure to abide by any of the requirements in this subsection could result in criminal or civil penalties and result in termination of this Agreement.

(d) Agency may be subjected to periodic and ongoing security reviews to ensure compliance with the requirements of Section 1.a.(3).

(4) Except as prohibited by Section 1.a.(3) above, OHA, Agency and any subcontractor will share information as necessary to effectively serve OHA clients.

b. Non-Client Information.

(1) Each Party acknowledges that it and any of its officers, directors, employees and agents may, in the course of performing its responsibilities under this Agreement, be exposed to or acquire information that is confidential to the other Party. To the extent permitted by law, any and all information of any form provided to a Party or its officers, directors, employees and agents in the performance of the Agreement that reasonably could at the time of its disclosure be understood to be confidential shall be deemed to be confidential information of the originating Party ("Confidential Non-Client Information").

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(2) Confidential Non-Client Information shall be deemed not to include information that:

(a) Is or becomes (other than by disclosure by the Party acquiring such information) publicly known or is contained in a publicly available document except to the extent applicable law still restricts disclosure;

(b) Is furnished by the originating Party to others without restrictions similar to those imposed on the receiving Party under this Agreement;

(c) Is rightfully in the receiving Party's possession without the obligation of nondisclosure prior to the time of its disclosure by the originating Party under this Agreement;

(d) Is obtained from a source other than the originating Party without the obligation of confidentiality;

(e) Is disclosed with the written consent of the originating Party; or

(f) Is independently developed by the receiving Party's officers, directors, employees and agents who can be shown to have had no access to the Confidential Non-Client Information.

(3) Nondisclosure. The receiving Party shall hold all Confidential Non-Client Information in strict confidence, using at least the same degree of care that it uses in maintaining the confidentiality of its own confidential information; and shall not sell, assign, license, market, transfer or otherwise dispose of, give or disclose Confidential Non-Client Information to third parties; shall not use Confidential Non-Client Information for any purposes whatsoever other than as contemplated by this Agreement or reasonably related thereto; and shall advise any of its officers, directors, employees and agents that receive or have access to the Confidential Non-Client Information of their obligations to keep Confidential Non-Client Information confidential. These confidentiality obligations do not restrict disclosure of information otherwise qualifying as Confidential Non-Client Information if the receiving Party can show that either of the following conditions exists: (i) the information was disclosed in response to a subpoena or court order duly issued in a judicial or legislative process, in which case the receiving Party shall notify the originating Party of the subpoena five days prior to the disclosure, unless such notice could not reasonably be given; or (ii) the disclosure was required to respond to a request for the information made under the Oregon Public Records Law, ORS 192.311 to 192.478. The receiving Party shall notify the originating Party of a public records request five days prior to the disclosure.

c. Upon request and pursuant to the instructions of OHA, Agency shall return or destroy all copies of Confidential Information, and Agency shall certify in writing the return or destruction of all Confidential Information.

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d. "Client" means any individual, family or provider:

(1) For whom OHA must provide Services and incidental or specialized Goods, in any combination thereof ("Services and Incidental Supplies"), according to state, federal law, rule, and policy. Those Services and Incidental Supplies include but are not limited to treatment, care, protection, and support without regard to the proximity of the services being provided;

(2) Who in fact receives and utilizes services provided by OHA primarily for that individual's or family's benefit;

(3) Who is under the custody, care, or both of OHA; or

(4) Who provides direct care or Services and is a proxy or representative of the non-provider Client.

2. Amendments.

a. Subject to Section 2.c. below, OHA reserves the right to amend or extend this Agreement under the following general circumstances:

(1) OHA may extend the Agreement for additional periods of time up to a total Agreement period of 5 years, and for additional money associated with the extended period(s) of time. The determination for any extension for time may be based on OHA's satisfaction with performance of the work or services provided by the Agency under this Agreement.

(2) OHA may periodically amend any payment rates throughout the life of the Agreement proportionate to increases in Portland Metropolitan Consumer Price Index; and to provide Cost Of Living Adjustments (COLA) if OHA so chooses. Any negotiation of increases in rates to implement a COLA will be as directed by the Oregon State Legislature.

b. OHA further reserves the right to amend the Statement of Work for the following:

(1) Programmatic changes/additions or modifications deemed necessary to accurately reflect the original scope of work that may not have been expressed in the original Agreement or previous amendments to the Agreement;

(2) Implement additional phases of the Work; or

(3) As necessitated by changes in Code of Federal Regulations, Oregon Revised Statutes, or Oregon Administrative Rules which, in part or in combination, govern the provision of services provided under this Agreement.

c. Upon identification, by any party to this Agreement, of any circumstance which may require an amendment to this Agreement, the parties may enter into negotiations regarding the proposed modifications. Any resulting amendment must be in writing and be signed by all parties to the Agreement before the modified or additional provisions are binding on either party. All amendments must comply with Exhibit B, Section 21., "Amendments" of this Agreement.

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3. Agency Requirements to Report Abuse of Certain Classes of Persons.

a. Agency shall comply with, and cause all employees, agents and subcontractors to comply with, the applicable laws for mandatory reporting of abuse, including but not limited to abuse of the following persons in Oregon:

(1) Children (ORS 419B.005 through 419B.045);

(2) Elderly Persons (ORS 124.055 through 124.065);

(3) Residents of Long Term Care Facilities (ORS 441.630 through 441.645);

(4) Adults with Mental Illness or Developmental Disabilities (ORS 430.735 through 430.743);

(5) Abuse of Individuals Living in State Hospitals (OAR 943-045-0400 through 945-045-0520).

b. Agency shall immediately make reports of suspected abuse of persons who are members of the classes established in Section 3.a. above to Oregon's Statewide Abuse Reporting Hotline: 1-855-503-SAFE (7233) or local law enforcement, as a requirement of this Agreement. The Agency does not need to know abuse occurred, just suspect abuse, to be required to report.

c. In addition to the requirements of Sections 3.a. and 3.b. above, if law enforcement is notified regarding a report of child abuse, neglect, or threat of harm, Agency shall also notify the local Child Protective Services Office of the Oregon Department of Human Services within 24 hours. If law enforcement is notified regarding a report of abuse of elderly, long term care facility residents, adults with mental illness or developmental disabilities, Agency shall also notify the local Aging and People with Disabilities Office of the Oregon Department of Human Services within 24 hours.

d. If known, the abuse report must contain the following:

(1) The name and address of the abused person and any people responsible for that person's care;

(2) The abused person's age;

(3) The nature and the extent of the abuse, including any evidence of previous abuse;

(4) The explanation given for the abuse;

(5) The date of the incident; and

(6) Any other information that might be helpful in establishing the cause of the abuse and the identity of the abuser.

4. Background Checks. **Reserved**

5. Equal Access to Services. Agency shall provide equal access to covered services for both males and females under 18 years of age, including access to appropriate facilities, services and treatment, to achieve the policy in ORS 417.270.

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6. **Media Disclosure**. Agency will not provide information to the media regarding a recipient of services purchased under this Agreement without first consulting the OHA office that referred the child or family. Agency will make immediate contact with the OHA office when media contact occurs. The OHA office will assist Agency with an appropriate follow-up response for the media.

7. **Nondiscrimination**. Agency must provide services to OHA clients without regard to race, religion, national origin, sex, age, marital status, sexual orientation or disability (as defined under the Americans with Disabilities Act). Agency services must reasonably accommodate the cultural, language and other special needs of clients.

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EXHIBIT B

Standard Terms and Conditions

1. **Governing Law, Consent to Jurisdiction**. This Agreement shall be governed by and construed in accordance with the laws of the State of Oregon without regard to principles of conflicts of law. Any claim, action, suit or proceeding (collectively, "Claim") between the parties that arises from or relates to this Agreement shall be brought and conducted solely and exclusively within a circuit court for the State of Oregon of proper jurisdiction. THE PARTIES, BY EXECUTION OF THIS AGREEMENT, HEREBY CONSENT TO THE IN PERSONAM JURISDICTION OF SAID COURTS. Except as provided in this section, neither party waives any form of defense or immunity, whether sovereign immunity, governmental immunity, immunity based on the eleventh amendment to the Constitution of the United States or otherwise, from any Claim or from the jurisdiction of any court. The parties acknowledge that this is a binding and enforceable agreement and, to the extent permitted by law, expressly waive any defense alleging that either party does not have the right to seek judicial enforcement of this Agreement.

2. **Compliance with Law**. Agency shall comply with and require all subcontractors to comply with all federal, state and local laws, regulations, executive orders and ordinances applicable to the Agency and Agreement. All employers, including Agency, that employ subject workers who provide services in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126.

3. **Independent Contractors**. The parties agree and acknowledge that their relationship is that of independent contracting parties and that Agency is not an officer, employee, or agent of the State of Oregon as those terms are used in ORS 30.265 or otherwise.

4. **Representations and Warranties**.

   a. **Agency's Representations and Warranties**. Agency represents and warrants to OHA that:

      (1) Agency has the power and authority to enter into and perform this Agreement;

      (2) This Agreement, when executed and delivered, shall be a valid and binding obligation of Agency enforceable in accordance with its terms;

      (3) Agency has the skill and knowledge possessed by well-informed members of its industry, trade or profession and Agency will apply that skill and knowledge with care and diligence to perform the Work in a professional manner and in accordance with standards prevalent in Agency's industry, trade or profession;

      (4) Agency shall, at all times during the term of this Agreement, be qualified, professionally competent, and duly licensed to perform the Service; and

      (5) Agency prepared its proposal related to this Agreement, if any, independently from all other proposers, and without collusion, fraud, or other dishonesty.

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b. Warranties Cumulative. The warranties set forth in this section are in addition to, and not in lieu of, any other warranties provided.

5. Funds Available and Authorized; Payments.

a. The State of Oregon's payment obligations under this Agreement are conditioned upon OHA receiving funding, appropriations, limitations, allotment, or other expenditure authority sufficient to allow OHA, in the exercise of its reasonable administrative discretion, to meet its payment obligations under this Agreement. Agency is not entitled to receive payment under this Agreement from any part of Oregon state government other than OHA. Nothing in this Agreement is to be construed as permitting any violation of Article XI, Section 7 of the Oregon Constitution or any other law regulating liabilities or monetary obligations of the State of Oregon. OHA represents that as of the date it executes this Agreement, it has sufficient appropriations and limitation for the current biennium to make payments under this Agreement.

b. **Payment Method**. Payments under this Agreement will be made by Electronic Funds Transfer (EFT). Upon request, Agency shall provide its taxpayer identification number (TIN) and other necessary banking information to receive EFT payment. Agency shall maintain at its own expense a single financial institution or authorized payment agent capable of receiving and processing EFT using the Automated Clearing House (ACH) transfer method. The most current designation and EFT information will be used for all payments under this Agreement. Agency shall provide this designation and information on a form provided by OHA. In the event that EFT information changes or the Agency elects to designate a different financial institution for the receipt of any payment made using EFT procedures, the Agency shall provide the changed information or designation to OHA on an OHA-approved form. OHA is not required to make any payment under this Agreement until receipt of the correct EFT designation and payment information from the Agency.

6. Recovery of Overpayments. IF BILLINGS UNDER THIS AGREEMENT, OR UNDER ANY OTHER AGREEMENT BETWEEN AGENCY AND OHA, RESULT IN PAYMENTS TO AGENCY TO WHICH AGENCY IS NOT ENTITLED, OHA, AFTER GIVING WRITTEN NOTIFICATION TO AGENCY, MAY WITHHOLD FROM PAYMENTS DUE TO AGENCY SUCH AMOUNTS, OVER SUCH PERIODS OF TIME, AS ARE NECESSARY TO RECOVER THE AMOUNT OF THE OVERPAYMENT. NOTHING IN THIS SECTION SHALL REQUIRE AGENCY OR OHA TO ACT IN VIOLATION OF STATE OR FEDERAL LAW OR THE CONSTITUTION OF THE STATE OF OREGON.

7. Ownership of Work Product.

a. **Definitions**. As used in this Section, and elsewhere in this Agreement, the following terms have the meanings set forth below:

(1) "Agency Intellectual Property" means any intellectual property owned by Agency and developed independently from the Work.

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(2) "Third Party Intellectual Property" means any intellectual property owned by parties other than OHA or Agency.

(3) "Work Product" means every invention, discovery, work of authorship, trade secret or other tangible or intangible item and all intellectual property rights therein that Agency is required to deliver to OHA pursuant to the Work.

b. **Original Works**. All Work Product created by Agency pursuant to the Work, including derivative works and compilations, and whether or not such Work Product is considered a "work made for hire," shall be the exclusive property of OHA. OHA and Agency agree that all Work Product is "work made for hire" of which OHA is the author within the meaning of the United States Copyright Act. If for any reason the original Work Product created pursuant to the Work is not "work made for hire," Agency hereby irrevocably assigns to OHA any and all of its rights, title, and interest in all original Work Product created pursuant to the Work, whether arising from copyright, patent, trademark, trade secret, or any other state or federal intellectual property law or doctrine. Upon OHA's reasonable request, Agency shall execute such further documents and instruments necessary to fully vest such rights in OHA. Agency forever waives any and all rights relating to original Work Product created pursuant to the Work, including without limitation, any and all rights arising under 17 U.S.C. § 106A or any other rights of identification of authorship or rights of approval, restriction or limitation on use or subsequent modifications.

c. In the event that Work Product is Agency Intellectual Property, a derivative work based on Agency Intellectual Property or a compilation that includes Agency Intellectual Property, Agency hereby grants to OHA an irrevocable, non-exclusive, perpetual, royalty-free license to use, reproduce, prepare derivative works based upon, distribute copies of, perform and display Agency Intellectual Property and the pre-existing elements of the Agency Intellectual Property employed in the Work Product, and to authorize others to do the same on OHA's behalf.

d. In the event that Work Product is Third Party Intellectual Property, a derivative work based on Third Party Intellectual Property or a compilation that includes Third Party Intellectual Property, Agency shall secure on OHA's behalf and in the name of OHA an irrevocable, non-exclusive, perpetual, royalty-free license to use, reproduce, prepare derivative works based upon, distribute copies of, perform and display the Third Party Intellectual Property and the pre-existing elements of the Third Party Intellectual Property employed in the Work Product, and to authorize others to do the same on OHA's behalf.

8. **Agency Default**. Agency shall be in default under this Agreement upon the occurrence of any of the following events:

a. Agency fails to perform, observe or discharge any of its covenants, agreements or obligations set forth herein.

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b. Any representation, warranty or statement made by Agency herein or in any documents or reports relied upon by OHA to measure the delivery of services, the expenditure of payments or the performance by Agency is untrue in any material respect when made;

c. Agency (1) applies for or consents to the appointment of, or taking of possession by, a receiver, custodian, trustee, or liquidator of itself or all of its property, (2) admits in writing its inability, or is generally unable, to pay its debts as they become due, (3) makes a general assignment for the benefit of its creditors, (4) is adjudicated a bankrupt or insolvent, (5) commences a voluntary case under the Federal Bankruptcy Code (as now or hereafter in effect), (6) files a petition seeking to take advantage of any other law relating to bankruptcy, insolvency, reorganization, winding-up, or composition or adjustment of debts, (7) fails to controvert in a timely and appropriate manner, or acquiesces in writing to, any petition filed against it in an involuntary case under the Bankruptcy Code, or (8) takes any action for the purpose of effecting any of the foregoing; or

d. A proceeding or case is commenced, without the application or consent of Agency, in any court of competent jurisdiction, seeking (1) the liquidation, dissolution or winding-up, or the composition or readjustment of debts of Agency, (2) the appointment of a trustee, receiver, custodian, liquidator, or the like of Agency or of all or any substantial part of its assets, or (3) similar relief in respect to Agency under any law relating to bankruptcy, insolvency, reorganization, winding-up, or composition or adjustment of debts, and such proceeding or case continues undismissed, or an order, judgment, or decree approving or ordering any of the foregoing is entered and continues unstayed and in effect for a period of sixty consecutive days, or an order for relief against Agency is entered in an involuntary case under the Federal Bankruptcy Code (as now or hereafter in effect).

9. OHA Default. OHA shall be in default under this Agreement upon the occurrence of any of the following events:

a. OHA fails to perform, observe or discharge any of its covenants, agreements, or obligations set forth herein; or

b. Any representation, warranty or statement made by OHA herein is untrue in any material respect when made.

10. Termination.

a. Agency Termination. Agency may terminate this Agreement:

(1) For its convenience, upon at least 90 days advance written notice to OHA;

(2) Upon 45 days advance written notice to OHA, if Agency does not obtain funding, appropriations and other expenditure authorizations from Agency's governing body, federal, state or other sources sufficient to permit Agency to satisfy its performance obligations under this Agreement, as determined by Agency in the reasonable exercise of its administrative discretion; or

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(3) Upon 30 days advance written notice to OHA, if OHA is in default under the Agreement and such default remains uncured at the end of said 30-day period or such longer period, if any, as Agency may specify in the notice.

b. OHA Termination. OHA may terminate this Agreement:

(1) For its convenience, upon at least thirty days advance written notice to Agency;

(2) Upon 45 days advance written notice to Agency, if OHA does not obtain funding, appropriations and other expenditure authorizations from federal, state or other sources sufficient to meet the payment obligations of OHA under this Agreement, as determined by OHA in the reasonable exercise of its administrative discretion. Notwithstanding the preceding sentence, OHA may terminate this Agreement in whole or in part, immediately upon written notice to Agency or at such other time as it may determine if action by the Oregon Legislative Assembly or Emergency Board reduces OHA's legislative authorization for expenditure of funds to such a degree that OHA will no longer have sufficient expenditure authority to meet its payment obligations under this Agreement, as determined by OHA in the reasonable exercise of its administrative discretion, and the effective date for such reduction in expenditure authorization is less than 45 days from the date the action is taken;

(3) Immediately upon written notice to Agency if Oregon statutes or federal laws, regulations or guidelines are modified, changed or interpreted by the Oregon Legislative Assembly, the federal government or a court in such a way that OHA no longer has the authority to meet its obligations under this Agreement or no longer has the authority to provide payment from the funding source it had planned to use;

(4) Upon 30 days advance written notice to Agency, if Agency is in default under this Agreement and such default remains uncured at the end of said 30-day period or such longer period, if any, as OHA may specify in the notice;

(5) Immediately upon written notice to Agency, if any license or certificate required by law or regulation to be held by Agency or a subcontractor is for any reason denied, revoked, suspended, not renewed or changed in such a way that Agency or a subcontractor no longer meets requirements to deliver the service. This termination right may only be exercised with respect to the particular part of the Work impacted by the loss of necessary licensure or certification; or

(6) Immediately upon written notice to Agency, if OHA determines that Agency or any of its subcontractors have endangered or are endangering the health or safety of an Agency client or others.

c. Mutual Termination. The Agreement may be terminated immediately upon mutual written consent of the parties or at such time as the parties may agree in the written consent.

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d. **Return of Property**. Upon termination of this Agreement for any reason whatsoever, Agency shall immediately deliver to OHA all of OHA's property (including without limitation any Work Products for which OHA has made payment in whole or in part) that are in the possession or under the control of Agency in whatever stage of development and form of recordation such OHA property is expressed or embodied at that time. Upon receiving a notice of termination of this Agreement, Agency shall immediately cease all activities under this Agreement, unless OHA expressly directs otherwise in such notice of termination. Upon OHA's request, Agency shall surrender to anyone OHA designates, all documents, research or objects or other tangible things needed to complete the Work Products.

11. **Effect of Termination**.

a. **Entire Agreement**.

(1) Upon termination of this Agreement in its entirety, OHA shall have no further obligation to pay Agency under this Agreement.

(2) Upon termination of this Agreement in its entirety, Agency shall have no further obligation to perform Work under this Agreement.

b. **Obligations and Liabilities**. Notwithstanding Section 11.a. above, any termination of this Agreement shall not prejudice any obligations or liabilities of either party accrued prior to such termination.

12. **Limitation of Liabilities**. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR RELATED TO THIS AGREEMENT. NEITHER PARTY SHALL BE LIABLE FOR ANY DAMAGES OF ANY SORT ARISING SOLELY FROM THE TERMINATION OF THIS AGREEMENT OR ANY PART HEREOF IN ACCORDANCE WITH ITS TERMS.

13. **Indemnity/Hold Harmless Provision**. OHA and Agency shall be responsible exclusively with respect to their employees, for providing for employment-related benefits and deductions that are required by law, including but not limited to federal and state income tax deductions, workers compensation coverage, and PERS contributions. Agency shall perform the services under this Agreement as an independent contractor. Agency and OHA each shall be responsible, to the other, to the extent permitted by the Oregon Constitution, subject to the limitations of the Tort Claims Act (ORS 30. 260-30.300), only for the acts, omissions or negligence of its own officers, employees or agents.

14. **Insurance**. Agency shall require subcontractors to maintain insurance as set forth in Exhibit C, which is attached hereto.

15. **Records Maintenance; Access**. Agency shall maintain all financial records relating to this Agreement in accordance with generally accepted accounting principles. In addition, Agency shall maintain any other records, books, documents, papers, plans, records of shipments and payments and writings of Agency, whether in paper, electronic or other form, that are pertinent to this Agreement in such a manner as to clearly document Agency's performance. All financial records, other records, books, documents, papers,

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plans, records of shipments and payments and writings of Agency whether in paper, electronic or other form, that are pertinent to this Agreement, are collectively referred to as "Records." Agency acknowledges and agrees that OHA and the Oregon Secretary of State's Office and the federal government and their duly authorized representatives shall have access to all Records to perform examinations and audits and make excerpts and transcripts. Agency shall retain and keep accessible all Records for a minimum of six (6) years, or such longer period as may be required by applicable law, following final payment and termination of this Agreement, or until the conclusion of any audit, controversy or litigation arising out of or related to this Agreement, whichever date is later. Agency shall maintain Records in accordance with the records retention schedules set forth in OAR Chapter 166.

16. **Information Privacy/Security/Access**. If the Work performed under this Agreement requires Agency, or when allowed, its subcontractor(s) to access or otherwise use any OHA Information Asset or Network and Information System in which security or privacy requirements apply, and OHA grants Agency, its subcontractor(s), or both access to such OHA Information Assets or Network and Information Systems, Agency shall comply and require its subcontractor(s) to which such access has been granted to comply with the terms and conditions applicable to such access or use, including OAR 943-014-0300 through OAR 943-014-0320, as such rules may be revised from time to time. For purposes of this section, "Information Asset" and "Network and Information System" have the meaning set forth in OAR 943-014-0305, as such rule may be revised from time to time.

17. **Force Majeure**. Neither OHA nor Agency shall be held responsible for delay or default caused by fire, civil unrest, labor unrest, act of nature, or war which is beyond the reasonable control of OHA or Agency, respectively. Each party shall, however, make all reasonable efforts to remove or eliminate such cause of delay or default and shall, upon the cessation of the cause, diligently pursue performance of its obligations under this Agreement. OHA may terminate this Agreement upon written notice to the other party after reasonably determining that the delay or default will likely prevent successful performance of this Agreement.

18. **Assignment of Agreement, Successors in Interest**.

a. Agency shall not assign or transfer its interest in this Agreement without prior written approval of OHA. Any such assignment or transfer, if approved, is subject to such conditions and provisions as OHA may deem necessary. No approval by OHA of any assignment or transfer of interest shall be deemed to create any obligation of OHA in addition to those set forth in the Agreement.

b. The provisions of this Agreement shall be binding upon and shall inure to the benefit of the parties hereto, and their respective successors and permitted assigns.

19. **Subcontracts**. Agency shall not enter into any subcontracts for any of the Work required by this Agreement without OHA's prior written consent. In addition to any other provisions OHA may require, Agency shall include in any permitted subcontract under this Agreement provisions to ensure that OHA will receive the benefit of subcontractor performance as if the subcontractor were the Agency with respect to Sections 1, 2, 3, 4, 7, 15, 16, 18, 19, 20, and 22 of this Exhibit B. OHA's consent to any subcontract shall not

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relieve Agency of any of its duties or obligations under this Agreement.

20. **No Third Party Beneficiaries**. OHA and Agency are the only parties to this Agreement and are the only parties entitled to enforce its terms. The parties agree that Agency's performance under this Agreement is solely for the benefit of OHA to assist and enable OHA to accomplish its statutory mission. Nothing in this Agreement gives, is intended to give, or shall be construed to give or provide any benefit or right, whether directly, indirectly or otherwise, to third persons any greater than the rights and benefits enjoyed by the general public unless such third persons are individually identified by name herein and expressly described as intended beneficiaries of the terms of this Agreement.

21. **Amendments**. No amendment, modification or change of terms of this Agreement shall bind either party unless in writing and signed by both parties and, when required, approved by the Oregon Department of Justice. Such amendment, modification or change, if made, shall be effective only in the specific instance and for the specific purpose given.

22. **Severability**. The parties agree that if any term or provision of this Agreement is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular term or provision held to be invalid.

23. **Survival**. Sections 1, 4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 20, 23, 28, 29 and 30 of this Exhibit B shall survive Agreement expiration or termination as well as those the provisions of this Agreement that by their context are meant to survive. Agreement expiration or termination shall not extinguish or prejudice OHA's right to enforce this Agreement with respect to any default by Agency that has not been cured.

24. **Notice**. Except as otherwise expressly provided in this Agreement, any communications between the parties hereto or notices to be given hereunder shall be given in writing by personal delivery, fax, or mailing the same, postage prepaid to Agency or OHA at the address or number set forth in this Agreement, or to such other addresses or numbers as either party may indicate pursuant to this Section. Any communication or notice so addressed and mailed by regular mail shall be deemed received and effective five days after the date of mailing. Any communication or notice delivered by fax shall be deemed received and effective on the day the transmitting machine generates a receipt of the successful transmission, if transmission was during normal business hours of the recipient, or on the next business day if transmission was outside normal business hours of the recipient. Notwithstanding the forgoing, to be effective against the other party, any notice transmitted by fax must be confirmed by telephone notice to the other party. Any communication or notice given by personal delivery shall be deemed effective when actually delivered to the addressee.

OHA: Office of Contracts & Procurement
500 Summer Street NE, E-03
Salem, OR 97301
Telephone: 503-945-5818
Fax: 503-378-4324

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25. **Headings**. The headings and captions to sections of this Agreement have been inserted for identification and reference purposes only and shall not be used to construe the meaning or to interpret this Agreement.

26. **Counterparts**. This Agreement and any subsequent amendments may be executed in several counterparts, all of which when taken together shall constitute one agreement binding on all parties, notwithstanding that all parties are not signatories to the same counterpart. Each copy of this Agreement and any amendments so executed shall constitute an original.

27. **Construction**. The parties agree and acknowledge that the rule of construction that ambiguities in a written agreement are to be construed against the party preparing or drafting the agreement shall not be applicable to the interpretation of this Agreement.

28. **Waiver**. The failure of either party to enforce any provision of this Agreement shall not constitute a waiver by that party of that or any other provision. No waiver or consent shall be effective unless in writing and signed by the party against whom it is asserted.

29. **Alternative Dispute Resolution**. The parties should attempt in good faith to resolve any dispute arising out of this agreement. This may be done at any management level, including at a level higher than persons directly responsible for administration of the agreement. In addition, the parties may agree to utilize a jointly selected mediator or arbitrator (for non-binding arbitration) to resolve the dispute short of litigation.

30. **Contribution**. If any third party makes any claim or brings any action, suit or proceeding alleging a tort as now or hereafter defined in ORS 30.260 ("Third Party Claim") against a party (the "Notified Party") with respect to which the other party ("Other Party") may have liability, the Notified Party must promptly notify the Other Party in writing of the Third Party Claim and deliver to the Other Party a copy of the claim, process, and all legal pleadings with respect to the Third Party Claim. Either party is entitled to participate in the defense of a Third Party Claim, and to defend a Third Party Claim with counsel of its own choosing. Receipt by the Other Party of the notice and copies required in this paragraph and meaningful opportunity for the Other Party to participate in the investigation, defense and settlement of the Third Party Claim with counsel of its own choosing are conditions precedent to the Other Party's liability with respect to the Third Party Claim.

With respect to a Third Party Claim for which the State is jointly liable with the Agency (or would be if joined in the Third Party Claim), the State shall contribute to the amount of expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred and paid or payable by the Agency in such proportion as is appropriate to reflect the relative fault of the State on the one hand and of the Agency on the other hand in connection with the events which resulted in such expenses, judgments, fines or settlement amounts, as well as any other relevant equitable considerations. The relative fault of the State on the one hand and of the Agency on the other hand shall be determined by reference to, among other things, the parties' relative intent, knowledge, access to information and opportunity to correct or prevent the circumstances resulting in such expenses, judgments, fines or settlement amounts. The State's contribution amount in any instance is capped to the same extent it would have been capped under Oregon law if the State had sole liability in the proceeding.

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With respect to a Third Party Claim for which the Agency is jointly liable with the State (or would be if joined in the Third Party Claim), the Agency shall contribute to the amount of expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred and paid or payable by the State in such proportion as is appropriate to reflect the relative fault of the Agency on the one hand and of the State on the other hand in connection with the events which resulted in such expenses, judgments, fines or settlement amounts, as well as any other relevant equitable considerations. The relative fault of the Agency on the one hand and of the State on the other hand shall be determined by reference to, among other things, the parties' relative intent, knowledge, access to information and opportunity to correct or prevent the circumstances resulting in such expenses, judgments, fines or settlement amounts. The Agency's contribution amount in any instance is capped to the same extent it would have been capped under Oregon law if it had sole liability in the proceeding.

31. **Indemnification by Subcontractors**. Agency shall take all reasonable steps to cause its contractor(s), that are not units of local government as defined in ORS 190.003,if any, to indemnify, defend, save and hold harmless the State of Oregon and its officers, employees and agents ("Indemnitee") from and against any and all claims, actions, liabilities, damages, losses, or expenses (including attorneys' fees) arising from a tort (as now or hereafter defined in ORS 30.260) caused, or alleged to be caused, in whole or in part, by the negligent or willful acts or omissions of Agency's contractor or any of the officers, agents, employees or subcontractors of the contractor ("Claims"). It is the specific intention of the parties that the Indemnitee shall, in all instances, except for Claims arising solely from the negligent or willful acts or omissions of the Indemnitee, be indemnified by the contractor from and against any and all Claims.

32. **Stop-Work Order**. OHA may, at any time, by written notice to the Agency, require the Agency to stop all, or any part of the work required by this Agreement for a period of up to 90 days after the date of the notice, or for any further period to which the parties may agree through a duly executed amendment. Upon receipt of the notice, Agency shall immediately comply with the Stop-Work Order terms and take all necessary steps to minimize the incurrence of costs allocable to the work affected by the stop work order notice. Within a period of 90 days after issuance of the written notice, or within any extension of that period to which the parties have agreed, OHA shall either:

a. Cancel or modify the stop work order by a supplementary written notice; or

b. Terminate the work as permitted by either the Default or the Convenience provisions of Section 10, Termination.

If the Stop Work Order is canceled, OHA may, after receiving and evaluating a request by the Agency, make an adjustment in the time required to complete this Agreement and the Agreement price by a duly executed amendment.

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EXHIBIT C

Subcontractor Insurance Requirements

Local Government shall require its first-tier Contractor(s) (Contractor) that are not units of local government as defined in ORS 190.003, if any, to:

i) obtain the insurance specified under TYPES AND AMOUNTS and meet the requirements under ADDITIONAL INSURED, CONTINUOUS CLAIMS MADE COVERAGE, NOTICE OF CANCELLATION OR CHANGE, and CERTIFICATES OF INSURANCE before the Contractor(s) perform under contracts between Local Government and the Contractors (the "Subcontracts"), and

ii) maintain the insurance in full force throughout the duration of the Subcontracts. The insurance must be provided by insurance companies or entities authorized to transact the business of insurance and issue coverage in the State of Oregon and that are acceptable to Agency.

Local Government shall not authorize Contractors to begin work under the Subcontracts until the insurance is in full force. Thereafter, Local Government shall monitor continued compliance with the insurance requirements on an annual or more frequent basis. Local Government shall incorporate appropriate provisions in the Subcontracts permitting it to enforce Contractor compliance with the insurance requirements and shall take all reasonable steps to enforce such compliance. Examples of "reasonable steps" include issuing stop work orders (or the equivalent) until the insurance is in full force, terminating the Subcontracts as permitted by the Subcontracts, or pursuing legal action to enforce the insurance requirements. In no event, shall Local Government permit a Contractor to work under a Subcontract when the Local Government is aware that the Contractor is not in compliance with the insurance requirements. As used in this section, a "first-tier" Contractor is a Contractor with which the Local Government directly enters into a contract. It does not include a subcontractor with which the Contractor enters into a contract.

If Contractor maintains broader coverage and/or higher limits than the minimums shown in this insurance requirement exhibit, Agency requires and shall be entitled to the broader coverage and/or higher limits maintained by Contractor.

INSURANCE TYPES AND AMOUNTS

WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY:

All employers, including Contractor, that employ subject workers, as defined in ORS 656.027, shall comply with ORS 656.017 and shall provide Workers' Compensation Insurance coverage for those workers, unless they meet the requirement for an exemption under ORS 656.126(2). Contractor shall require and ensure that each of its subcontractors complies with these requirements. If Contractor is a subject employer, as defined in ORS 656.023, Contractor shall also obtain Employers' Liability Insurance coverage with limits not less than $500,000 each accident.

If Contractor is an employer subject to any other state's workers' compensation law, Contactor shall provide Workers' compensation Insurance coverage for its employees as required by applicable workers' compensation laws including Employers' Liability Insurance coverage with limits not less than $500,000 and shall require and ensure that each of its out-of-state subcontractors complies with these requirements.

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As applicable, Contractor shall obtain coverage to discharge all responsibilities and liabilities that arise out of or relate to the Jones Act with limits of no less than $5,000,000 and/or the Longshoremen's and Harbor Workers' Compensation Act.

COMMERCIAL GENERAL LIABILITY:
Contractor shall provide Commercial General Liability Insurance covering bodily injury and property damage in a form and with coverage that are satisfactory to the State of Oregon. This insurance must include personal and advertising injury liability, products and completed operations, contractual liability coverage for the indemnity provided under this Contract, and have no limitation of coverage to designated premises, project, or operation. Coverage must be written on an occurrence basis in an amount of not less than $1,000,000.00 per occurrence and not less than $2,000,000.00 annual aggregate limit.

AUTOMOBILE LIABILITY:
☒ **Required** ☐ **Not required**
Contractor shall provide Automobile Liability Insurance covering Contractor's business use including coverage for all owned, non-owned, or hired vehicles with a combined single limit of not less than $1,000,000.00 for bodily injury and property damage. This coverage may be written in combination with the Commercial General Liability Insurance (with separate limits for Commercial General Liability and Automobile Liability). Use of personal Automobile Liability Insurance coverage may be acceptable if evidence that the policy includes a business use endorsement is provided.

PROFESSIONAL LIABILITY:
☒ **Required** ☐ **Not required**
Contractor shall provide Professional Liability Insurance covering any damages caused by an error, omission or any negligent acts related to the services to be provided under the Contract/Subcontract by the Contractor and Contractor's subcontractors, agents, officers or employees in an amount not less than $1,000,000.00 per claim and not less than $1,000,000.00 annual aggregate limit.

If coverage is provided on a claims made basis, then either an extended reporting period of not less than 24 months shall be included in the Professional Liability Insurance coverage, or the Contractor and subcontractors shall provide continuous claims made coverage as stated below.

NETWORK SECURITY AND PRIVACY LIABILITY:
☐ **Required** ☒ **Not required**
Contractor shall provide Network Security and Privacy Liability Insurance for the duration of the sub/contract and for the period of time in which Contractor (or its business associates or subcontractor(s)) maintains, possesses, stores or has access to agency, State of Oregon or client data, whichever is longer, with a combined single limit of no less than $_____ per claim or incident. This insurance must include coverage for third party claims and for losses, thefts, unauthorized disclosures, access or use of agency or client data (which may include, but is not limited to, Personally Identifiable Information ("PII"), payment sard data and Protected Health Information ("PHI")) in any format, including coverage for accidental loss, theft, unauthorized disclosure access or use of agency, State of Oregon data.

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POLLUTION LIABILITY:
☐ **Required** ☒ **Not required**

Contractor shall provide Pollution Liability Insurance covering Contractor's or appropriate subcontractor's liability for bodily injury, property damage and environmental damage resulting from sudden accidental and gradual pollution and related cleanup costs incurred by Contractor, all arising out of the goods delivered or Services (including transportation risk) performed under this Contract/Subcontract is required. Combined single limit per occurrence shall not be less than $_____ and not be less than $_____ annual aggregate limit.
An endorsement to the Commercial General Liability or Automobile Liability policy, covering Contractor's or subcontractor' liability for bodily injury, property damage and environmental damage resulting from sudden accidental and gradual pollution and related clean-up cost incurred by the Contractor that arise from the goods delivered or Services (including transportation risk) performed by Contractor under this Contract/Subcontract is also acceptable.

EXCESS/UMBRELLA INSURANCE:
A combination of primary and Excess/Umbrella insurance may be used to meet the required limits of insurance. When used, all of the primary and Excess or Umbrella policies must provide all of the insurance coverages required herein, including, but not limited to, primary and non-contributory, additional insured, Self-Insured Retentions (SIRs), indemnity, and defense requirements. The Excess or Umbrella policies must be provided on a true "following form" or broader coverage basis, with coverage at least as broad as provided on the underlying insurance. No insurance policies maintained by the Additional Insureds, whether primary or Excess, and which also apply to a loss covered hereunder, are to be called upon to contribute to a loss until the Contractor's primary and Excess liability policies are exhausted.
If Excess/Umbrella insurance is used to meet the minimum insurance requirement, the Certificate of Insurance must include a list of all policies that fall under the Excess/Umbrella insurance.

ADDITIONAL COVERAGE REQUIREMENTS:
Contractor's insurance shall be primary and non-contributory with any other insurance. Contractor shall pay for all deductibles, self-insured retention (SIR), and self-insurance, if any.

ADDITIONAL INSURED:
All liability insurance, except for Workers' Compensation, Professional Liability, Directors and Officers Liablity and Network Security and Privacy Liability (if applicable), required under the Subcontract must include an Additional Insured Endorsement specifying the State of Oregon, its officers, employees and agents as Additional Insureds, including additional insured status with respect to liability arising out of ongoing operations and completed operations, but only with respect to Contractor's services to be performed under the Subcontract. Coverage must be primary and non-contributory with any other insurance and self-insurance.
Regarding Additional Insured status under the General Liability policy, the State of Oregon requires Additional Insured status with respect to liability rising out of ongoing operations and completed operations. The Additional Insured Endorsement with respect to liability arising out of Contractor's ongoing operations must be on or at least as broad as ISO Form CG 20 10 and the Additional Insured endorsement with respect to completed operations must be on or at least as broad as ISO form CG 20 37.

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WAIVER OF SUBROGATION:
Contractor shall waive rights of subrogation which Contractor or any insurer of Contractor may acquire against the Agency or State of Oregon by virtue of the payment of any loss. Contractor must obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the Agency or State of Oregon has received a waiver of subrogation endorsement from the Contractor or the Contractor's insurer(s).

CONTINUOUS CLAIMS MADE COVERAGE:
If any of the required liability insurance is on a claims made basis and does not include an extended reporting period of at least 24 months, then Contractor shall maintain Continuous Claims Made coverage, provided the effective date of the Continuous Claims Made coverage is on or before the effective date of the Contract, for a minimum of 24 months following the later of:

(i) Contractor's completion and Agency/Local Government's acceptance of all Services required under the Contract, or
(ii) Agency or Contractor's termination of this Contract, or
(iii) The expiration of all warranty periods provided under this Contract.

CERTIFICATE(S) AND PROOF OF INSURANCE:
Local Government shall obtain from the Contractor a Certificate(s) of Insurance for all required insurance before Contractor delivers any goods and performs any Services required under this Contract. The Certificate(s) must list the State of Oregon, its officers, employees, and agents as a certificate holder and as an endorsed Additional Insured. The Certificate(s) of Insurance must also include all required endorsements or copies of the applicable policy language effecting coverage required by this Contract. If Excess/Umbrella Insurance is used to meet the minimum insurance requirement, the Certificate of Insurance must include a list of all policies that fall under the Excess/Umbrella Insurance. As proof of insurance, Agency/Local Government has the right to request copies of insurance policies and endorsements relating to the insurance requirements in this Contract.

NOTICE OF CHANGE OR CANCELLATION:
The Contractor or its insurer must provide at least 30 days' written notice to Local Government before cancellation of, material change to, potential exhaustion of aggregate limits of, or non-renewal of the required insurance coverage(s).

INSURANCE REQUIREMENT REVIEW:
Contractor agrees to periodic review of insurance requirements by Agency/Local Government under this agreement and to provide updated requirements as mutually agreed upon by Contractor and Agency/Local Government.

STATE ACCEPTANCE:
All insurance providers are subject to Agency/Local Government acceptance. If requested by Agency/Local Government, Contractor shall provide complete copies of insurance policies, endorsements, self-insurance documents and related insurance documents to Agency/Local Government's representatives responsible for verification of the insurance coverages required under this Exhibit.

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EXHIBIT E
Financial Pages

MODIFICATION INPUT REVIEW REPORT

MOD#: M1228
CONTRACT#: 050110 CONTRACTOR: CROOK COUNTY - CHOICE
INPUT CHECKED BY: _____ DATE CHECKED: _____

SE#	FUND	PROJ CODE	CPMS PROVIDER	EFFECTIVE DATES	SLOT CHANGE/TYPE	RATE	OPERATING DOLLARS	STARTUP DOLLARS	PART ABC	PART IV	PAAF CD	BASE	CLIENT CODE	SP#
FISCAL YEAR: 2025-2026														
	BASE	CHOICE MODEL SERVICE												
6	804	CHOICE		7/1/2025 - 12/31/2025	0 /NA	$0.00	$32,261.99	$0.00	A	1		Y		
	BASE	CHOICE MODEL SERVICE												
6	804	CHOICE		7/1/2025 - 12/31/2025	0 /NA	$0.00	$1,698.00	$0.00	C	1		Y		1
					TOTAL FOR SE# 6		$33,959.99	$0.00						
					TOTAL FOR 2025-2026		$33,959.99	$0.00						
					TOTAL FOR M1228 050110		**$33,959.99**	**$0.00**						

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OREGON HEALTH AUTHORITY
Financial Assistance Award Amendment (FAAA)

CONTRACTOR: CROOK COUNTY - CHOICE Contract#: 050110
DATE: 07/01/2025 REF#: 000

REASON FOR FAAA (for information only):

Choice Model Services (MHS 06) funds have been awarded.

The following special condition(s) apply to funds as indicated by the special condition number in column 9. Each special condition set forth below may be qualified by a full description in the Financial Assistance Award.

M1228 1 These payments are for MHS 06 Choice Model Services performance payment.

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Confidential

CONTRACTOR TAX IDENTIFICATION INFORMATION

For Accounting Purposes Only

The State of Oregon requires contractors to provide their Federal Employer Identification Number (FEIN) or Social Security Number (SSN). This information is requested pursuant to ORS 305.385 and OAR 125-246-0330(2). Social Security numbers provided pursuant to this section will be used for the administration of state, federal andlocal tax laws. The State of Oregon may report this information to the Internal Revenue Service (IRS). Contractors must keep this information current at all times. Contractors arerequired to notify the State of Oregon contract administrator within 10 business days if this information changes. The State of Oregon reserves the right to ask contractors to update this information at any time during the document term.

Document number: 050110-0-0

Legal name *(tax filing)*: _____

DBA name *(if applicable)*: _____

Billing address: _____

City: _____ _____ _____

Phone: _____

FEIN: _____

- OR -

SSN: _____

Certificate Of Completion

Envelope Id: B8B1E4C6-F551-449C-A3AE-C5D0642D9FAD
Status: Sent
Subject: PO-44300-00050110-0 Crook County
Source Envelope:
Document Pages: 43
Signatures: 0
Envelope Originator:
Certificate Pages: 4
Initials: 0
Larry Briggs
AutoNav: Enabled
Larry.O.Briggs@odhsoha.oregon.gov
EnvelopeId Stamping: Enabled
IP Address: 209.112.107.133
Time Zone: (UTC-08:00) Pacific Time (US & Canada)

Record Tracking

Status: Original
7/25/2025 1:04:51 PM
Holder: Larry Briggs
Larry.O.Briggs@odhsoha.oregon.gov
Location: DocuSign
Security Appliance Status: Connected
Pool: StateLocal
Storage Appliance Status: Connected
Pool: Carahsoft OBO Oregon Health Authority - CLM
Location: Docusign

Signer Events	Signature	Timestamp

Security Level: Email, Account Authentication (None)

Electronic Record and Signature Disclosure:
Not Offered via Docusign

Jon Collins
jon.c.collins@oha.oregon.gov
Security Level: Email, Account Authentication (None)

Electronic Record and Signature Disclosure:
Not Offered via Docusign

Ebony Clarke
ebony.s.clarke@oha.oregon.gov
Security Level: Email, Account Authentication (None)

Electronic Record and Signature Disclosure:
Not Offered via Docusign

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp
Alex Solterbeck		Sent: 7/25/2025 1:07:18 PM
alex.solterbeck@crookcountyor.gov		Viewed: 7/28/2025 8:34:35 AM
Security Level: Email, Account Authentication (None)		

Electronic Record and Signature Disclosure:
Accepted: 7/28/2025 8:34:35 AM
ID: 59d3cf40-ef8a-49e5-862a-884c65485656

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp
Eric Blaine Eric.Blaine@CrookCountyOR.gov Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via Docusign	COPIED	Sent: 7/25/2025 1:07:17 PM
BHD.Contracts@oha.oregon.gov BHD.Contracts@oha.oregon.gov Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via Docusign		
Michael Oyster Michael.W.Oyster@oha.oregon.gov Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via Docusign		
Theresa Naegeli theresa.a.naegeli@oha.oregon.gov Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via Docusign		

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	7/25/2025 1:07:18 PM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

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Consequences of changing your mind

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How to contact Carahsoft OBO Oregon Health Authority - CLM:

You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:
To contact us by email send messages to: mick.j.kincaid@oha.oregon.gov

To advise Carahsoft OBO Oregon Health Authority - CLM of your new email address

To let us know of a change in your email address where we should send notices and disclosures electronically to you, you must send an email message to us at mick.j.kincaid@oha.oregon.gov and in the body of such request you must state: your

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To request delivery from us of paper copies of the notices and disclosures previously provided by us to you electronically, you must send us an email to mick.j.kincaid@oha.oregon.gov and in the body of such request you must state your email address, full name, mailing address, and telephone number. We will bill you for any fees at that time, if any.

To withdraw your consent with Carahsoft OBO Oregon Health Authority - CLM

To inform us that you no longer wish to receive future notices and disclosures in electronic format you may:

i. decline to sign a document from within your signing session, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;

ii. send us an email to mick.j.kincaid@oha.oregon.gov and in the body of such request you must state your email, full name, mailing address, and telephone number. We do not need any other information from you to withdraw consent.. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process..

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To confirm to us that you can access this information electronically, which will be similar to other electronic notices and disclosures that we will provide to you, please confirm that you have read this ERSD, and (i) that you are able to print on paper or electronically save this ERSD for your future reference and access; or (ii) that you are able to email this ERSD to an email address where you will be able to print on paper or save it for your future reference and access. Further, if you consent to receiving notices and disclosures exclusively in electronic format as described herein, then select the check-box next to ‘I agree to use electronic records and signatures’ before clicking ‘CONTINUE’ within the DocuSign system.

By selecting the check-box next to ‘I agree to use electronic records and signatures’, you confirm that:

- You can access and read this Electronic Record and Signature Disclosure; and
- You can print on paper this Electronic Record and Signature Disclosure, or save or send this Electronic Record and Disclosure to a location where you can print it, for future reference and access; and
- Until or unless you notify Carahsoft OBO Oregon Health Authority - CLM as described above, you consent to receive exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you by Carahsoft OBO Oregon Health Authority - CLM during the course of your relationship with Carahsoft OBO Oregon Health Authority - CLM.

In compliance with the Americans with Disabilities Act, this document is available in alternate formats such as Braille, large print, audio recordings, Web-based communications and other electronic formats. To request an alternate format, please send an e-mail to *dhs-oha.publicationrequest@state.or.us* or call 503-378-3486 (voice) or 503-378-3523 (TTY) to arrange for the alternative format.

Agreement #185807

AMENDMENT TO OREGON HEALTH AUTHORITY 2025-2027 INTERGOVERNMENTAL AGREEMENT FOR THE FINANCING OF PUBLIC HEALTH SERVICES

This Second Amendment to Oregon Health Authority 2025-2027 Intergovernmental Agreement for the Financing of Public Health Services, effective July 1, 2025, (as amended the "Agreement"), is between the State of Oregon acting by and through its Oregon Health Authority ("OHA") and Crook County, ("LPHA"), the entity designated, pursuant to ORS 431.003, as the Local Public Health Authority for Crook County. OHA and LPHA are each a "Party" and together the "Parties" to the Agreement.

RECITALS

WHEREAS, OHA and LPHA wish to modify the set of Program Element Description(s) set forth in Exhibit B of the Agreement

WHEREAS, OHA and LPHA wish to modify the Financial Assistance Award set forth in Exhibit C of the Agreement.

WHEREAS, OHA and LPHA wish to modify information required by 2 CFR Subtitle B with guidance at 2 CFR Part 200 as set forth in Exhibit J of the Agreement;

NOW, THEREFORE, in consideration of the premises, covenants and agreements contained herein and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

AGREEMENT

1. This Amendment is effective on **August 1, 2025**, regardless of the date this amendment has been fully executed with signatures by every Party and when required, approved by the Department of Justice. However, payments may not be disbursed until the Amendment is fully executed.

2. The Agreement is hereby amended as follows:

- **a.** Exhibit B Program Element #03 "Tuberculosis Services" is hereby superseded and replaced and Program Element #13 "Tobacco Prevention education Program (TPEP) by Attachment A attached hereto and incorporated herein by this reference.
- **b.** Exhibit C, Section 1 of the Agreement, entitled "Financial Assistance Award" is hereby superseded and replaced in its entirety by Attachment B, entitled "Financial Assistance Award", attached hereto and incorporated herein by this reference. Attachment B must be read in conjunction with Section 2 of Exhibit C.
- **c.** Exhibit J of the Agreement entitled "Information required by 2 CFR Subtitle B with guidance at 2 CFR Part 200" is amended to add to the federal award information datasheet as set forth in Attachment C, attached hereto and incorporated herein by this reference.

3. LPHA represents and warrants to OHA that the representations and warranties of LPHA set forth in Section 4 of Exhibit F of the Agreement are true and correct on the date hereof with the same effect as if made on the date hereof.

4. Capitalized words and phrases used but not defined herein shall have the meanings ascribed thereto in the Agreement.

5. Except as amended hereby, all terms and conditions of the Agreement remain in full force and effect.

6. This Amendment may be executed in any number of counterparts, all of which when taken together shall constitute one agreement binding on all parties, notwithstanding that all parties are not signatories to the same counterpart. Each copy of this Amendment so executed shall constitute an original.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment as of the dates set forth below their respective signatures.

7. Signatures.

STATE OF OREGON, ACTING BY AND THROUGH ITS OREGON HEALTH AUTHORITY

Approved by: _____

Name: /for/ Nadia A. Davidson

Title: Director of Finance

Date: _____

CROOK COUNTY LOCAL PUBLIC HEALTH AUTHORITY

Approved by: _____

Printed Name: _____

Title: _____

Date: _____

DEPARTMENT OF JUSTICE – APPROVED FOR LEGAL SUFFICIENCY

Agreement form group-approved by Devon Thorson, Senior Assistant Attorney General, Tax and Finance Section, General Counsel Division, Oregon Department of Justice by email on August 11, 2025, copy of email approval in Agreement file.

REVIEWED BY OHA PUBLIC HEALTH ADMINISTRATION

Reviewed by: _____

Name: Rolonda Widenmeyer (or designee)

Title: Program Support Manager

Date: _____

Attachment A
Exhibit B - Program Element Description(s)

Program Element #03: Tuberculosis Services

OHA Program Responsible for Program Element:

Public Health Division/Center for Public Health Practice/HIV, STD and TB Section

1. Description.

Funds provided under this Agreement for this Program Element may only be used in accordance with, and subject to, the requirements and limitations set forth below, to deliver Tuberculosis Services.

ORS 433.006 and OAR 333-019-0000 assign responsibility to LPHA for Tuberculosis ("TB") investigations and implementation of TB control measures within LPHA's service area. The funds provided for TB Case Management Services (including contact investigation) and B-waiver Follow-Up under the Agreement for this Program Element may only be used as supplemental funds to support LPHA's TB investigation and control efforts and are not intended to be the sole funding for LPHA's TB investigation and control program.

Pulmonary tuberculosis is an infectious disease that is airborne. Treatment for TB disease must be provided by Directly Observed Therapy to ensure the patient is cured and prevent drug resistant TB. Screening and treating Contacts stops disease transmission. Tuberculosis prevention and control is a priority in order to protect the population from communicable disease and is included in the State Health Improvement Plan (SHIP).

This Program Element, and all changes to this Program Element are effective the first day of the month noted in the Issue Date section of Exhibit C Financial Assistance Award unless otherwise noted in Comments and Footnotes of Exhibit C of the Financial Assistance Award.

2. Definitions Specific to TB Services

a. **Active TB Disease:** TB disease in an individual whose immune system has failed to control his or her TB infection and who has become ill with Active TB Disease, as determined in accordance with the Centers for Disease Control and Prevention's (CDC) laboratory or clinical criteria for Active TB Disease and based on a diagnostic evaluation of the individual.

b. **Appropriate Therapy:** Current TB treatment regimens recommended by the CDC, the American Thoracic Society, the Academy of Pediatrics, and the Infectious Diseases Society of America.

c. **Associated Cases:** Additional Cases of TB disease discovered while performing a Contact investigation.

d. **B-waiver Immigrants:** Immigrants or refugees screened for TB prior to entry to the U.S. and found to have TB disease Latent TB Infection, or an abnormal chest x-ray finding suggestive of TB with negative sputum smears and culture results.

e. **B-waiver Follow-Up:** B-waiver Follow-Up includes initial attempts by the LPHA to locate the B- waiver immigrant. If located, LPHA proceeds to coordinate or provide TB medical evaluation and treatment as needed. Updates on status are submitted regularly by LPHA using Electronic Disease Network (EDN) or the follow-up worksheet.

f. **Case:** A Case is an individual, whose illness is confirmed to be Active TB Disease or, whose illness meets defining criteria published in OHA's Tuberculosis Investigative Guidelines. This diagnosis may be based on signs, symptoms, and/or laboratory findings.

g. **Cohort Review:** A systematic review of the management of patients with TB disease and their Contacts. The "cohort" is a group of TB Cases counted (confirmed as Cases) over 3 months. The Cases are reviewed 6-9 months after being counted to ensure they have completed treatment or are nearing the end. Details of the management and outcomes of TB Cases are reviewed in a group with the information presented by the case manager.

h. **Contact:** An individual who was significantly exposed to an infectious Case of Active TB Disease.

i. **Directly Observed Therapy (DOT):** LPHA staff (or other person appropriately designated by the LPHA) observes an individual with TB disease swallowing each dose of TB medication to assure adequate treatment and prevent the development of drug resistant TB. May be completed in person or by video (VDOT, eDOT) or other technology deemed appropriate by OHA.

j. **Evaluated (in context of Contact investigation):** A Contact received a complete TB symptom review and tests as described in the definition of Medical Evaluation, below, or in the OHA Tuberculosis Investigative Guidelines.

k. **Interjurisdictional Transfer**: A Suspected Case, TB Case or Contact transferred for follow-up evaluation and care from another jurisdiction either within or outside of Oregon.

l. **Investigative Guidelines:** OHA guidelines, which are incorporated herein by this reference are available for review at: http://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/Tuberculosis/Documents/investigativeguide.pdf.

m. **Latent TB Infection (LTBI):** TB infection in a person whose immune system is keeping the TB infection under control. LTBI is also referred to as TB in a dormant stage.

n. **Medical Evaluation:** A complete medical examination of an individual for TB including a medical history, physical examination, TB skin test or interferon gamma release assay, chest x-ray, and any appropriate molecular, bacteriologic, histologic examinations.

o. **Suspected Case of Active TB Disease:** A Suspected Case of Active TB Disease, is an individual whose illness is thought by a health care provider, to be Active TB Disease or whose illness meets defining criteria published in OHA's Tuberculosis Investigative Guidelines. This suspicion may be based on signs, symptoms, or laboratory findings.

p. **TB Case Management Services:** Dynamic and systematic management of a Case of Active TB Disease where a person, known as a TB Case manager, is assigned responsibility for the management of an individual TB Case to ensure completion of treatment. TB Case Management Services requires a collaborative approach to providing and coordinating health care services for the individual. The Case manager is responsible for ensuring adequate TB treatment, coordinating care as needed, providing patient education and counseling, performing Contact investigations and following infected Contacts through completion of treatment, identifying barriers to care and implementing strategies to remove those barriers.

3. Alignment with Modernization Foundational Programs and Foundational Capabilities.

The activities and services that the LPHA has agreed to deliver under this Program Element align with Foundational Programs and Foundational Capabilities and the public health accountability metrics (if applicable), as follows (see Public Health Modernization Manual at http://www.oregon.gov/oha/PH/ABOUT/TASKFORCE/Documents/public_health_modernization_manual.pdf:

a. Foundational Programs and Capabilities (As specified in Public Health Modernization Manual)

Program Components	**Foundational Program**					**Foundational Capabilities**						
	CD Control	Prevention and health promotion	Environmental health	Access to clinical preventive services: Population Health	Access to clinical preventive services: Direct services	Leadership and organizational competencies	Health equity and cultural responsiveness	Community Partnership Development	Assessment and Epidemiology	Policy & Planning	Communications	Emergency Preparedness and Response
Asterisk (*) = Primary foundational program that aligns with each component *X = Other applicable foundational programs*						*X = Foundational capabilities that align with each component*						
TB Case Management Services	*					**X**	**X**		**X**			
TB Contact Investigation and Evaluation	*						**X**		**X**			
Participation in TB Cohort Review	*						**X**					
Evaluation of B-waiver Immigrants	*						**X**		**X**			

b. The work in this Program Element helps Oregon's governmental public health system achieve the following Public Health Accountability Metrics, Health Outcome Indicators:

Not applicable

c. The work in this Program Element helps Oregon's governmental public health system achieve the following Public Health Accountability Metrics, LPHA Process Measure:

Not applicable

4. Procedural and Operational Requirements.

By accepting fee-for-service (FFS) funds to provide TB Case Management Services or B-waiver Follow-Up, LPHA agrees to conduct activities in accordance with the following requirements:

a. LPHA must include the following minimum TB services in its TB investigation and control program if that program is supported in whole or in part with funds provided under this Agreement: TB Case Management Services, as defined above and further described below and in OHA's Investigative Guidelines.

b. LPHA will receive $3500 for each new case of Active TB disease counted in Oregon and documented in Orpheus for which the LPHA provides TB Case Management Services. LPHA will receive $300 for each new B-waiver Follow-Up.

c. **TB Case Management Services.** LPHA's TB Case Management Services must include the following minimum components:

(1) LPHA must investigate and monitor treatment for each Case and Suspected Case of Active TB Disease identified by or reported to LPHA whose residence is in LPHA's jurisdiction, to confirm the diagnosis of TB and ensure completion of adequate therapy.

(2) LPHA must require individuals who reside in LPHA's jurisdiction and who LPHA suspects of having Active TB Disease, to receive appropriate Medical Evaluations and laboratory testing to confirm the diagnosis of TB and response to therapy, through the completion of treatment. LPHA must assist in arranging the laboratory testing and Medical Evaluation, as necessary.

(3) LPHA must provide medication for the treatment of TB disease to all individuals who reside in LPHA's jurisdiction and who have TB disease but who do not have the means to purchase TB medications or for whom obtaining or using identified means is a barrier to TB treatment compliance. LPHA must monitor, at least monthly and in person, individuals receiving medication(s) for adherence to treatment guidelines, medication side effects, and clinical response to treatment.

(4) DOT (including VDOT or eDOT) is the standard of care for the treatment of TB disease. Cases of TB disease should be treated via DOT. If DOT is not utilized, OHA's TB Program must be consulted.

(5) OHA's TB Program must be consulted prior to initiation of any TB treatment regimen which is not recommended by the most current CDC, American Thoracic Society and Infectious Diseases Society of America TB treatment guideline.

(6) LPHA may assist the patient in completion of treatment for TB disease by utilizing the below methods. Methods to ensure adherence should be documented.

(a) Proposed interventions for assisting the individual to overcome obstacles to treatment adherence (e.g. assistance with transportation).

(b) Proposed use of incentives and enablers to encourage the individual's compliance with the treatment plan.

(7) With respect to each Case of TB disease within LPHA's jurisdiction that is identified by or reported to LPHA, LPHA must perform a Contact investigation to identify Contacts, Associated Cases and source of infection. The LPHA must evaluate all located Contacts or confirm that all located Contacts were advised of their risk for TB infection and disease.

(8) LPHA must offer or advise each located Contact identified with TB infection or disease, or confirm that all located Contacts were offered or advised, to take Appropriate Therapy and must monitor each Contact who starts treatment through the completion of treatment (or discontinuation of treatment).

d. If LPHA receives in-kind resources under this Agreement in the form of medications for treating TB, LPHA must use those medications to treat individuals for TB. In the event of a non-TB related emergency (i.e. meningococcal contacts), with notification to TB Program, the LPHA may use these medications to address the emergent situation.

e. LPHA must present TB Cases through participation in the quarterly Cohort Review. If the LPHA is unable to present the Case at the designated time, other arrangements must be made in collaboration with OHA.

f. LPHA must accept B-waiver Immigrants and Interjurisdictional Transfers for Medical Evaluation and follow-up, as appropriate for LPHA capabilities.

g. If LPHA contracts with another person to provide the services required under this Program Element, the in-kind resources in the form of medications received by LPHA from OHA must be provided, free of charge, to the contractor for the purposes set out in this Program Element and the contractor must comply with all requirements related to such medications unless OHA informs LPHA in writing that the medications cannot be provided to the contractor. The LPHA must document the medications provided to a contractor under this Program Element.

h. OHA, through CDC Tuberculosis Elimination and Laboratory Cooperative Agreement, will provide in-kind services to LPHAs through technical assistance, clinical consultation, and laboratory related to TB disease and latent TB infection

i. If LPHA self-certifies as a 340B TB clinic site and receives reimbursement for 340B medications from OHA, it is the sole responsibility of LPHA to comply with all HRSA regulations and requirements for 340B Drug Pricing Program Covered Entities.

j. Any 340B cost savings or program income realized because of funding from this Agreement must be used in a manner consistent with the goals of the grant or program under which it was authorized; i.e., any cost saving resulting from CDC TB funding must be used to increase, enhance, and support TB screening and treatment services.

5. General Revenue and Expense Reporting.

In lieu of the LPHA completing an "Oregon Health Authority Public Health Division Expenditure and Revenue Report" located in Exhibit C of this Agreement, OHA-PHD will send a pre-populated invoice to the LPHA for review and signature on or before the 5th business day of the month following the end of the first, second, third and fourth fiscal year quarters. The LPHA must submit the signed invoice no later than 30 calendar days after receipt of the invoice from OHA-PHD. The invoice will document the number of new Active TB cases and/or B-waiver Follow-Ups for which the LPHA provided services in the previous quarter. Pending approval of the invoice, OHA- PHD will remit FFS funds to LPHA. Funds under this program element will not be paid in advance or on a 1/12th schedule.

6. Program Reporting Requirements.

LPHA must prepare and submit the following reports to OHA:

a. LPHA must notify OHA's TB Program of each Case or Suspected Case of Active TB Disease identified by or reported to LPHA no later than 5 business days within receipt of the report (OR – within 5 business days of the initial case report), in accordance with the standards established pursuant to OAR 333-018-0020. In addition, LPHA must, within 5 business days of a status change of a Suspected Case of TB disease previously reported to OHA, notify OHA of the change. A change in status occurs when a Suspected Case is either confirmed to have TB disease or determined not to have TB disease. LPHA must utilize OHA's ORPHEUS TB case module for this purpose using the case reporting instructions located at https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/TUBER CULOSIS/Pages/tools.aspx . After a Case of TB disease has concluded treatment, case completion information must be entered into the ORPHEUS TB case module within 5 business days of conclusion of treatment.

b. LPHA must submit data regarding Contact investigations via ORPHEUS or other mechanism deemed acceptable by OHA. Contact investigations are not required for strictly extrapulmonary cases.

7. Performance Measures.

If LPHA uses funds provided under this Agreement to support its TB investigation and control program, LPHA must operate its program in a manner designed to achieve the following national TB performance goals:

a. For patients with newly diagnosed TB disease for whom 12 months or less of treatment is indicated, **92.0% will complete treatment within 12 months**.

b. For TB patients with positive acid-fast bacillus (AFB) sputum-smear results, **100.0% (of patients) will be interviewed to elicit Contacts.**

c. For Contacts of sputum AFB smear-positive TB Cases, **90.0% will be evaluated for infection and disease.**

d. For Contacts of sputum AFB smear-positive TB Cases with newly diagnosed LTBI, **92.0% will start treatment.**

e. For Contacts of sputum AFB smear-positive TB Cases that have started treatment for newly diagnosed LTBI, **93.0% will complete treatment**.

f. For TB Cases in patients ages 12 years or older with a pleural or respiratory site of disease, **98% will have a sputum culture result reported.**

Program Element #13: Tobacco Prevention Education Program (TPEP)

OHA Program Responsible for Program Element:

Public Health Division/Center for Health Prevention & Health Promotion/ Health Promotion and Chronic Disease Prevention Section

1. Description.

Funds provided under this Agreement for this Program Element may only be used in accordance with, and subject to, the requirements and limitations set forth below, to deliver the Tobacco Prevention Education Program (TPEP). As described in the local program plan, permitted activities are in the following areas:

a. **Facilitation of Community and Statewide Partnerships:** Accomplish movement toward tobacco-free communities through a coalition or other group dedicated to the pursuit of agreed upon local and statewide tobacco control objectives. Community partnerships should include local public health leadership, health system partners, non-governmental entities as well as community leaders.

(1) TPEP program should demonstrate ability to mobilize timely community support for local tobacco prevention objectives.

(2) TPEP program should be available and ready to respond to statewide policy opportunities and threats.

b. **Creating Tobacco-Free Environments:** Promote the adoption of tobacco-free policies, including policies in schools, workplaces and public places. Demonstrate community progress towards establishing jurisdiction-wide tobacco-free policies (e.g. local ordinances) for workplaces that still allow indoor smoking or expose employees to secondhand smoke. Establish tobacco-free policies for all county and city properties and government campuses.

c. **Countering Pro-Tobacco Influences:** Reduce the promotion of tobacco in retail environments by educating and aligning decision-makers about policy options for addressing the time, place and manner tobacco products are sold. Counter tobacco industry advertising and promotion. Reduce youth access to tobacco products, including advancing tobacco retail licensure and other evidence-based point of sale strategies.

d. **Promoting Quitting Among Adults and Youth:** Promote evidence-based practices for tobacco cessation with health system partners and implementation of Health Evidence Review Commission initiatives, including cross-sector interventions. Integrate the promotion of the Oregon Tobacco Quit Line into other tobacco control activities.

e. **Enforcement:** Assist OHA with the enforcement of statewide tobacco control laws, including the Oregon Indoor Clean Air Act, minors' access to tobacco and restrictions on smoking through formal agreements with OHA, Public Health Division.

f. **Reducing the Burden of Tobacco-Related Chronic Disease:** Address tobacco use reduction strategies in the broader context of chronic diseases and other risk factors for tobacco-related chronic diseases including cancer, asthma, cardiovascular disease, diabetes, arthritis, and stroke. Ensure Local Public Health Authority (LPHA) decision-making processes are based on data highlighting local, statewide and national tobacco-related disparities. Ensure processes engage a wide variety of perspectives from those most burdened by tobacco including representatives of racial/ethnic minorities, Medicaid users, LGBTQ community members, and people living with disabilities, including mental health and substance use challenges.

The statewide Tobacco Prevention and Education Program (TPEP) is grounded in evidence-based best practices for tobacco control. The coordinated movement involves state and local programs working together to achieve sustainable policy, systems and environmental change in local communities that mobilize statewide. Tobacco use remains the number one cause of preventable death in Oregon and nationally. It is a major risk factor in developing asthma, arthritis, diabetes, stroke, tuberculosis and ectopic pregnancy, as well as liver, colorectal and other forms of cancer. It also worsens symptoms for people already living with chronic diseases.

Funds provided under this Agreement are to be used to reduce exposure to secondhand smoke, prevent youth from using tobacco, promote evidence-based practices for tobacco cessation, educate decision-makers about the harms of tobacco, and limit the tobacco industry's influence in the retail environment. Funds allocated to Local Public Health Authorities are to complement the statewide movement towards population-level outcomes including reduced tobacco disparities.

This Program Element, and all changes to this Program Element are effective the first day of the month noted in the Issue Date of Exhibit C of the Financial Assistance Award unless otherwise noted in Comments and Footnotes of Exhibit C of the Financial Assistance Award.

2. Definitions Specific to Tobacco Prevention Education Program (TPEP).

Oregon Indoor Clean Air Act (ICAA) (also known as the Smokefree Workplace Law) protects workers and the public from secondhand smoke exposure in public, in the workplace, and within 10 feet of all entrances, exits, accessibility ramps that lead to and from an entrance or exit, windows that open and air-intake vents. The ICAA includes the use of "inhalant delivery systems." Inhalant delivery systems are devices that can be used to deliver nicotine, cannabinoids and other substances, in the form of a vapor or aerosol. These include e-cigarettes, vape pens, e-hookah and other devices. Under the law, people may not use e-cigarettes and other inhalant delivery systems in workplaces, restaurants, bars and other indoor public places in Oregon.

3. Alignment with Modernization Foundational Programs and Foundational Capabilities.

The activities and services that the LPHA has agreed to deliver under this Program Element align with Foundational Programs and Foundational Capabilities and the public health accountability metrics (if applicable), as follows (see Public Health Modernization Manual at, http://www.oregon.gov/oha/PH/ABOUT/TASKFORCE/Documents/public_health_modernization_manual.pdf:

a. Foundational Programs and Capabilities (As specified in Public Health Modernization Manual)

Program Components	Foundational Program					Foundational Capabilities						
	CD Control	Prevention and health promotion	Environmental health	Access to clinical preventive services		Leadership and organizational competencies	Health equity and cultural responsiveness	Community Partnership Development	Assessment and Epidemiology	Policy & Planning	Communications	Emergency Preparedness and Response
				Population Health	Direct services							

Asterisk (*) = Primary foundational program that aligns with each component *X = Other applicable foundational programs*						*X = Foundational capabilities that align with each component*						
Facilitation of Community Partnerships		*		X		X	X	X	X	X	X	
Creating Tobacco-free Environments		*		X		X	X	X	X	X	X	
Countering Pro-Tobacco Influences		*				X	X	X	X	X	X	
Promoting Quitting Among Adults and Youth		X		*		X	X	X	X	X	X	
Enforcement		*	X			X	X	X	X	X	X	
Reducing the Burden of Tobacco-Related Chronic Disease		*		X		X	X	X	X	X	X	

b. The work in this Program Element helps Oregon's governmental public health system achieve the following Public Health Accountability Metrics, Health Outcome Indicators:

Not applicable

c. The work in this Program Element helps Oregon's governmental public health system achieve the following Public Health Accountability Metrics, LPHA Process Measures:

Not applicable

4. Procedural and Operational Requirements.

By accepting and using the Financial Assistance awarded under this Agreement and for this Program Element, LPHA agrees to conduct activities in accordance with the following requirements:

a. Submit local program plan and local program budget to OHA for approval at a time determined by OHA. OHA will supply the required format and current service data for use in completing the plans.

Local program budget may include direct, evidence-based or culturally appropriate cessation delivery including the provision of Nicotine Replacement Therapy (NRT), but may not include other treatment services, other disease control programs, or other efforts not devoted to tobacco prevention and education.

b. Engage in activities as described in its local program plan, which has been approved by OHA and is incorporated herein with this reference. Modifications to the plans may only be made with OHA approval.

c. Ensure that LPHA leadership is appropriately involved and its local tobacco program is staffed at the appropriate level, depending on its level of funding, as specified in the award of funds for this Program Element.

d. Use funds for this Program Element in accordance with its local program budget, which has been approved by OHA and incorporated herein with this reference. Modifications to the local program budget may only be made with OHA approval.

e. Attend all TPEP meetings reasonably required by OHA.

f. Comply with OHA's TPEP Guidelines and Policies.

g. Coordinate its TPEP activities and collaborate with other entities receiving TPEP funds or providing TPEP services.

h. In the event of any omission from, or conflict or inconsistency between, the provisions of the local program plan and local program budget on file at OHA, and the provisions of the Agreement and this Program Element, the provisions of this Agreement and this Program Element shall control.

5. General Revenue and Expense Reporting.

LPHA must complete an "Oregon Health Authority Public Health Division Expenditure and Revenue Report" located in Exhibit C of this Agreement. A separate report must be filed for each applicable Program Element and any sub-elements. These reports must be submitted to OHA each quarter on the following schedule:

Fiscal Quarter	Due Date
First: July 1 – September 30	October 30
Second: October 1 – December 31	January 30
Third: January 1 – March 31	April 30
Fourth: April 1 – June 30	August 20

6. Program Reporting Requirements.

LPHA must submit local program plan reports on a semi-annual schedule to be reviewed by OHA. The reports must include, at a minimum, LPHA's progress during the reporting period towards completing activities described in its local program plan. Upon request by OHA, LPHA must also submit reports that detail quantifiable outcomes of activities and data accumulated from community-based assessments of tobacco use. LPHA leadership and program staff must participate in reporting interviews on a schedule to be determined by OHA and LPHA.

7. Performance Measures.

If LPHA completes fewer than 75% of the planned activities in its local program plan for two consecutive reporting periods in one state fiscal year, LPHA will not be eligible to receive funding under this Program Element during the next state fiscal year.

Attachment B
Exhibit C - Financial Assistance Award

State of Oregon Oregon Health Authority Public Health Division		
1) Grantee	**2) Issue Date**	**This Action**
Name: Crook County	Friday, August 1, 2025	Amendment
Street: 375 NE Beaver St., Suite 100		FY 2026
City: Prineville	**3) Award Period**	
State: OR Zip: 97754-1802	From July 1, 2025 through June 30, 2026	

4) OHA Public Health Funds Approved

Number	Program	Previous Award Balance	Increase / Decrease	Current Award Balance
PE01-01	State Support for Public Health	$6,956.75	$0.00	$6,956.75
PE01-12	ACDP Infection Prevention Training	$1,517.82	$0.00	$1,517.82
PE03	Tuberculosis Case Management	$3,800.00	$0.00	$3,800.00
PE12-01	Public Health Emergency Preparedness and Response (PHEP)	$69,351.00	($19,418.00)	$49,933.00
PE13	Tobacco Prevention and Education Program (TPEP)	$0.00	$250,000.14	$250,000.14
PE36	Alcohol & Drug Prevention Education Program (ADPEP)	$61,250.00	$0.00	$61,250.00
PE36-01	OSPTR Board Primary Prevention Funding	$48,412.00	$1,329.00	$49,741.00
PE40-01	WIC NSA: July - September	$48,296.00	$0.00	$48,296.00
PE40-02	WIC NSA: October - June	$144,889.00	$0.00	$144,889.00
PE40-05	Farmer's Market	$1,580.00	$0.00	$1,580.00
PE42-03	MCAH Perinatal General Funds & Title XIX	$6,408.00	$0.00	$6,408.00
PE42-04	MCAH Babies First! General Funds	$7,124.00	$0.00	$7,124.00
PE42-11	MCAH Title V	$22,079.00	$0.00	$22,079.00
PE42-12	MCAH Oregon Mothers Care Title V	$8,579.00	$0.00	$8,579.00
PE43-01	Public Health Practice (PHP) - Immunization Services	$10,817.00	$0.00	$10,817.00

4) OHA Public Health Funds Approved

Number	Program	Previous Award Balance	Increase / Decrease	Current Award Balance
PE44-01	SBHC Base	$60,000.00	$0.00	$60,000.00
PE44-02	SBHC - Mental Health Expansion	$113,236.00	$0.00	$113,236.00
PE46-05	RH Community Participation & Assurance of Access	$17,043.00	$0.00	$17,043.00
PE50	Safe Drinking Water (SDW) Program (Vendors)	$40,665.45	$0.00	$40,665.45
PE51-01	LPHA Leadership, Governance and Program Implementation	$303,486.00	$0.00	$303,486.00
PE62	Overdose Prevention-Counties	$142,076.00	$0.00	$142,076.00
PE81-01	HIV/STI Statewide Services (HSSS) Federal Funds	$9,047.00	$0.00	$9,047.00
PE81-02	HIV/STI Statewide Services (HSSS) Program Income	$43,857.00	$0.00	$43,857.00
		$1,170,470.02	$231,911.14	$1,402,381.16

5) Foot Notes:

PE01-01	07/2025: funding available 7/1/25-9/30/25 only.
PE40-01	07/2025: funds available 7/1/25-9/30/2025 only
PE40-02	07/2025: funds available 10/1/25-6/30/26 only
PE42-11	07/2025: Indirect rate caps at 10%.
PE42-12	07/2025: Indirect rate caps at 10%.

6) Comments:

PE36	08/2025: Prior comment null and void 07/2025: $15,312.50 available 7/1/25 - 9/30/25 only.
PE36-01	08/2025: Increase of SFY26 funds of $1,329 per grantee request 07/2025: rollover unspent SFY25 funds of $48,412
PE62	07/2025: $43,297 available 7/1/25-8/31/2025 only (including $30,000 rollover from SFY25); $5,382 available 7/1/25-9/30/25 only; $66,485 available 9/1/2025-6/30/2026 only; $26,912 available 10/1/2025-6/30/2026 only
PE81-01	07/2025: $8,293 available 7/1/25-5/31/26 only; $754 available 6/1/26-6/30/26 only

7) Capital outlay Requested in this action:

Prior approval is required for Capital Outlay. Capital Outlay is defined as an expenditure for equipment with a purchase price in excess of $5,000 and a life expectancy greater than one year.

Program	Item Description	Cost	PROG APPROV	

Attachment C

Exhibit J - Information required by CFR Subtitle B with guidance at 2 CFR Part 200

PE12-01 Public Health Emergency Preparedness and Response (PHEP)

Federal Award Identification Number:	NU90TU000054
Federal Award Date:	06/26/25
Budget Performance Period:	07/01/25-06/30/26
Awarding Agency:	CDC
CFDA Number:	93.069
CFDA Name:	PHEP
Total Federal Award:	631,089
Project Description:	PHEP Cooperative Agreement
Awarding Official:	Rachel Forche
Indirect Cost Rate:	16.96
Research and Development (T/F):	FALSE
HIPPA	No

Agency	UEI	Amount	Grand Total:
Crook	W2NEWLAM2YM6	$49,933.00	$49,933.00

BYLAWS OF THE
CROOK COUNTY COMMUNITY HEALTH ADVISORY COUNCIL

ARTICLE I – NAME AND DEFINITION

The Crook County Community Health Advisory Council (Council) is an advisory body to the Crook County Board of Commissioners ("Board of Commissioners"), a political subdivision of the State of Oregon. The Council is formed and operates in accordance with ORS 430.342 and 430.630(7) and provides recommendations and guidance to the Board of Commissioners on issues related to Mental Health and Public Health within Crook County.

ARTICLE II – PURPOSE

The purpose of the Council is as follows:

a. Advocate and build consensus for local policies to protect and promote the health (mental and physical health) of all people in Crook County;

b. Promote and facilitate population health initiatives as well as accessible, affordable, and quality safety net health services including behavioral health, development disabilities, and public health;

c. Advise the broad community health system on coordination, collaboration and integration of mental health and public health services;

d. Provide appropriate and timely information to the Board of Commissioners on mental health, alcohol and drug policy, public health issues, and developmental disability matters;

e. Review statewide mental health and public health issues and make recommendations;

f. Monitor health status indicators that will help identify and solve community health problems;

g. Receive input from community members at regularly scheduled meetings or special meetings as determined by the Council;

h. Assist the county in broad community health assessment and planning;

i. Advise and make recommendations to the Board of Commissioners on issues related to the needs of the individuals living, working, learning, and/or recreating in Crook County;

j. Annually review, and revise when necessary, the Council's focus, projects, priorities, and progress based on community health issues;

k. The Council will develop plans and practices to follow up on recommendations and their implementation;

l. Advocate for resources necessary to assure the provision of essential mental and public health functions;

m. Provide summary assessments to the Board of Commissioners on the work of the Council in providing oversight for the mental health and public health systems.

ARTICLE III – MEMBERSHIP

A. The Council shall consist of 10-15 members.

B. Membership will be broadly represented of the community by age, gender, and ethnicity.

C. Membership will consist of advocates, consumers, professionals, and interested citizens of all ages.

D. Members shall be appointed by the Board of Commissioners with assistance and recommendations from the Council.

E. Appointment to the Council is for a two-year term.

F. A member wishing to resign from the Council shall notify the Chairperson or Board of Commissioners in writing with the effective date of resignation.

G. Members are expected to attend all meetings of the Council.

H. By the affirmative vote of at least a majority of its members, the Council may recommend to the County Board of Commissioners that a member be removed from

the Council for continued neglect of duties required by law, for failure to attend Council meetings without just cause, for incompetence, or for unprofessional or dishonorable conduct. Such a recommendation shall be made only after a proposed recommendation to the Council by the Chair and Vice-Chair, or by any three members and after the member being considered for removal has been given the opportunity to appear before the Council regarding that proposed recommendation.

I. Vacancies on the Council shall be filled via appointment by the Board of Commissioners. The Chairperson will notify the Board of Commissioners and Crook County Clerks office of any Council vacancies.

ARTICLE IV – OFFICERS

A. The officers shall consist of the Chair – Health & Human Services Director appointed by the Board of Commissioners and Vice Chair, elected by the Council to serve a two-year term.

B. Nominations for the Vice-Chair will be made by one or more Council members.

C. Election of officers shall occur at the final regular Council meeting of every even-numbered year. In the event that the Vice-Chair resigns or is otherwise unable to fulfill their duties before the end of their term, a special election shall be held at the next regular Council meeting at which a quorum is present to elect a replacement for the remainder of the term.

D. The Vice-Chair shall be a non-county employee.

E. Duties:

1. The Chair shall preside at meetings of the Council, appoint committees, and perform all additional duties prescribed by these Bylaws.

2. The Vice-Chair shall serve as Chair in the absence or incapacity of the Chair, assist the Chair, see that the Bylaws are followed, and perform additional duties as prescribed by these Bylaws.

3. The Chair or Vice Chair shall provide an annual report/summary of the Board's activities to the Crook County Board of Commissioners. The Chair or Vice Chair may report to the

Crook County Board of Commissioners any time an issue arises necessitating the Board's attention.

ARTICLE V – MEETINGS

A. Regular meetings of the Board shall be every other month.

B. Meetings shall be conducted in accordance with Oregon's public meeting law (ORS 192.610 – 192.710) and Oregon's public records law (ORS 192.001 – 192.505). Notice will be provided to members, the public and media at least 48 hours in advance of each regular meeting, and at least 24 hours in advance of any special meeting.

C. Special meetings may be called as determined by the Chair.

D. A quorum of any regular or special meetings shall consist of not less than a majority of the Council members. Action shall be taken by at least a majority of the Council members present at any regular or special meeting.

E. Written minutes will be taken at all regular and special meetings. Minutes will include members present, all motions, proposals, resolutions, orders, ordinances, and measures proposed and the disposition of each; the substance of discussion on any matter; and reference to any document(s) discussed or distributed at the meeting.

ARTICLE VI – COMMITTEES

A. The Council may appoint standing or temporary committees.

B. The Council shall have the power to create additional committees in number and responsibilities believed by the Council to be necessary to aid in the development and implementation of mental health and public health requirements.

C. Committees shall be designated temporary or standing. Temporary committees shall terminate upon completion of the committee aim and are therefore limited in duration. Standing committees shall remain in existence until such time as specifically terminated by the Council.

D. Non-Council members may serve on standing or temporary committees, as determined appropriate by the Council.

E. Each committee shall select a lead who shall be an appointed Council member.

F. All participants of a committee – whether they are members of the Council – shall be entitled to vote on matters under consideration within the committee. However, only appointed members of the Council may vote on committee recommendations when such matters are brought before the full Council for action.

ARTICLE VII – AMENDMENTS

The Council may recommend to the Board of Commissioners amendment(s) of these bylaws by a vote of a majority of the Council present at the duly notice meeting. Any proposed amendment will be made available to the Council at least seven (7) days prior to the Council meeting at which the proposed amendment will be reviewed and a recommendation acted upon. Final approval of any bylaw change(s) rests solely with the Board of Commissioners.

ARTICLE VIII – PARLIMENTARY AUTHORITY

Roberts Rules of Order govern Council meetings except in instances of conflict between the Rules of Order and the Bylaws of the Council, or provision of law.

Approved by the Crook County Board of Commissioners on _____(MM/DD/YYYY)

Signature	Print Name	Title
Signature	Print Name	Title
Signature	Print Name	Title

These bylaws were adopted by the Council on _____ (MM/DD/YYYY)

		Chair
Signature	Print Name	Title
		Co-Chair
Signature	Print Name	Title

AGENDA ITEM REQUEST

Date:

09/17/25

Meeting date desired:

10/01/25

Subject:

Letter of Appreciation.

Background and policy implications:

The Crook County Road Department has assisted the Sheriff's Office on many incidents over the summer. We wish to formally recognize and thank memebers of the Road Department.

Budget/fiscal impacts:

None.

Requested by:

Lieutenant Mitch Madden

Presenters:

Lieutenant Mitch Madden

Legal review (only if requested):

No.

Elected official sponsor (if applicable):

N/A

CROOK COUNTY SHERIFF'S OFFICE

SHERIFF JOHN GAUTNEY

Date: September 17, 2025

To: Crook County Board of Commissioners

From: Lieutenant Mitch Madden, Crook County Sheriff's Office

Subject: Letter of Appreciation

CC: Brad Haynes, Road Master, Crook County Road Department

Dear Board of Commissioners,

On behalf of the Crook County Sheriff's Office, I would like to formally recognize and express our appreciation to the Crook County Road Department for their outstanding support and assistance during multiple incidents throughout the summer of 2025.

The Road Department's willingness to step up as a team, provide critical resources, and work collaboratively with our office exemplifies professionalism and a strong commitment to public service. Their timely response and teamwork on incidents have contributed significantly to the success of our operations and enhanced the safety and well-being of Crook County residents and visitors to our community.

One incident to highlight is the Highland Fire in Juniper Canyon. The Road Department was instrumental in keeping citizens out of the LEVEL 3 evacuation zone, freeing up law enforcement to complete other critical tasks. After the dust had settled, the Sheriff's Office met with members from the Road Department, and we were able to collaboratively develop a plan for dealing with a fire of this magnitude in Juniper Canyon, specifically the traffic issue. I couldn't have asked for a more productive debriefing of a significant incident.

This level of cooperation underscores the importance of inter-agency partnerships to ensure community safety and resilience. The Sheriff's Office is grateful for the dedication and stellar service demonstrated by the Road Department this summer (not to mention the Road Department's busy schedule), and we cannot thank them enough for stepping up at a moment's notice to help us.

Sincerely,

Lieutenant Mitch Madden

260 NW 2nd Street, Prineville, Oregon 97754
Phone (541) 447-6398 | Fax (541) 416-0353 | Website http://sheriff.co.crook.or.us/

AGENDA ITEM REQUEST

Date:
9/23/2025

Meeting date desired:
10/1/2025

Subject:
IGA with Multnomah Education Service District (MESD) for Medicaid Administrative Claiming

Background and policy implications:
Crook County Health Department staff identified in a Cost Pool provide Title XIX Medicaid administrative services and seeks reimbursement for such services from Oregon Health Authority. MESD processes these claims and provides services as specified in attached Scope of Work in IGA.

Budget/fiscal impacts:
MESD instituted a 6% COLA and additional 10% administrative fee to the contract this year. I expressed concern about these increases to MESD and Oregon Health Authority but do not have an alternative at this time. It is worth the expense to secure the $150,000 reimbursement we have budgeted for this fiscal year, but I am actively researching other options for the future.

Requested by:
Katie Plumb, Health & Human Services Director
kplumb@crookpublichealthor.gov 541-447-5165

Presenters:
Katie Plumb, Health & Human Services Director

Legal review (only if requested):
Legal has reviewed

Elected official sponsor (if applicable):

INTERGOVERNMENTAL AGREEMENT BETWEEN MULTNOMAH EDUCATION SERVICE DISTRICT AND CROOK COUNTY HEALTH DEPARTMENT

This Intergovernmental Agreement is between Multnomah Education Service District, hereinafter "MESD," and Crook County Health Department, hereinafter "Client" (collectively "the Parties"), pursuant to the authority granted in ORS 190.010 and ORS Chapter 190.

THE PARTIES MUTUALLY AGREE AS FOLLOWS:

Purpose. This is an agreement for Medicaid Administrative Claiming. MESD shall perform the work described in Attachment 1 (Scope of Work).

Term of Agreement. The initial Agreement term shall begin on the date it has been fully executed by the Parties or on July 1, 2025, whichever is later. Unless extended or terminated in accordance with its terms, this Agreement shall terminate on June 30, 2026, or when Client accepts MESD's completed performance, whichever occurs first.

Payment for Work. No payments shall be made nor work performed until this Agreement is fully executed by both Parties. Specific tasks are depicted in Attachment 1 and shall be delivered by MESD and/or Client once this Agreement has been executed. Unless otherwise agreed to in Attachment 1, MESD shall submit quarterly invoices for services rendered, but shall not issue invoices prior to performance of service. Client shall remit payment within 30 calendar days of receipt of invoice, but shall not make payment prior to performance and receipt of invoice.

Additional Expenses. The Parties shall pay for additional costs and expenses as specified in and under the terms set out in Attachment 1.

Agreement Documents. The full Agreement between the Parties consists of: this Agreement document, and Attachment 1 (Scope of Work). Any conflict between the Agreement documents shall be resolved with the terms of this Agreement document having the highest priority, followed by the attachments in sequential order.

SPECIAL TERMS AND CONDITIONS

1. **Data Sharing**. MESD may import and manage confidential student and program data from Client in the performance of some services per this Agreement, in alignment with the Family Education Rights and Privacy Act ("FERPA", 20 U.S.C. § 1232g), and in alignment with Oregon Administrative Rules 518-021-025, -260, -330, -340, and -350.

   To ensure that a secure method of data exchange is provided between MESD and Client, and to provide guidelines for the use of confidential data which Client makes available to MESD, such data will be exchanged and/or maintained by the Parties with the following general provisions.

   a. **Data**. For the purposes of this Agreement, "Data" means Client's student information, including but not limited to student names, identification numbers, date of birth, IEP information, district name, school name, gender.

   b. **Right to Use Client Data**. MESD may only use the Data for the business purposes outlined in the scope of work attached to this Agreement (Attachment 1).
   c. **Client-Owned Data**. Client shall make identified Client data available to MESD. **d. Data Security:**

i. MESD will allow only approved MESD or Cascade Technology Alliance (CTA) employees to access Client data. MESD shall be solely responsible for ensuring that authorized MESD or CTA employees are not security risks, and upon Client's request, MESD will provide Client with any information reasonably necessary for Client to evaluate security issues relating to any authorized MESD employee or MESD information systems.

ii. Each Party will be solely responsible for the selection, implementation, and maintenance of security procedures and policies that are sufficient to ensure that (a) such Party's use of the data is secure and is used only for authorized purposes, and (b) such Party's business records and data are protected against improper access, use loss alteration or destruction.

iii. All emails containing student data from a Client educational record must be encrypted or otherwise secured.

e. **Disposition of Data Upon Termination.** Generally, upon termination of service, MESD will cease to upload Client data. Data that is legally permitted to be destroyed will be destroyed; however, MESD shall keep data for auditing and emergency backup purposes where required by contract, statute, Client policy, best industry practices and/or Client request. Alternate disposition requirements and procedures for each service may be listed in the Service Description Instrument.

2. **Provisions Pursuant to FERPA.** Both Client and MESD are subject to the Family Educational Right and Privacy Act (FERPA), 20 U.S.C. § 1232g, as follows:

a. **Definitions:**

i. **"Education Records"** are defined as records that are directly related to a student and maintained by the Client or by a party acting for the Client.

ii. **"Disclosure"** means to permit access to or the release, transfer, or other communication of personally identifiable information contained in education records to any party by any means.

b. **Disclosure and Re-disclosure**. The Parties recognize that FERPA imposes strict penalties for improper disclosure or re-disclosure of confidential student information including but not limited to denial of access to personally identifiable information from education records for at least five years (34 CFR 99.33(e)). Therefore, consistent with the requirements of FERPA, personally identifiable information obtained by the Parties in the performance of this Agreement may not be disclosed or re-disclosed to third parties without written consent of the students' parents/guardians, and must be used only for the purposes identified in this Agreement.

c. **Eligible Third Parties.** FERPA specifically addresses disclosure of education records to contractors, consultants, volunteers and service providers who are not employees of a Client. FERPA states that these individuals may have access to records if they: (1) perform an institutional service or function for which the Client would otherwise use employees; and (2) are under the direct control of the Client with respect to the use and maintenance of education records.

d. **Role of MESD.** Pursuant to this Agreement, MESD may provide other services for Client that Client would otherwise provide for itself using employees. MESD is under the direct control of the Client with respect to the use and maintenance of data from education records. MESD would have "legitimate educational interests" in the data disclosed if the service were performed by MESD employees. The Client therefore authorizes MESD staff access to the Client's student data within the scope of those other services which are purchased pursuant to this Agreement.

e. **Disclosure of Directory Information**. MESD shall comply with any obligation of Client not to disclose "directory information" concerning any student when the student's parents/guardian (or the student, where applicable) have opted out of the disclosure of the student's "directory information" under FERPA.

STANDARD TERMS AND CONDITIONS

1. **Relationship.** This Agreement does not establish an agency or an employment relationship between the Parties. The Parties affirm that each is an independent contractor.

2. **Governing Law.** This Agreement and all rights, obligations, and disputes arising out of it shall be governed by Oregon law. All disputes and litigation arising out of this Agreement shall be brought and conducted in Multnomah County Circuit Court. If the claim must be brought in a federal forum, then it shall be brought and conducted in the United States District Court for the State of Oregon. THE PARTIES AGREE TO THIS CHOICE OF LAW AND THE JURISDICTION OF THESE COURTS.

3. **Early Termination.** Termination shall not prejudice any right or obligation of the Parties already accrued prior to the effective date of termination. This Agreement may be terminated as follows, unless otherwise specified herein:

   a. Mutual. The Parties may terminate this Agreement at any time by written mutual agreement.
   b. 30 Days' Written Notice. Either party may terminate this Agreement upon 30 calendar days' written notice. However, if the Agreement relates to a provision of special education services, the effective date of termination of services shall be 30 school days after the date the individualized education program team determines that the student's placement will be changed, unless prohibited by law.

   c. Material Breach. Either party may terminate this Agreement in the event of a material breach by the other party. To be effective, the party seeking termination must give the other party written notice of: the material breach; what actions the breaching party should take/complete in order to cure the material breach; and its intent to terminate if the material breach is not cured within 15 calendar days. The breaching party shall give the non-breaching party written notice of the actions it took or plans to take to cure the material breach before the 15 calendar day window to cure expires. If the breaching party does not fully cure the material breach within 15 calendar days from the date of the notice from the non-breaching party, this Agreement shall automatically terminate, unless the Parties mutually agree in writing to extend the window to cure.

   d. Liability. Early termination by either party shall not constitute a waiver of any claim either party may assert against the other under the terms of this Agreement. MESD shall not be liable for incidental or consequential damages arising or resulting from early termination of this Agreement. In the event of early termination, each party remains responsible for paying the other for all work satisfactorily performed prior to the termination date.

4. **Performance and Fiscal Audit**. At its discretion, MESD may conduct a performance and/or fiscal audit to determine whether the terms, conditions, obligations, agreements, and understandings of this Agreement are being met.

5. **Access to Records.** For the purpose of examination, copying, and audit, each party shall have access to the other party's books, documents, and other records that are related to this Agreement, unless otherwise limited by law.

6. **Time Is of the Essence.** Time is of the essence in all terms, provisions, covenants, and conditions contained in this Agreement and its Attachment(s).

7. **Compliance with Applicable Law.** Each party shall comply with all federal, state, and local laws, all regulations and administrative rules established pursuant to those laws, and all MESD policies that are applicable to the work done under this Agreement.

8. **Confidentiality.** Neither Party shall make any reports, information, nor data given to, prepared, or assembled by the Parties under this Agreement accessible to any third party without the other party's prior written consent. Whenever applicable, the Parties shall comply with all privacy requirements of the Family Educational Rights and

Privacy Act (FERPA) and/or the Health Insurance Portability and Accountability Act (HIPAA). This section is subject to state and federal law regarding disclosure of public records.

9. **FERPA Redisclosure.** The Parties recognize that FERPA and its associated regulations provide that an educational agency or institution may only disclose personally identifiable information from an education record on condition that the party receiving such disclosure will not redisclose the information to any third party without the prior consent of the student's parent/guardian. The party receiving the disclosure may redisclose the information without prior consent only to its officers, employees, or agents, to use the information for the purposes for which the disclosure was made. Therefore, consistent with the requirements of FERPA, personally identifiable information obtained by the Parties in the performance of this Agreement shall only be used for the purposes identified in this Agreement, and shall not be disclosed or redisclosed to third parties without the prior written consent of the student's parent/guardian.

10. **Insurance**: MESD shall at all times maintain in force at MESD's expense, each insurance noted below:

    a. **Workers' Compensation** insurance for all subject workers in compliance with ORS 658.017. MESD and all subcontractors of MESD with one or more employees must have this insurance unless exempt under ORS 656.027.
    b. **Public Entity Liability** insurance, on an occurrence basis, with a combined single limit of not less than $1,000,000 each occurrence for Bodily/Personal Injury and Property Damage, with an annual aggregate limit of $3,000,000. This insurance must include contractual liability coverage, as well as professional liability coverage to cover the errors and omissions of staff who are performing under the scope and course of their duties at MESD. MESD's coverage will be primary in the event of loss.
    c. **Cyber-Liability** insurance, with a combined single limit of not less than $1,000,000, plus excess coverage of not less than $2,000,000. Excess coverage to be placed on a dedicated basis, outside the Oregon school district insurance pool (PACE) to ensure aggregate limits are not eroded.
    d. **Certificate(s) of Insurance**. MESD shall furnish a current Certificate(s) of Insurance to Client upon request. The Certificate(s) shall provide that there shall be no cancellation, termination, material change, or reduction of limits of the insurance coverage without 30 days written notice from MESD's insurer to the Client. The Certificate(s) shall also state the deductible or retention level. For Public Entity Liability and Cyber-Liability, the Certificate shall also provide that Client, its agents, officers, and employees are Additional Insureds with respect to MESD's services to be provided under this Agreement.

11. **Successors, Subcontracts, and Assignment.** The provisions of this Agreement are binding and inure to the benefit of the Parties, their respective successors, and validly permitted assigns, if any. Neither party shall subcontract or assign any part of this Agreement without the prior written approval of the other party. Any attempted subcontract or assignment of this Agreement without prior written approval shall be void.

12. **Quality of Work.** The Parties represent and warrant that any and all work under this Agreement shall be performed in a good workmanlike manner and in accordance with the highest of professional standards.

13. **Licenses.** At all times during the term of this Agreement, MESD represents and warrants that those who are assigned to perform services have any and all required licenses, certifications, or other evidence of the necessary skills, abilities, and professional knowledge needed to carry out the terms of this Agreement.

14. **Indemnity and Hold Harmless.** Each party shall be responsible exclusively for its respective officers, employees, and agents. Each party shall provide its own personnel with employment-related benefits and deductions that are required by law, including but not limited to federal and state income tax deductions, workers' compensation coverage, and Public Employees Retirement System/Oregon Public Service Retirement Plan contributions. Subject

    to the conditions and limitations of the Oregon Constitution and the Oregon Tort Claims Act (ORS 30.260–30.300), the Parties shall each defend, save, hold harmless, and indemnify the other from and against all claims, suits,

actions, losses, damages, liabilities, costs, and expenses of any nature whatsoever (including reasonable attorney fees) resulting from, arising out of, or relating to the acts or omissions of the party's own officers, employees, subcontractors, or agents in the performance of this Agreement.

15. **Remedies.** In case of either party's breach and in addition to the provisions of the Early Termination sub-paragraph d., Indemnity and Hold Harmless, and Attorney Fees paragraphs in this Agreement, either party's remedy shall be limited to termination of this Agreement and receipt of any payments to which either party is entitled for services performed prior to the effective termination date.

16. **Attorney Fees.** If any suit or action at law, in equity, or through arbitration is filed to enforce any of the terms of this Agreement, the prevailing party shall be entitled to recover from the other party its reasonable attorney fees, costs, and disbursements, in addition to any other relief to which that party may be entitled. If the prevailing party is represented by in-house counsel, it shall nevertheless be entitled to recover reasonable attorney fees based upon the reasonable time, rates, and charges generally accepted for the type of legal services performed in the Portland, Oregon metropolitan area.

17. **Nonwaiver.** The waiver by either party of any breach, violation, or default of a provision of this Agreement shall not operate as a waiver of any subsequent breach, violation, or default of that or any other provision.

18. **Force Majeure.** Neither party shall be held responsible for delay or default caused by any contingency beyond its control, including, but not limited to: war or insurrection; strikes, lockouts, or walkouts by the party's own employees; fires; natural calamities; riots; or demands or requirements of governmental agencies other than the Parties to this Agreement.

19. **Severability.** If any clause or provision of this Agreement is or becomes illegal, invalid, impossible to perform, or unenforceable under present or future laws effective during the term of Agreement, the Parties intend that the remainder of this Agreement shall not be affected. The Parties intend that in lieu of each clause or provision of this Agreement that is or becomes illegal, invalid, impossible, or unenforceable, there be added as part of this Agreement a clause or provision as similar in terms as may be possible, legal, and enforceable.

20. **Entire Agreement.** This Agreement and its Attachment(s) together constitute the final and exclusive understanding of the Parties. There are no other warranties, promises, representations, agreements, conditions, or understandings between the Parties, either oral or written, other than those expressly set forth in this Agreement and its Attachment(s).

21. **Modifications and Amendments.** This Agreement shall not be modified or amended except by an express writing containing the terms of the modification or amendment that has been signed by both Parties.

22. **Handwritten Revisions.** Handwritten revisions made to this Agreement that are not initialled and dated by both Parties, shall be deemed to have been rejected.

23. **Joint Authorship.** The Parties reviewed this Agreement and negotiated for change to any language that either party found vague. Accordingly, anyone constructing and/or interpreting this Agreement shall not construe any of its terms strictly against either party.

24. **Headings.** The headings of this Agreement are provided for convenience only and are not intended to be used as tools of construction.

25. **Singular and Plural.** Words used in the plural shall also be interpreted to include the singular, and words used in the singular shall also be interpreted to include the plural.

26. **Notices and Contact Information.** Any kind of notice or demand required or desired to be given by either party must be made in writing, and shall be deemed delivered upon depositing the notice or demand in the United States mail, certified or registered, postage prepaid, addressed to the respective party at its address listed below.

MESD Contact Address	**Client Contact Address**
Multnomah Education Service District Attn.: Wendy Chase 11611 NE Ainsworth Circle Portland, OR 97220-9017 Phone: (503) 257-1775	Crook County Health Department 375 NW Beaver St, Suite 100 Prineville, OR 97754

THIS AGREEMENT IS NOT VALID UNTIL ALL SIGNATORY APPROVALS ARE COMPLETED

I have read this Agreement, including any Attachment(s). I certify that I have the authority to sign and enter into this Agreement. I understand the Agreement and agree to be bound by its terms.

Dr. Paul Coakley, MESD Superintendent	*County Health Dept*
4/21/2025	
Date	*Date*

Multnomah Education Service District prohibits discrimination and harassment on any basis protected by law, including but not limited to race, color, religion, sex, national or ethnic origin, sexual orientation, mental or physical disability or perceived disability, pregnancy, familial status, economic status, veterans' status, parental or marital status or age. For more information and detail on MESD's non-discrimination policies, including procedures and contact information for reporting discrimination, please visit the MESD Non-Discrimination, Harassment & Bullying Notice page at https://www.multnomahesd.org/nondiscrimination.html.

ATTACHMENT 1

ATTACHMENT 1 SCOPE OF WORK

The purpose of this Scope of Work is to describe MESD's and Client's rights and obligations with respect to MESD's provision of Medicaid administrative claims processing services to Client. Client provides Title XIX Medicaid administrative services and wishes to seek reimbursement for such services from the Oregon Health Authority.

Client agrees to:

A. To collect cost pool data on employees, and submit such data to MESD. Cost pool data includes: the name, title, job description, salary, and other personnel expenses for each individual employee or subcontractor; the percent of time each employee or subcontractor spends on the coded activities identified in the Time Study; and costs attributable to each employee's or subcontractor's position providing work.

B. To provide the "Medicaid-eligible percentage" in accordance with OHA and Federal guidelines for purposes of the Time Study calculation.

C. To submit signed training rosters for entry into the MESD web-based system.

D. To pay a fee to MESD of $67,051.36, divided by four survey quarters, (which is $16,762.84 per quarter: fall, winter, spring, summer), distributed between all participating county health departments based upon % of Total Claim for the corresponding quarter.

E. 10% administrative fee for administrative overhead costs
   1. Administrative overhead costs for MESD includes indirect costs, such as Superintendent, Business Office, Human Resources and Communications and is based on the quarterly invoice amount.

F. To monitor compliance with the requirements of this Agreement.

G. CLIENT shall comply with all federal, state and local laws, regulations, executive orders and ordinances applicable to this Agreement. Without limiting the generality of the foregoing, CLIENT expressly agrees to comply with: (i) Title VI of the Civil Rights Act of 1964; (ii) Section V of the Rehabilitation Act of 1973; (iii) the Americans with Disabilities Act of 1990 and ORS 659.425; (iv) all regulations and administrative rules established pursuant to the foregoing laws; (v) the applicable audit requirements and responsibilities set forth in the Office of Management and Budget Circular A-133 entitled "Audits of States, Local Governments and Non-Profit Organizations"; and (vi) all other applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations.

G. CLIENT shall maintain all fiscal records relating to this Agreement in accordance with generally accepted accounting principles. In addition, CLIENT shall maintain any other records pertinent to this Agreement in such a manner as to clearly document CLIENT's performance. CLIENT acknowledges and agrees that MESD, OHS, the Oregon Department of Justice, Medicaid Fraud Unit, the Oregon Secretary of State's Office and the federal government and their duly authorized representatives shall have access to such fiscal records and other books, documents, papers, plans, and writings of CLIENT that are pertinent to this Agreement to perform examinations and audits and to make excerpts and transcripts. CLIENT shall retain and keep accessible all such fiscal records, books, documents,

papers, plans, and writings for a minimum of seven (7) years, or such longer period as may be required by applicable law, following final payment and termination of this Agreement, or until the conclusion of any audit, controversy or litigation arising out of or related to this Agreement, whichever date is later.

H. CLIENT shall be financially responsible for the final amount of any claim for services provided under this Agreement that the U.S. Department of Health and Human Services, Centers for Medicare and Medicaid ("CMS") or OHA finds unallowable under the Medicaid program. In the event CMS or OHA finds any costs claimed by CLIENT unallowable, OHA shall provide CLIENT written notice identifying the amount that must be refunded to CMS or OHA. Within thirty (30) calendar days of OHA's notice, CLIENT shall either (1) Make a payment to OHA for the full amount of the unallowable cost identified by OHA in its notice; or (2) Notify OHA in writing that CLIENT wishes to repay the unallowable amount from future payments or other means. OHA may then offset the unallowable amount from future payments owed to CLIENT under this Agreement, or any payment to CLIENT from OHA under any other contract or agreement between CLIENT and OHA, present or future. Nothing in this paragraph shall be construed as a waiver by either party of any process or remedy that might otherwise be available. The rights and remedies of OHA set forth in this paragraph shall not be exclusive and are in addition to any other rights and remedies provided to OHA by law or under this Agreement.

MESD agrees to:

A. Provide a web-based survey tool for CLIENT employees to access and record their time study.

B. Provide electronic data storage, including but not limited to:
   1. Cost pool information used to compile the claim for each quarter.
   2. Tracking of dates LHD staff have been trained for the time study.
   3. Time study results.

C. Maintain all records that support the quarterly payment claim for the work performed, including but not limited to, position details, cost information, Time Study results, records to indicate that services were requested and the extent of services provided, other resources that have been applied to offset costs, and any other information applicable to the work provided under this Agreement.

D. Provide administrative/monitoring tools for the CLIENT coordinator and OHA system administrators that help the user to:
   1. Manage cost pool data including but not limited to exporting reports to Excel.
   2. View survey code definitions.
   3. Store CLIENT information relating to the survey, e.g., Medicaid Eligible percents, for a minimum of seven (7) years.
   4. View training information that includes training expiration dates and participants that have been and need to be trained.
   5. View the claim electronically, including a detailed view of the claim.

E. Revise all disapproved CLIENT MAC claims with correct information provided by CLIENT and resubmit corrected claiming information to OHA and CLIENT within three (3) business days of MESD's receipt of the corrected information.

F. Submit a quarterly claim to CLIENT program manager.

G. Maintain confidentiality of client information contained in CLIENT files provided to MESD to the full extent required by federal and state law and regulations.

H. Provide technical assistance and training on the web-based MAC time study tool.

DRAFT Crook County Transportation System Plan

Prepared for
Crook County, OR

September 2025

Parametrix

DRAFT Crook County Transportation System Plan

Prepared for

Crook County, OR
Crook County
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September 2025

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APPENDICES

A Existing Conditions and Needs Analysis
B Goals, Objectives, and Evaluation Criteria

Contents (continued)

C Solutions, Analysis, and Funding Program

D Preferred Solutions

E Juniper Canyon Alternatives Analysis

Acronyms and Abbreviations

AADT	annual average daily traffic
AASHTO	American Association of State Highway and Transportation Officials
CET	Cascades East Transit
LOS	level of service
NBI	National Bridge Inventory
ODOT	Oregon Department of Transportation
PMT	Project Management Team
TNC	transportation networking company
TSP	transportation system plan
UGB	urban growth boundary
V/C	volume to capacity

Executive Summary

The Crook County Transportation System Plan (TSP) Update 2025 is a long-term plan for managing, preserving, and improving the transportation system to meet the needs of the Crook County community. It is an update to the 2017 TSP and responds to significant needs and priorities that have changed since that time including growth, safety, and emergency access, This section introduces the 2025 TSP update and summarizes the key projects and priorities that influenced its development.

Big Moves

Crook County has grown rapidly in recent years. Since the 2017 TSP, population growth has accelerated, and recent estimates show that the county is on track to exceed future projections. More people living and traveling in the county, congestion and safety on regional roads and highways, a lack of connections in some areas, and limited options to get around—especially for older adults—have created pressing needs for transportation infrastructure investment.

This TSP provides a comprehensive plan for improving transportation throughout the county now and for the next 20 years, but implementation requires new resources, partnerships, and grants. While the TSP identifies a range of projects that cover all modes of transportation, the following projects describe the greatest transportation challenges and solutions in Crook County, highlighting the importance of these projects to community safety, mobility, and livability.

Project R-1A: Construct a single-lane roundabout at the intersection of OR 126 and SW Powell Butte Highway.

This intersection is a key concern for the Crook County community. Traffic analysis shows that this location exceeds mobility targets in current a future conditions, meaning that travelers can experience significant congestion and delays. There are also safety concerns due to high travel speeds and traffic volumes. Community feedback reflected a strong desire to improve operations, safety, and comfort at this location. The TSP explored several project options to address these concerns.

A key element of this project, seen in Figure 1, also considers the post office, which is located on the southeast corner of the intersection. It is a community priority to preserve this location, and this project will create an opportunity to improve access management for this parcel.

Benefits of the OR 126 and SW Powell Butte Highway Project

- Maintains turning movements.
- Reduces turning conflicts.
- Reduces traffic delays in the near term.
- Provides easier navigation of intersection.
- Expected to cost less than dual lane roundabout.
- **Cost: $3,400,000**



Figure 1. SW Powell Butte Highway and OR 126

Project JC-1: Develop a new roadway to expand access to Juniper Canyon.

A new access route or routes for Juniper Canyon was identified as a desired critical improvement by the Juniper Canyon community throughout the plan development. Traffic analysis conducted during the TSP process shows that the intersection of SE Juniper Canyon Road and OR 380 is not expected to meet mobility targets in the future. Additionally, SE Juniper Canyon Road is the only access route into and out of the community today; traffic collisions and icy conditions can block this roadway, limiting both residential access and emergency service response. This also means that all traffic from Juniper Canyon must travel through Prineville, resulting in increased congestion in the city.

Benefits of the Juniper Canyon Access Project (JC-1)

- Helps relieve congestion along SE Juniper Canyon Road.
- Provides additional travel options for emergency response.
- **Cost:** $9,300,000 to $20,000,000

Building on prior planning and public engagement efforts, the TSP analysis evaluated access alternatives to identify a preferred route. This process is described in greater detail in Appendix E, Juniper Canyon Alternatives Analysis. The preferred route identified in the TSP and shown in Figure 2 aims to address needs related to traffic operations. Community members have also expressed concern regarding emergency evacuation routes, especially during events such as wildfires; the County is continuing to explore strategies to improve public safety and wildfire response.



Figure 2. Juniper Canyon Access Project JC-1

Project JC-2: Develop a new gravel roadway to provide an emergency evacuation route for Juniper Canyon

Based on continued exploration of route alternatives with County staff, elected officials and project partners, Project JC-2 would connect SE Simpson Rd to OR 380, as shown in Figure 3. This route is located primarily on BLM lands and responds to community desire for a route that better serves southern areas of Juniper Canyon. The proposed route would be approximately 20 feet in width and have a gravel surface. In addition to this route, the County is continuing to explore strategies to improve public safety and wildfire response.

Benefits of the Juniper Canyon Access Project (JC-2)

- Provides emergency evacuation route for community members in southern areas of Juniper Canyon
- **Cost:** $24,000,000 to $52,000,000

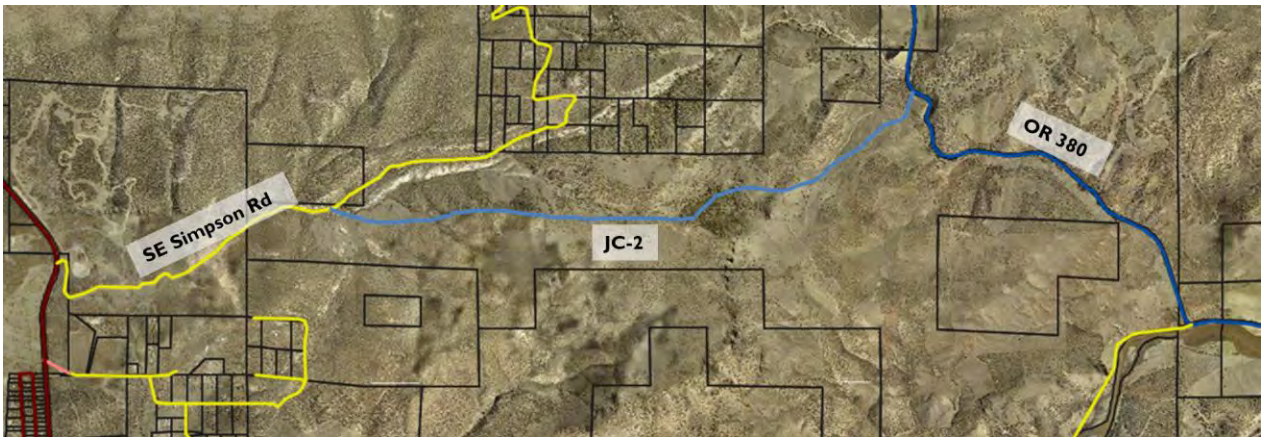


Figure 3: Juniper Canyon Access Project JC-2

Project R-2A: Construct a single-lane roundabout at the intersection of OR 126 and SW Williams Road.

Benefits of the OR 126 and SW Williams Road Project

- Improves safety performance for all modes.
- Provides traffic calming

Cost: $6,300,000

The intersection of OR 126 and SW Williams Road is an important community connection with several destinations located at this intersection, including a school, church, and a country store. Traffic analysis shows that this location is expected to exceed traffic mobility targets in 2045, and school pickup and drop-off activities are reported to affect travel patterns today. Community members identified safety concerns at this intersection, including high travel speeds and access to destinations. Crook County has identified a single-lane roundabout as the preferred improvement at this intersection to provide traffic calming and improve safety performance for all modes of travel. An Intersection Control Evaluation is required to identify the most appropriate traffic control change. Accompanying improvements include sidewalks, curb ramps, lighting, and marked crosswalks.

Transportation System Plan Projects Summary

TSP projects address present and future needs for all travelers in Crook County. They seek to enhance countywide safety and connections to local destinations. Projects respond to updated priorities with time frames of near-term (0 to 5 years), medium-term (5 to 10 years), and long-term (>10 years). When available, planning-level cost estimates and possible funding sources help guide project prioritization. A complete list of TSP projects organized by priority is summarized in Table 1.

Table 1. Transportation System Plan Projects Summary

Project ID	Project Name/Location	Improvement Time Frame	Cost Estimate	Possible Funding Source
R-3A	OR 126 & SW Parrish Ln: ▪ Widen OR 126 from SW Valley View Rd to Stillman Rd (center two-way left-turn lane).	Near	$900,000	ODOT, Local Funds
JC-1	Juniper Canyon Access: ▪ Develop new roadway connection in Juniper Canyon between Davis Loop and OR 27.	Near	$9,300,000 to $20,000,000	Local Funds, Grants
JC-2	Juniper Canyon Access: ▪ Develop new gravel roadway connection in Juniper Canyon between SE Simpson Rd and OR 380	Near	$24,000,000 to $52,000,000	Local Funds, Grants
S-3A	S Powell Butte Hwy & Alfalfa Rd: ▪ Install lighting and curve chevrons along S Powell Butte Hwy. ▪ Reassess curve warning signage and check for sign spacing.	Near	$71,000	Local Funds, Grants
S-4	OR 126 east of Powell Butte Hwy to Copley Rd: ▪ Widen edge line striping.	Near	$260,000	ODOT

Project ID	Project Name/Location	Improvement Time Frame	Cost Estimate	Possible Funding Source
S-5	OR 370 east of Happy Hollow Dr: ▪ Install rumble strips and/or wider edge line striping.	Near	$22,000	ODOT
S-6	OR 380 south of NE 3rd St: ▪ Evaluate access management along the corridor.	Near	N/A	ODOT
S-7	Juniper Canyon Rd variable speed limit: ▪ Implement variable speed limit based on weather conditions.	Near	TBD based on future evaluation	Local Funds
S-8	Juniper Canyon Rd alignment delineation: ▪ Add raised pavement markers on SE Juniper Canyon Rd. ▪ Add edge-line rumble strips to SE Juniper Canyon Rd.	Near	$94,000	Local Funds
S-9	Juniper Canyon Rd ▪ Add or enhance horizontal curve signage and markings.	Near	$10,000	Local Funds
S-10	Powell Butte Rd ▪ Add or enhance horizontal curves pavement markings.	Near	$10,000	Local Funds
T-3	Dial-a-ride enhancements and transportation network company encouragement.	Near	Already adopted as part of other plans.	
T-4	Transit community outreach.	Near	Variable	ODOT City of Prineville Local Funds
R-1A	OR 126 & Powell Butte: ▪ Construct a single-lane roundabout.	Medium	$3,400,000	ODOT, Development, Local Funds
R-2A	OR 126 & SW Williams Rd: ▪ Construct a single-lane roundabout. ▪ Requires an Intersection Control Evaluation to determine appropriate traffic control change.	Medium	$3,400,000	ODOT, Safe Routes to School, Local Funds
R-5	OR 126 at Kissler Rd. ▪ Balance destination access with mobility and safety of the transportation system.	Medium	$20,000	ODOT
R-6	OR 126 at Copley Rd. ▪ Balance destination access with mobility and safety of the transportation system.	Medium	$20,000	ODOT
R-7	OR 126 at Minson Rd. ▪ Balance destination access with mobility and safety of the transportation system.	Medium	$20,000	ODOT
R-8	OR 126 at Yates Rd. ▪ Balance destination access with mobility and safety of the transportation system.	Medium	$20,000	ODOT
R-9	OR 126 at Wiley Rd. ▪ Balance destination access with mobility and safety of the transportation system.	Medium	$20,000	ODOT

Project ID	Project Name/Location	Improvement Time Frame	Cost Estimate	Possible Funding Source
BR-1	County Road 221 bridge over Paulina Creek (NBI Bridge 19083): ▪ Study cost of repairing or replacing this functionally obsolete bridge.	Medium	$30,000	Local Funds, Grants
BR-2	SW Powell Butte Hwy bridge over Powell Butte Canal (NBI Bridge 03291): ▪ Replace bridge.	Medium	$1,500,000	Grants
BR-3	SW Powell Butte Hwy bridge over Powell Butte Wasteway (NBI Bridge 03293): ▪ Replace bridge.	Medium	$1,500,000	Grants
BR-4	Johnson Creek Rd NE bridge over Ochoco Main Canal (NBI Bridge 13C06A): ▪ Replace bridge.	Medium	$1,500,000	Grants
BR-5	Non-NBI bridge replacement program: ▪ Replace one non-NBI bridge per year.	Medium	$4,500,000	Local Funds
S-2	Rimrock Acres Loop & OR 370: ▪ Install lighting. ▪ Install raised pavement markings. ▪ Evaluate existing curve warning signage locations and warning speeds. ▪ Install curve chevrons, guardrail, and rumble strips.	Medium	$180,000	Local Funds, Grants
S-11	Davis Loop Rd ▪ Remove trees within clear zone.	Medium	TBD based on future study	Local Funds
S-12	Powell Butte (OR 126) ▪ Install/maintain speed feedback signs.	Medium	$50,000	ODOT
S-13	US 26 ▪ Add systemic safety treatments, including edgeline rumble strips.	Medium	$50,000	ODOT
S-14	Lamonta Rd ▪ Install horizontal curve signage, speed feedback sign, and delineators.	Medium	$50,000	Local Funds
S-15	OR 126 ▪ Install systemic safety treatments, including edgeline and centerline rumble strips.	Medium	$50,000	ODOT
B-1	OR 126 from SW Powell Butte Hwy to Prineville urban growth boundary: ▪ Add shared-use trail along the south side of OR 126.	Medium	$6,600,000	ODOT, Local Funds
B-8	OR 27 ▪ Add shared-use trail to connect to planned path in Prineville.	Medium	$4,400,000	ODOT, Local Funds
B-9	Countywide ▪ Add bicycle route signage.	Medium	$50,000	Local Funds

Project ID	Project Name/Location	Improvement Time Frame	Cost Estimate	Possible Funding Source
P-1A	OR 126 and SW Williams Rd: ▪ Install sidewalk, curb and gutter, curb ramps, and intersection lighting. ▪ Install marked crosswalks on all four legs of the intersection.	Medium	$2,900,000	ODOT, Local Funds, Sidewalk Improvement Program
T-1	Crook County Service Enhancement Plan: ▪ Institute evening and Saturday limited circulation as part of Route 26 flex route.	Medium	Already adopted as part of other plans.	
F-2	US 26 railroad bridge feasibility study.	Medium	$35,000	ODOT
R-4A	SE Juniper Canyon Rd & OR 380: ▪ Realign intersection with left acceleration lane.	Long	$2,100,000	Local Funds
S-1	S Powell Butte Hwy & SW Bussett Rd: ▪ Install rumble strips along the curve. ▪ Implement variable speed limits that lower in icy conditions. ▪ Install lighting. ▪ Reassess curve warning signage and check sign spacing. ▪ Install acceleration lanes on S Powell Butte Hwy. ▪ Reconstruct intersection to simplify circulation patterns and turning movements.	Long	$870,000	Local Funds, Grants
B-2	Barnes Butte Rd: ▪ Add paved shoulder to Barnes Butte Rd.	Long	$3,800,000	Local Funds
B-3	Barnes Butte Shared-Use Trail Connections: ▪ Add shared-use trail connecting Barnes Butte Rd to Iron Horse shared-use trail in Prineville.	Long	$4,900,000	Local Funds
B-4	OR 27 Scenic Bikeway Bicycle Hub. ▪ Construct a bicycle hub, or "rest stop," for hikers, bicyclists, recreationalists, and community members along the OR 27 scenic bikeway corridor; provide small shelter, information kiosk (map/community calendar), bicycle tool station, and bench/sitting area.	Long	$30,000	Private Partnership
B-5	US 26 (Madras Highway) shared-use trail: ▪ Extend existing shared-use trail northwest to the county line parallel to US 26.	Long	$7,100,000	ODOT, Local Funds
B-6	Houston Lake Rd, SW Williams Rd, and Reif Rd ▪ Add shared-use trails.	Long	$10,500,000	Local Funds
B-7	Juniper Canyon Rd (south) ▪ Add paved shoulders.	Long	$5,400,000	Local Funds
T-2	Fixed-route enhancements to increase service in Prineville and expand connections to destinations.	Long	TBD	CET City of Prineville Local Funds

Project ID	Project Name/Location	Improvement Time Frame	Cost Estimate	Possible Funding Source
F-1	Bus Evans Rd and Elliott Ln.	Long	$15,000,000	Local Funds Grants

1. Introduction

The Crook County Transportation System Plan (TSP) Update is a long-term plan for managing, preserving, and improving the transportation system to support the needs of the Crook County community. This section introduces the updated 2025 TSP and provides an overview of the purpose, planning process, and policy context that influenced the development of the update.

1.1 Purpose of the Transportation System Plan

The 2025 TSP update establishes the vision for Crook County's transportation system over the next 20 years. It updates the most recent TSP from 2017 to address population growth, transportation safety concerns, and the need for new access routes. Since publication of the 2017 TSP, Crook County's population has grown faster than previously projected, requiring a new evaluation of transportation system needs. The TSP update guides future decisions and investment priorities to improve the transportation system for all travelers. The TSP includes descriptions of the following analysis and conclusions:

- Assesses existing and future conditions to determine transportation needs and issues for all modes of travel, including driving, walking, biking, and public transportation.
- Evaluates transportation safety and identifies solutions for locations experiencing severe crashes.
- Identifies preferred alternatives to address congestion, safety, and access issues in the Powell Butte and Juniper Canyon communities.
- Includes both near- and long-term projects and programs that directly address transportation issues in the County and provides an evaluation system for prioritizing these projects.
- Includes an implementation plan for funding and financing projects.

1.2 Plan Process

The 2025 TSP update was developed through research, data analysis, documenting research and analysis in technical reports, and public involvement. The process began in fall 2023 and concluded in fall 2025.

The Project Management Team (PMT) led the TSP development process and was composed of staff from Crook County (County) and the consultant team. A separate Project Advisory Committee representing community members, partner jurisdictions, and the Oregon Department of Transportation (ODOT) provided input and recommendations at key milestones throughout the project. The Project Advisory Committee reviewed project documents and recommendations, considered public input, and provided feedback to the PMT.

The PMT also engaged with Crook County community members throughout the planning process to gather feedback on system needs, proposed goals, and identified solutions. The PMT held three community open houses, maintained a project website that included draft documents for review and public surveys, and shared information with project partners. As shown in Figure 4, community members, interested parties, and project partners were involved in the project, providing feedback that informed final decisions by the Crook County Board of Commissioners.

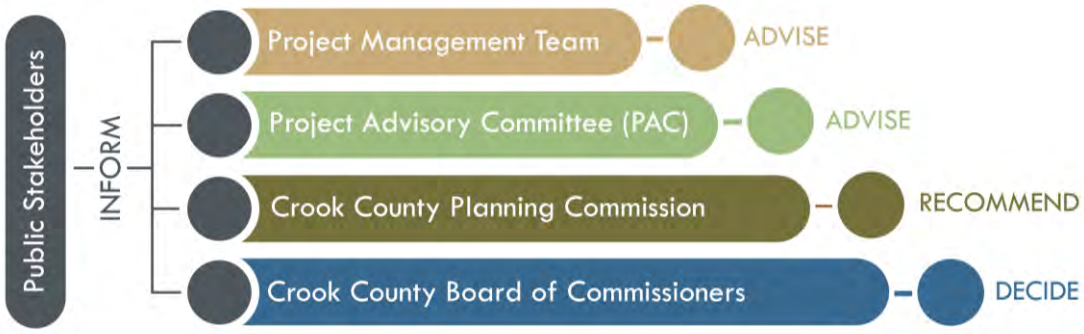


Figure 4. TSP Decision-Making Process

1.3 Policy Context

TSPs are developed per the Oregon Transportation Planning Rule (Oregon Administrative Rule 660012) and must be consistent with existing regional, state, county, and local plans, policies, and documents including the Oregon Highway Plan (ODOT 2023a), the ODOT Transportation System Plan Guidelines (ODOT 2024b), and the Crook County Comprehensive Plan (adopted in 1978 and codified in 2003). The Transportation Planning Rule implements Statewide Planning Goal 12 – Transportation, which is intended to promote the development of safe, convenient, and economic transportation systems designed to maximize the benefit of investment and reduce reliance on automobiles. The project team reviewed more than two dozen plans, policies, and other documents while developing the 2025 TSP update, including the 2017 Crook County TSP (Crook County 2017), the 2003 Crook County Comprehensive Plan (Crook County 2003), other applicable state and regional plans.

1.4 Study Area

Located in central Oregon, Crook County spans 2,991 square miles east of Deschutes County and the cities of Bend and Redmond. The city of Prineville is located in western Crook County and is the only incorporated city in the county. The Crook County TSP considers all land within county boundaries and roadways under County and State ownership, including US 26, Ochoco Highway/OR 126 (OR 126), NW O'Neil Highway/OR 370 (OR 370), SE Paulina Highway/OR 380 (OR 380), and OR 27. It does not include the city of Prineville or land within Prineville's urban growth boundary (UGB). The study area is displayed in Figure 5; the TSP focused on transportation in the western half of Crook County. Much of eastern Crook County is federal lands and sparsely populated.

Although this TSP update does not include the city of Prineville, the PMT coordinated closely with City of Prineville staff to align with project recommendations developed as part of their concurrent TSP update.



Figure 5. Study Area

1.4.1 Current Land Use

A county's zoning heavily influences transportation behavior. How far people must travel from their residences to work, learn, and recreate can be a factor in what transportation method they use. Crook County's land use includes a dispersed mix of farming, residential, industrial, and commercial uses, as shown in Figure 6. The majority of Crook County is zoned Exclusive Farm Use. The Juniper Canyon area and several other small communities in the Powell Butte area and northwest of Prineville are zoned Rural Residential.

Crook County has several community destinations, recreational areas, resort destinations, and other uses that attract trips within the county. As shown in Figure 7, Figure 8, and Figure 9, the following are key activity generators within the county:

- Brasada Ranch Resort
- Ochoco National Forest
- Crooked River Recreation Areas
- Prineville and Ochoco Reservoirs
- Paulina and Powell Butte Schools
- Prineville Airport
- City of Prineville Railway
- Crook County Landfill
- Powell Butte Post Office
- Powell Butte Community Center

In addition to these major activity centers in the county, destinations such as major employment centers, schools, medical facilities, and shopping centers are located within the city of Prineville. Although the transportation system within the city of Prineville is not part of the study area, connectivity between the county and nearby cities (e.g., Prineville, Redmond, and Bend) is an important aspect considered in this TSP update. Feedback from community members highlighted the importance of maintaining and improving access to key destinations in the county, including the Powell Butte Post Office.

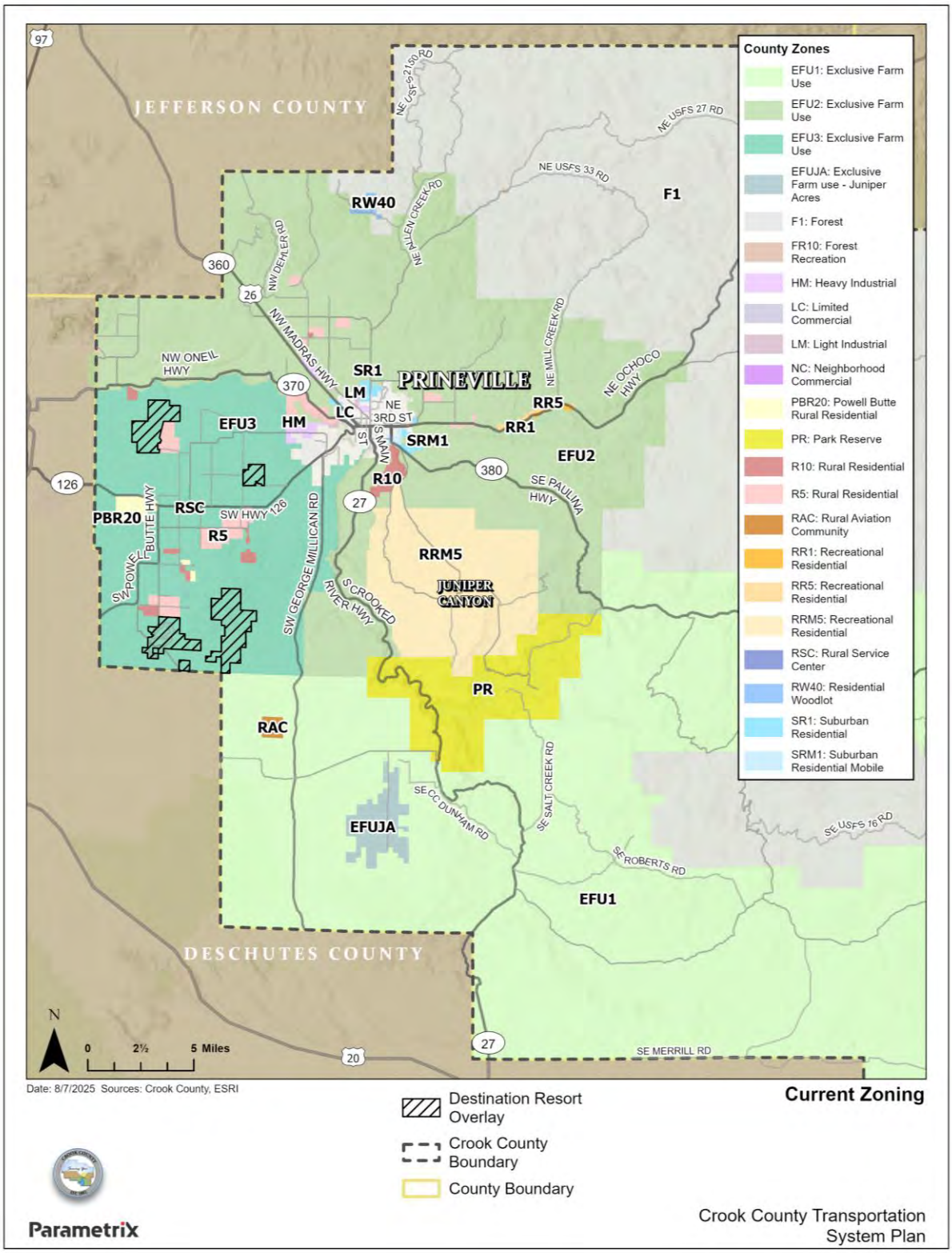


Figure 6. Current Zoning



Figure 7. Community Destinations - West

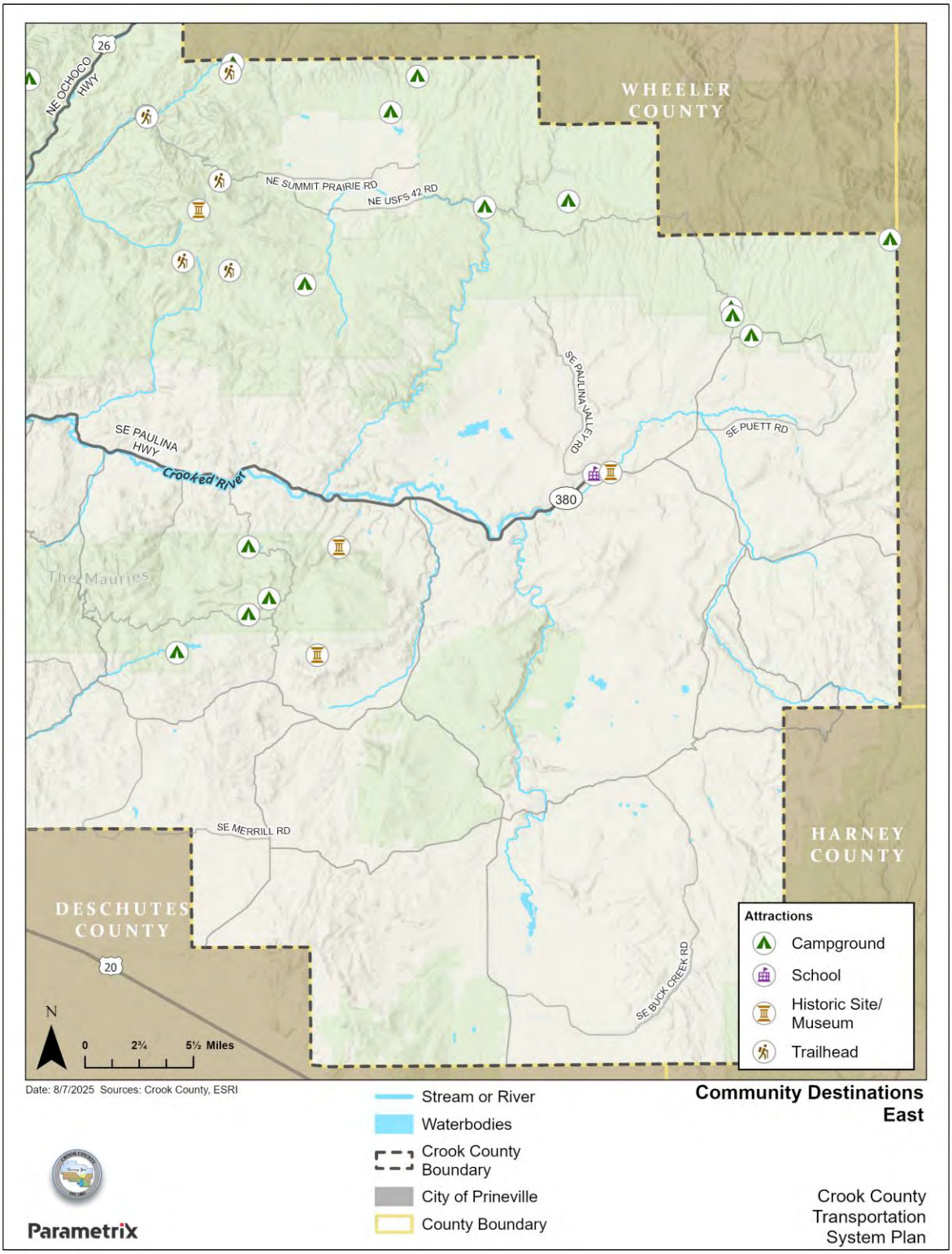


Figure 8. Community Destinations- East

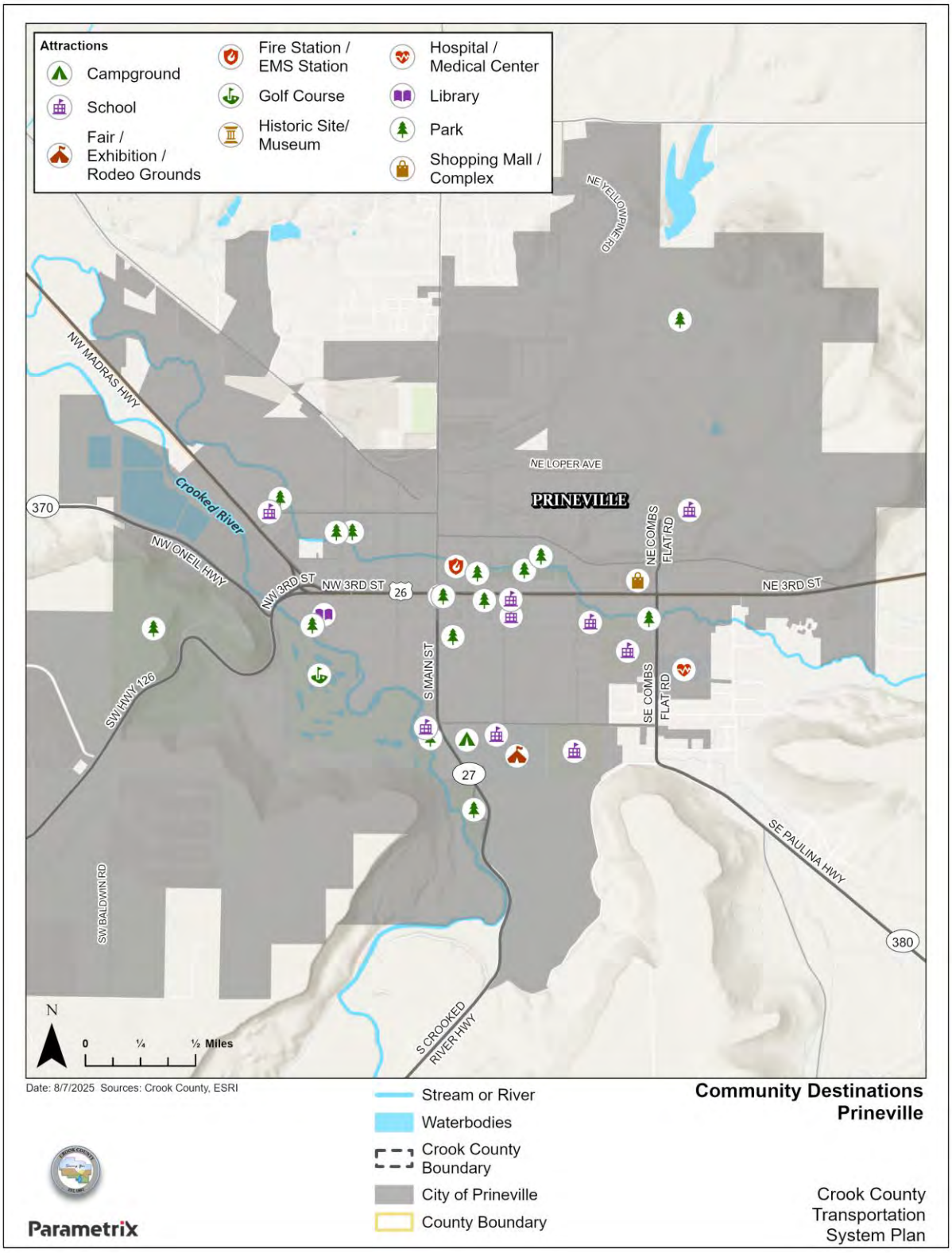


Figure 9. Community Destinations Prineville

1.4.2 Community Profile

As of 2022, Crook County was home to nearly 25,000 residents, with just over half (56.3%) living in unincorporated Crook County. The population has grown by more than 5% since 2020 and by nearly 30% since 2000, with unincorporated areas growing faster than the city of Prineville. By 2072, an estimated 42,000 people will live in Crook County, with approximately 40% of this population in unincorporated areas. More information about existing and projected populations can be found in Appendix A. Table 2 compares community characteristics in Crook County to characteristics for Oregon. The table is based on 2022 American Community Survey (U.S. Census Bureau 2023) data published by the U.S. Census Bureau. Notable demographic information includes the following:

- Crook County has a higher population of older adults (25%) compared to the state of Oregon (21%).
- Crook County has a slightly lower median household income ($74,969) compared to the state of Oregon ($76,632).
- Crook County has a slightly lower population of people who speak limited English (<1%) compared to the state of Oregon (2%).
- Crook County has a slightly higher population of people with disabilities (18%) compared to the state of Oregon (15%)

1.4.3 Future Land Use

Crook County is rapidly growing; more than 42,000 residents are expected to live in the county by 2072. This figure includes the Prineville UGB; however, nearly 18,000 people are expected to live in unincorporated Crook County. Growth in unincorporated areas is expected to occur primarily in and around the communities of Powell Butte and Juniper Canyon, including both residential development and tourism-focused resort communities.

It is important to note that while projections anticipate nearly 16,000 people will live in unincorporated Crook Canyon by 2047, recent population estimates from the U.S. Census are rapidly approaching this number. To account for the observed high rate of growth, the TSP evaluated two growth scenarios to understand potential impacts to the transportation system. The first scenario calculated growth rates based on the ODOT Future Highway Volume Table (ODOT 2024b), with additional PM peak hour trips included to represent expected developments in the Powell Butte area. The second scenario adjusted expected peak hour trips to also include a higher growth rate in Juniper Canyon based on recent development data maintained by the County. More information about these approaches can be found in Appendix A, Existing Conditions and Needs Analysis.

Table 2. Community Characteristics

	Crook County	Oregon
Population	24,987	4,240,137
Age		
Youth (under 18)	20%	20%
Older adults (65 years+)	25%	18%
Income Characteristics		
Median household income	$74,969	$76,632
Low-income population (Less than 200% federal poverty level)	26%	28%
Race and Ethnicity		
American Indian and Alaska Native alone	1%	<1%
Asian alone	<1%	4%
Black or African American alone	<1%	2%
Hispanic or Latino	8%	14%
Native Hawaiian and Other Pacific Islander alone	<0%	<1%
White alone	87%	73%
Some other race alone	0%	<1%
Two or more races	4%	5%
Other Characteristics		
Limited English-speaking households	<1%	2%
Persons with disabilities	18%	15%
Commuting Characteristics		
Households with zero vehicles available	1%	3%
Drove alone	81%	67%
Carpool	7%	9%
Public transportation	0%	3%
Walked	<1%	3%
Other means	<1%	3%
Worked at home	10%	15%

Source: U.S. Census Bureau, 2022 American Community Survey 5-Year Estimates, 2023.

2. Existing and Future Transportation Needs

This section summarizes the current state of Crook County's transportation system and includes an analysis of transportation system performance. This inventory and analysis—including current safety and mobility conditions for drivers, bicyclists, and pedestrians—guided development of solutions for this TSP update. More detail on the existing conditions and deficiencies of the transportation system can be found in Appendix A, Existing Conditions and Needs Analysis.

2.1 Motor Vehicle System

Crook County's motor vehicle system serves people driving to destinations in Crook County and connects people traveling across the region. As the region has rapidly grown in population, more people rely on the transportation network to get around, resulting in additional demands on major roadways. Roadways such as US 26, OR 126, OR 380, and OR 27 are critical routes that connect communities, especially across long distances; these roadways are owned and operated by ODOT. Other roadways, including SE Juniper Canyon Road and SW Powell Butte Highway, are owned and operated by Crook County. To best support continued growth and future transportation system demands, the TSP process included research, analysis, and engagement with Crook County residents to understand key conditions and priority issues. These issues are summarized below and detailed further in Appendix A, Existing Conditions and Needs Analysis.

2.1.1 Traffic Volumes and Congestion

- Analysis of four highway segments showed that all corridors are operating at a level of service (LOS) C or better. However, in future conditions, LOS is expected to decrease. SE Juniper Canyon Road south of OR 380 is expected to operate at LOS E.
- Community members identified congestion along SE Juniper Canyon Road south of OR 380 as a key concern.

2.1.2 Intersection Operations

- The volume-to-capacity (V/C) ratio (a standard measure of congestion) under current conditions at SW Powell Butte Highway and OR 126 exceeds the state's mobility target. The other study intersections do not exceed the mobility target. Community members identified congestion at the intersection of OR 126 and SW Powell Butte Highway as a key concern.
- Two growth scenarios were analyzed to evaluate future conditions. In the No Build scenario, two of the six study intersections exceeded their mobility targets. However, in the higher growth scenario, five of the six study intersections exceeded their mobility targets (see Table 3).

Table 3. Study Intersections' Operations Summary

Study Intersection	Mobility Targets	2023 Existing Traffic Operations V/C Ratio & LOS	2045 No-Build Traffic Operations V/C Ratio & LOS	2045 No-Build (Juniper Canyon Higher Growth) Traffic Operations V/C Ratio & LOS
SW Powell Butte Hwy & OR 126	Major: V/C < 0.70 Minor: V/C < 0.80	Major: 0.34 **Minor: 1.30**	Major: 0.45 **Minor: 10.36**	**Major: 0.84** **Minor: 2.40**
SW Williams Rd & OR 126	Major: V/C < 0.70 Minor: V/C < 0.80	Major: 0.49 Minor: 0.22	Major: 0.65 Minor: 0.42	**Major: 0.95** **Minor: 2.11**
SW Parrish Ln & OR 126	Major: V/C < 0.70 Minor: V/C < 0.80	Major: 0.44 Minor: 0.07	Major: 0.59 Minor: 0.07	**Major: 0.85** Minor: 0.21
S Powell Butte Hwy & SW Bussett Road	LOS E or LOS F with V/C ratio < 0.95	LOS Major St: A LOS Minor St: B	LOS Mainline: A LOS Side Street: C	LOS Mainline: A LOS Side Street: D
S Powell Butte Hwy & Alfalfa Rd	LOS E or LOS F with V/C ratio < 0.95	LOS Major St: A LOS Minor St: B	LOS Mainline: A LOS Side Street: D	LOS Mainline: A **LOS Side Street: F**
SE Juniper Canyon Rd & OR 380	Major: V/C < 0.80 Minor: V/C < 0.80	Major: 0.54 Minor: 0.34	**Major: 0.97** Minor: 0.62	**Major: 2.27** **Minor: 1.67**

Bold = Exceed Mobility Standards

LOS = level of service; V/C = volume to capacity.

2.1.3 Roadway Connections

- Community members expressed desire for a new access into and out of Juniper Canyon to address a number of issues including traffic congestion, access in the event of a blockage or inclement weather, and improved emergency services response. Community members also discussed a desire to have an evacuation route in the case of a natural disaster, such as during wildfires.

2.1.4 Pavement Conditions

- Crook County roadways have an overall pavement conditions index of 80 out of 100; this exceeds the County's goal of 70.
- ODOT-owned roadways generally range from fair to good pavement condition. However, OR 126 and several segments of OR 380 and OR 27 are rated as poor.

2.2 Bridges

Crook County maintains 111 bridges. Sufficiency ratings assigned by ODOT provide information about a bridge's condition, load capacity, dimensions, and materials. Ratings below 50 (on a scale of 0 to 100) signify priority for repair or replacement. Bridges may also be identified as functionally obsolete. Bridges are also classified based on length; bridges measuring over 20 feet in length are part of the National Bridge Inventory (NBI; FHWA 2025b) and are eligible for federal funding. Bridges less than 20 feet in length are not eligible for federal funding and must rely on County funding for repair or replacement.

The 2017 TSP identified NBI bridges in need of repair or replacement. Four locations remain in need of improvement:

- Bridge 19083 located on County Road 221 over Paulina Creek.
- Bridge 03291 on SW Powell Butte Highway over Powell Butte Canal.
- Bridge 032983 on SW Powell Butte Highway over Powell Butte Wasteway.
- Bridge 13C06A located on Johnson Creek Road NE over Ochoco Main Canal.

2.3 Safety

During the 5-year period between 2017 and 2021, 732 crashes in unincorporated Crook County resulted in 17 fatalities and 54 serious injuries. Fatal and serious injury crashes occurred most often in the western areas of the county, generally clustered near OR 126, SE Juniper Canyon Road, and north of Prineville. Crashes most frequently occurred along straight roadways (more than 47% of all reported crashes); 27% of all reported crashes occurred at horizontal curves. Fixed-object crashes were the most common crash type, representing over 40% of all reported crashes. Traveling too fast for conditions was the most frequent contributing factor (22%).

During this time, there were two pedestrian-involved crashes. One crash resulted in a pedestrian fatality on Millican Road near Reservoir Road. The second crash involved three pedestrians and resulted in suspected serious injuries. One bicycle-involved crash resulted in suspected serious injuries. Crash locations are shown by mode and severity in Figure 10.

Additional analysis was completed for both the TSP study intersections and segments along five highways or corridors to determine if any locations exceeded the critical crash rate or the expected number for crashes for similar locations. More information about these analyses can be found in Appendix A, Existing Conditions and Needs Analysis.

Based on this analysis, the following locations were identified as exceeding the critical crash rate:

- S Powell Butte Highway and SW Bussett Road
- OR 126 east of SW Powell Butte Highway
- OR 370 west of Lone Pine Road
- OR 370 east of Happy Hollow Drive
- OR 380 south of NE 3rd Street

Feedback throughout the TSP development emphasized that improving transportation safety in the county is a community priority.

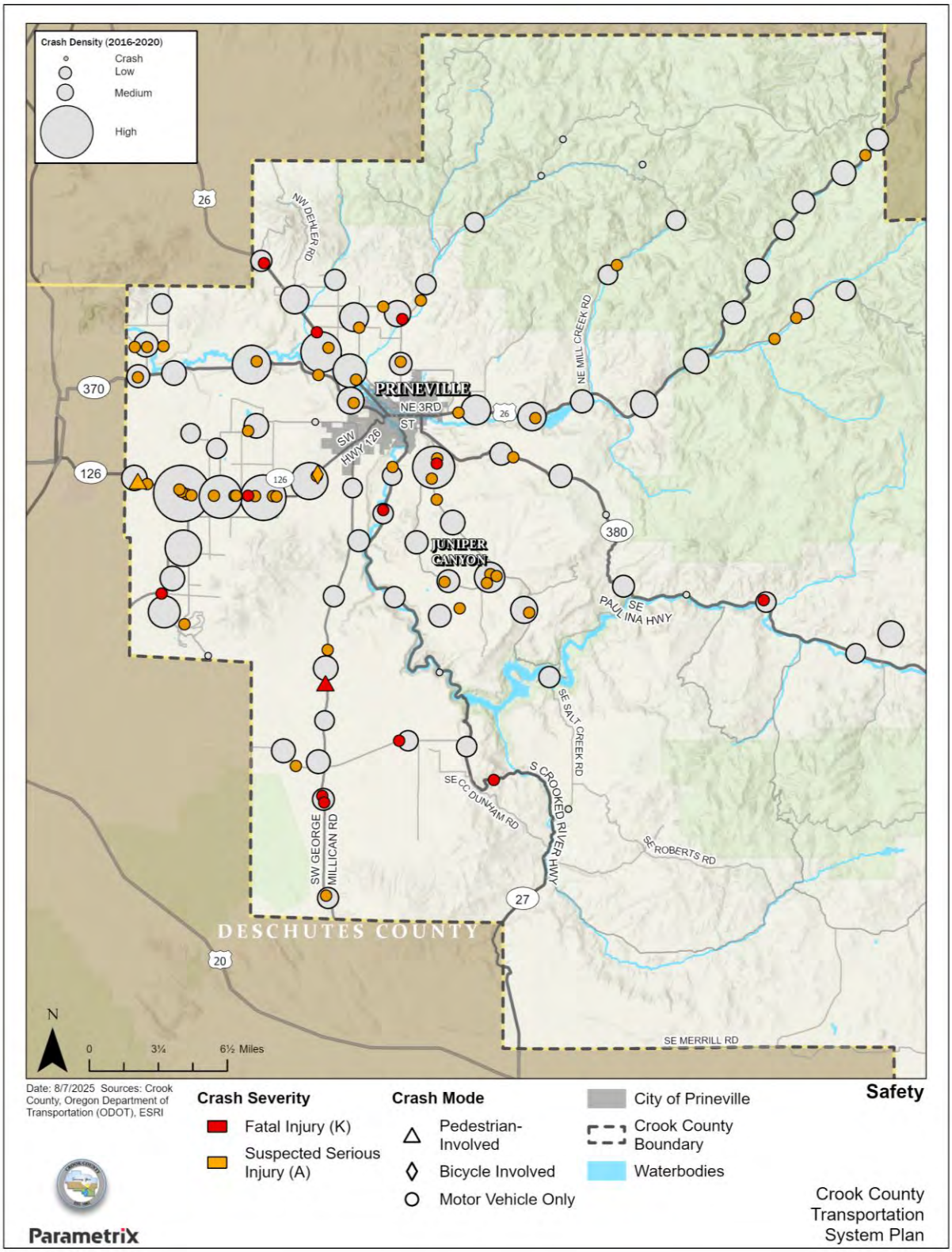


Figure 10. Crash History (2017–2021)

2.4 Active Transportation System

A well-connected and well-maintained active transportation system enables safer, more comfortable, and more convenient travel for people walking, rolling, or bicycling. A connected network of sidewalks, crosswalks, bicycle lanes, and multiuse trails can support local connections between communities and community destinations such as schools, parks, and other recreation areas. Existing active transportation conditions are described below.

2.4.1 Pedestrian System

No sidewalks exist in unincorporated Crook County. Connections to pedestrian generators—such as Juniper Pantry, Powell Butte Elementary School, and Paulina Elementary School—require travel along the roadway or shoulder, where available.

2.4.2 Bicycle System

Existing bicycle facilities in the county include designated bike lanes, multiuse trails, and wide shoulders. However, existing facilities are intermittent and disconnected. Where no designated facilities are available, bicyclists must share the road with motor vehicles; only the most confident, experienced riders are likely to be comfortable sharing high-speed rural roads.

Crook County also features popular recreational routes along gravel or primitive roads. Located in areas such as Ochoco National Forest, these routes provide riders with a low-traffic, immersive ride experience in nature. Featured on popular recreational websites, these routes can be instrumental in attracting more people to ride bicycles and raising awareness of people riding bicycles for transportation on roads. While gravel routes generally provide a traffic-free experience for recreational bicycle riders, reaching these locations by bike often requires travel along high-stress roadways with no paved shoulder, such as NE McKay Creek Road. This can discourage less-confident riders from riding to the beginning of their recreational route and limit access to recreational areas.

Figure 11 displays the locations and widths of shoulders along ODOT-owned roadways. Where present in the unincorporated county, they are typically less than 5 feet wide.

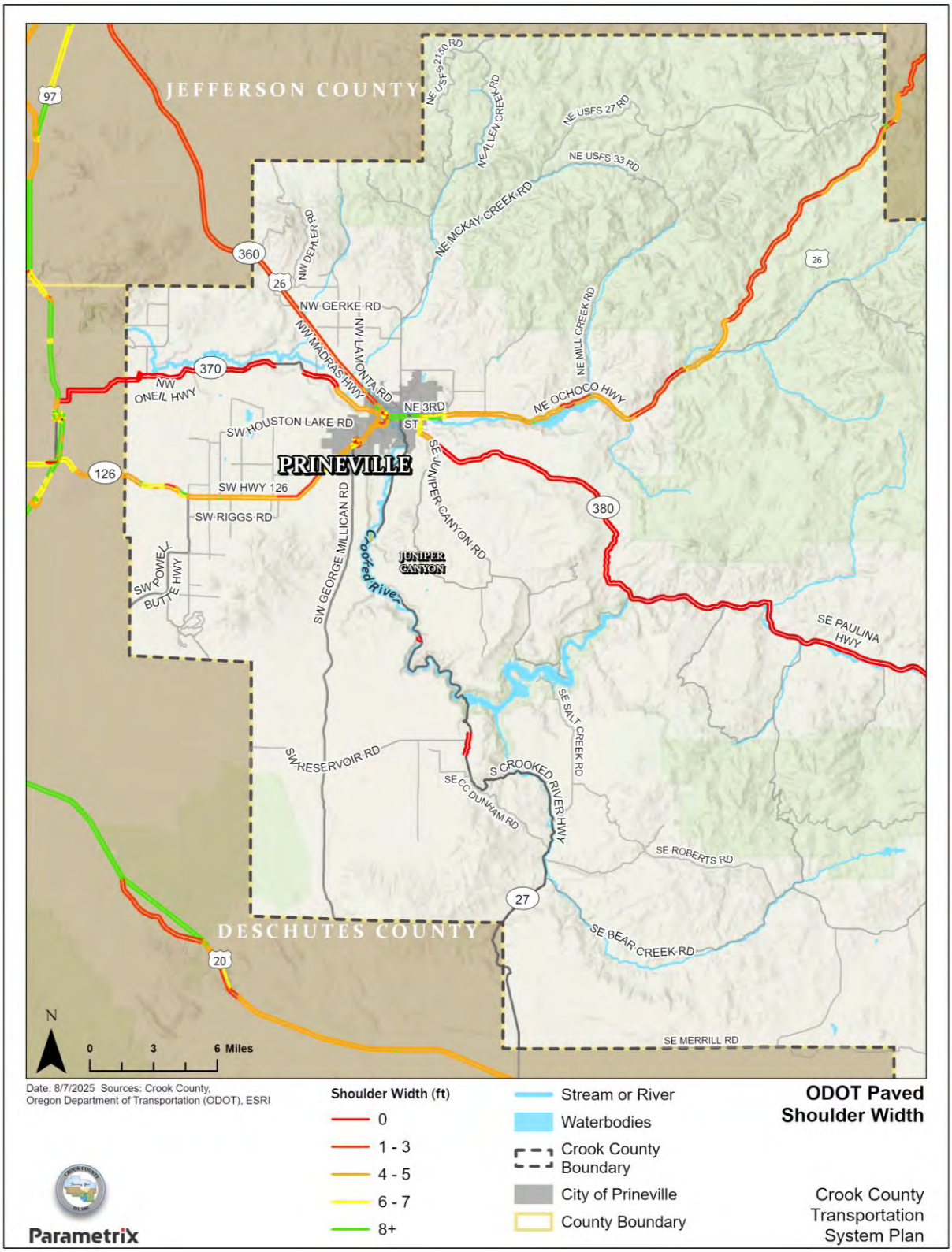


Figure 11. ODOT Paved Shoulder Width

2.5 Public Transportation

Cascades East Transit (CET) provides fixed-route and dial-a-ride services in limited areas of the county. The fixed-route service Route 26 runs on weekdays and connects Prineville to Redmond. Route 26 has one stop in Powell Butte at a church that serves as a park and ride. Transit vehicles provide bike racks for multimodal integration. Dial-a-ride service is available on weekdays in some areas of the county. The CET service route is shown on Figure 12.

Rural communities have desired expanded dial-a-ride coverage as well as enhanced fixed-route and local service. In the CET 2040 Transit Master Plan, CET hopes to work toward a higher level of service in Crook County for the Route 26 bus line by increasing the frequency and length of service between Prineville and Redmond and Bend (CET 2020). The plan also indicates that Route 26 will interline with Route 24 to provide a one-seat ride to Bend, add weekend service, re-route to serve the Redmond Airport and Central Oregon Community College, and improve accessibility for residents in more rural areas of the county. The transit master plan also identifies extending dial-a-ride service hours to 5:30 p.m., an expansion that is in effect as of this TSP, as well as adding evening and Saturday limited circulation as part of a Route 26 flex-route.

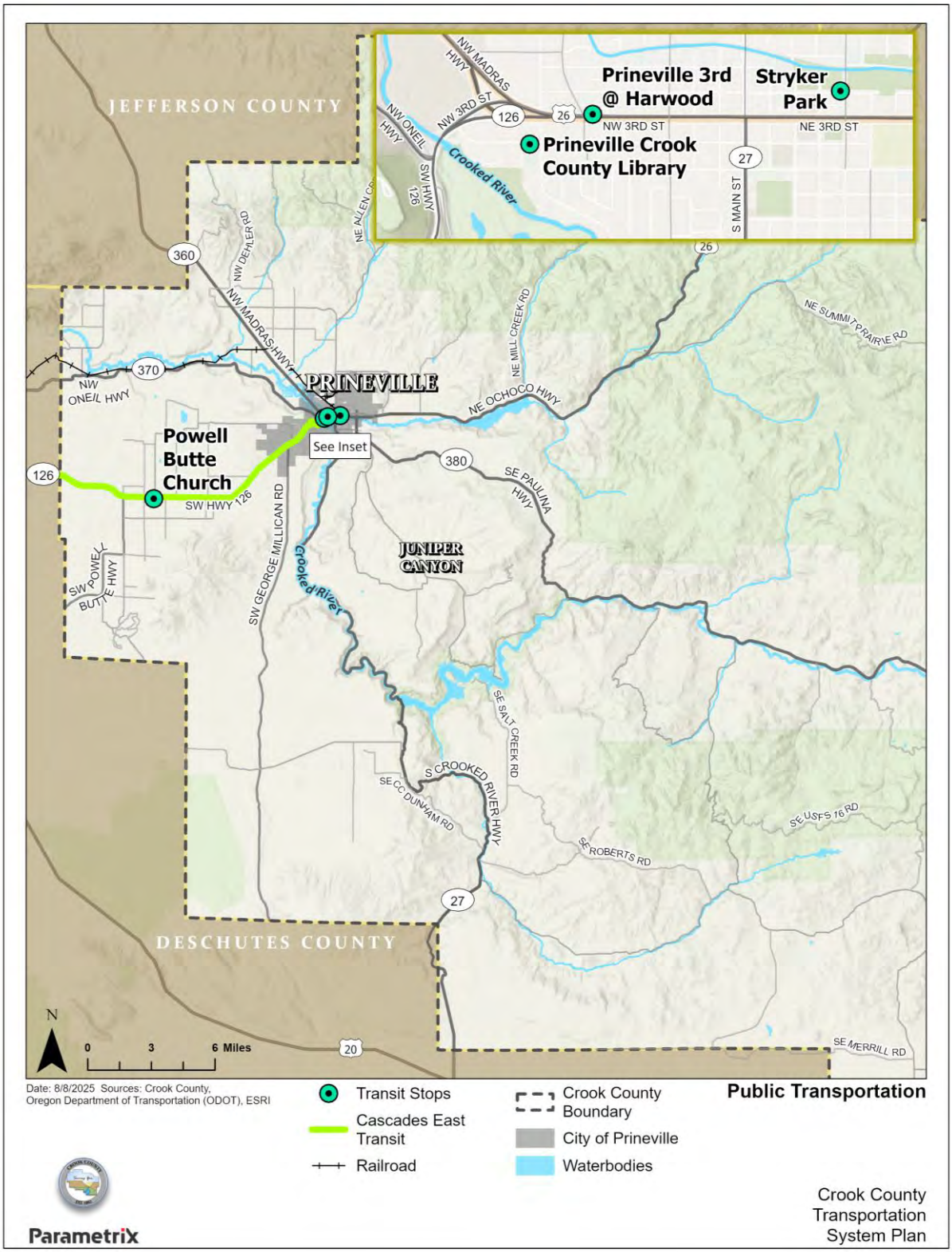


Figure 12. Public Transportation

2.6 Freight

Freight is primarily moved by truck and rail. US 26 (west of Prineville) and OR 126 both serve as designated state freight routes. These routes are also designated as reduction review routes whose vehicle-carrying capacity cannot be reduced unless safety or access factors require a reduction. Local governments can also request an exemption. The Prineville Freight Depot and Prineville-Crook County Airport, both accessible by OR 126, support intermodal connections. Industrial locations within the unincorporated area of the county such as the Crook County Landfill and Facebook receive freight from a variety of roadways such as OR 126, which serves a connection between Bend and Prineville and therefore may experience higher freight volumes than other roadways. In addition, Millican Road is a common truck route that provides access to the industrial land on the eastern side of Prineville.

2.7 Railroad

The City of Prineville Railway operates a Class III short-line freight railroad. This is the only railroad in Crook County. The railway carries a variety of products including consumer and forest products, chemicals, and building materials. The railway short line connects with Class I railroads in Redmond on the Oregon Trunk Line that runs from the Columbia River to Klamath Falls. The existing railroad ends west of the Main Street and 10th Street intersection north of downtown Prineville. Roadway traffic volumes would increase if rail service were discontinued due to the large quantities of freight moved by the railway.

There are six public railroad crossings in Crook County (not including locations within the Prineville UGB). Of these, five are at-grade crossings, and in one location the roadway (US 26) crosses under the rail. Table 4 lists these crossing locations. As shown in Figure 13, there are also approximately 30 rail crossings that involve private roadways. There is no passenger service for residents of Crook County. The nearest passenger service is available on Amtrak at the passenger station in Chemult.

Table 4. Railroad Crossing Locations

Location	Crossing Type	Road Authority
Gumpert Rd	At Grade	Crook County
NW Lone Pine Rd	At Grade	Crook County
Elliot Ln	At Grade	Crook County
NW Bus Evans Ln	At Grade	Crook County
US 26	Railroad Overpass	ODOT
NW Elliot Ln	At Grade – Spur	Crook County

Source: ODOT TransGIS, 2024.

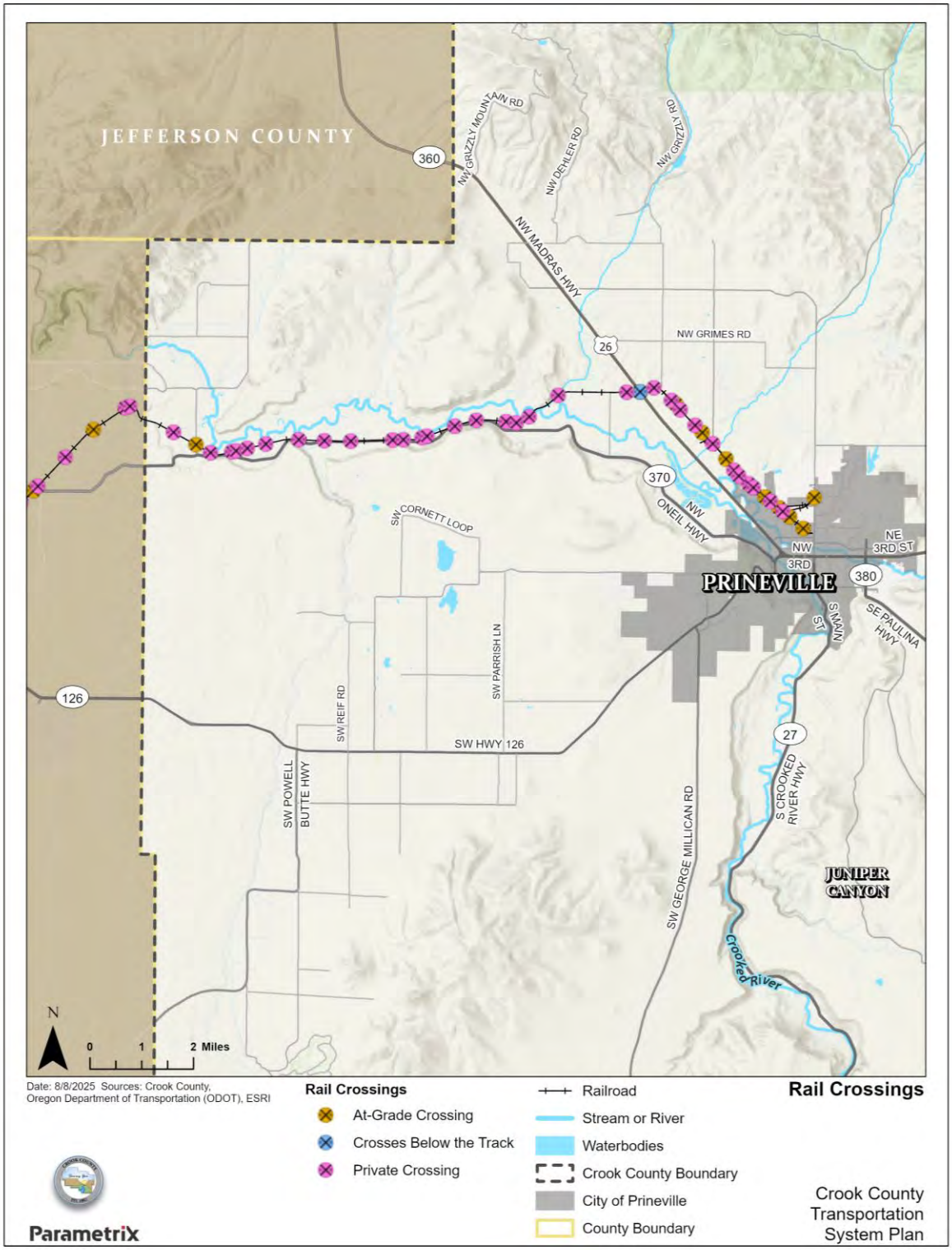


Figure 13. Rail Crossings

3. Goals

The project team developed goals and a criteria framework for evaluating and screening TSP projects. This section summarizes the 2025 TSP goals.

3.1 Transportation System Goals

The 2025 TSP goals reflect the vision for Crook County's transportation system while acknowledging the goals established in the 2017 TSP. The goals listed below will guide the implementation of new projects, programs, and policies for the Crook County transportation system. A complete description of the goals, objectives, and evaluation criteria can be found in Appendix B, Goals, Objectives, Evaluation Criteria.

- **Goal 1. Mobility and Connectivity** -- Promote a transportation system that links rural communities to key destinations in the county, Prineville, and adjacent counties, and serves existing and future needs for transporting goods and people.
- **Goal 2. Economic Development** -- Plan a transportation system that supports existing industry, encourages economic development in the county, and responds to population growth in Crook County and adjacent communities.
- **Goal 3. Safety** -- Provide a transportation system that promotes the safety of current and future travel modes for all users.
- **Goal 4. Multimodal Users** -- Provide a multimodal transportation system that permits safe and efficient transport of people and goods through active modes, which may also provide a benefit in improved health and environment.
- **Goal 5. Environment** – Provide a transportation system that balances transportation services with the need to protect the environment.
- **Goal 6. Planning and Funding** – Maintain the safety, physical integrity, and function of the County's multimodal transportation network, consistent with Goal 6 of the Oregon Transportation Plan, which focuses on creating a transportation funding structure that serves both current and future needs (ODOT 2023b).
- **Goal 7. Equity** -- Provide access to the transportation system for all users.

4. Transportation System Plan

The TSP describes projects, policies, and programs to fulfill Crook County's transportation needs. Where applicable, projects from the 2017 TSP were carried forward. The development of new projects and project prioritization were guided by review of prior planning efforts and analyzing existing needs and future conditions. Public involvement from Crook County residents also shaped projects and priorities when addressing multiple needs across the county. This chapter includes a comprehensive summary of the TSP projects, what they address, their costs, and prioritization considerations. More information about proposed and preferred improvements can be found in Appendix C, Solutions Analysis and Funding Program, and Appendix D, Preferred Solutions.

4.1 Transportation System Plan Projects Summary

The TSP projects include improvements that enhance safety and connectivity in Crook County, with consideration for needs both today and in the future. The complete list of projects is summarized in Table 5.

Cost estimates were developed for most improvements and represent planning-level estimates to guide project programming and prioritization. Projects are prioritized by time frame as near-term (0 to 5 years), medium-term (5 to 10 years), and long-term (>10 years) based on the need, costs, and perceived level of implementation difficulty. Some projects, including those along OR 126, would be completed in partnership with ODOT.

Table 5. Transportation System Plan Projects Summary

Project ID	Project Name/Location	Improvement Time Frame	Cost Estimate	Possible Funding Source
R-1A	OR 126 & Powell Butte: ▪ Construct a single-lane roundabout.	Medium	$3,400,000	ODOT, Development, Local Funds
R-2A	OR 126 & SW Williams Rd: ▪ Construct a single-lane roundabout. ▪ Requires an Intersection Control Evaluation to determine appropriate traffic control change.	Medium	$3,400,000	ODOT, Safe Routes to School, Local Funds
R-3A	OR 126 & SW Parrish Ln: ▪ Widen OR 126 from SW Valley View Rd to Stillman Rd (center two-way left-turn lane).	Near	$900,000	ODOT, Local Funds
R-4A	SE Juniper Canyon Rd & OR 380: ▪ Realign intersection with left acceleration lane.	Long	$2,100,000	Local Funds
JC-1	Juniper Canyon Access: ▪ Develop new roadway connection in Juniper Canyon between Davis Loop and OR 27.	Near	$9,300,000 to $20,000,000	Local Funds, Grants
JC-2	Juniper Canyon Access: ▪ Develop new gravel roadway connection in Juniper Canyon between SE Simpson Rd and OR 380	Near	$24,000,000 to $52,000,000	Local Funds, Grants

Project ID	Project Name/Location	Improvement Time Frame	Cost Estimate	Possible Funding Source
R-5	OR 126 at Kissler Rd.	Medium	$20,000	ODOT
R-6	OR 126 at Copley Rd.	Medium	$20,000	ODOT
R-7	OR 126 at Minson Rd.	Medium	$20,000	ODOT
R-8	OR 126 at Yates Rd.	Medium	$20,000	ODOT
R-9	OR 126 at Wiley Rd.	Medium	$20,000	ODOT
BR-1	County Road 221 bridge over Paulina Creek (NBI Bridge 19083): ▪ Study cost of repairing or replacing this functionally obsolete bridge.	Medium	$30,000	Local Funds, Grants
BR-2	SW Powell Butte Hwy bridge over Powell Butte Canal (NBI Bridge 03291): ▪ Replace bridge.	Medium	$1,500,000	Grants
BR-3	SW Powell Butte Hwy bridge over Powell Butte Wasteway (NBI Bridge 03293): ▪ Replace bridge.	Medium	$1,500,000	Grants
BR-4	Johnson Creek Rd NE bridge over Ochoco Main Canal (NBI Bridge 13C06A): ▪ Replace bridge.	Medium	$1,500,000	Grants
BR-5	Non-NBI bridge replacement program: ▪ Replace one non-NBI bridge per year.	Medium	$4,500,000	Local Funds
S-1	S Powell Butte Hwy & SW Bussett Rd: ▪ Install rumble strips along the curve. ▪ Implement variable speed limits that lower in icy conditions. ▪ Install lighting. ▪ Reassess curve warning signage and check sign spacing. ▪ Install acceleration lanes on S Powell Butte Hwy. ▪ Reconstruct intersection to simplify circulation patterns and turning movements.	Long	$870,000	Local Funds, Grants
S-2	Rimrock Acres Loop & OR 370: ▪ Install lighting. ▪ Install raised pavement markings. ▪ Evaluate existing curve warning signage locations and warning speeds. ▪ Install curve chevrons, guardrail, and rumble strips.	Medium	$180,000	Local Funds, Grants
S-3A	S Powell Butte Hwy & Alfalfa Rd: ▪ Install lighting and curve chevrons along S Powell Butte Hwy. ▪ Reassess curve warning signage and check for sign spacing.	Near	$71,000	Local Funds, Grants
S-4	OR 126 east of Powell Butte Hwy to Copley Rd: ▪ Widen edge line striping.	Near	$260,000	ODOT

Project ID	Project Name/Location	Improvement Time Frame	Cost Estimate	Possible Funding Source
S-5	OR 370 east of Happy Hollow Dr: ▪ Install rumble strips and/or wider edge line striping.	Near	$22,000	ODOT
S-6	OR 380 south of NE 3rd St: ▪ Evaluate access management along the corridor.	Near	N/A	ODOT
S-7	Juniper Canyon Rd variable speed limit: ▪ Implement variable speed limit based on weather conditions.	Near	TBD based on future evaluation	Local Funds
S-8	Juniper Canyon Rd alignment delineation: ▪ Add raised pavement markers on SE Juniper Canyon Rd. ▪ Add edge-line rumble strips to SE Juniper Canyon Rd.	Near	$94,000	Local Funds
S-9	Juniper Canyon Rd ▪ Add or enhance horizontal curve signage and markings.	Near	$10,000	Local Funds
S-10	Powell Butte Rd ▪ Add or enhance horizontal curves pavement markings.	Near	$10,000	Local Funds
S-11	Davis Loop Rd ▪ Remove trees within clear zone.	Medium	TBD based on future study	Local Funds
S-12	Powell Butte (OR 126) ▪ Install/maintain speed feedback signs.	Medium	$50,000	ODOT
S-13	US 26 ▪ Add systemic safety treatments, including edgeline rumble strips.	Medium	$50,000	ODOT
S-14	Lamonta Rd ▪ Install horizontal curve signage, speed feedback sign, and delineators.	Medium	$50,000	Local Funds
S-15	OR 126 ▪ Install systemic safety treatments, including edgeline and centerline rumble strips.	Medium	$50,000	ODOT
B-1	OR 126 from SW Powell Butte Hwy to Prineville urban growth boundary: ▪ Add shared-use trail along the south side of OR 126.	Medium	$6,600,000	ODOT, Local Funds
B-2	Barnes Butte Rd: ▪ Add paved shoulder to Barnes Butte Rd.	Long	$3,800,000	Local Funds
B-3	Barnes Butte Shared-Use Trail Connections: ▪ Add shared-use trail connecting Barnes Butte Rd to Iron Horse shared-use trail in Prineville.	Long	$4,900,000	Local Funds

Project ID	Project Name/Location	Improvement Time Frame	Cost Estimate	Possible Funding Source
B-4	OR 27 Scenic Bikeway Bicycle Hub. ▪ Construct a bicycle hub, or "rest stop," for hikers, bicyclists, recreationalists, and community members along the OR 27 scenic bikeway corridor; provide small shelter, information kiosk (map/community calendar), bicycle tool station, and bench/sitting area.	Long	$30,000	Private Partnership
B-5	US 26 (Madras Highway) shared-use trail: ▪ Extend existing shared-use trail northwest to the county line parallel to US 26.	Long	$7,100,000	ODOT, Local Funds
B-6	Houston Lake Rd, SW Williams Rd, and Reif Rd ▪ Add shared-use trails.	Long	$10,500,000	Local Funds
B-7	Juniper Canyon Rd (south) ▪ Add paved shoulders.	Long	$5,400,000	Local Funds
B-8	OR 27 ▪ Add shared-use trail to connect to planned path in Prineville.	Medium	$4,400,000	ODOT, Local Funds
B-9	Countywide ▪ Add bicycle route signage.	Medium	$50,000	Local Funds
P-1A	OR 126 and SW Williams Rd: ▪ Install sidewalk, curb and gutter, curb ramps, and intersection lighting. ▪ Install marked crosswalks on all four legs of the intersection.	Medium	$2,900,000	ODOT, Local Funds, Sidewalk Improvement Program
T-1	Crook County Service Enhancement Plan: ▪ Institute evening and Saturday limited circulation as part of Route 26 flex route.	Medium	Already adopted as part of other plans.	
T-2	Fixed-route enhancements to increase service in Prineville and expand connections to destinations.	Long	TBD	CET City of Prineville Local Funds
T-3	Dial-a-ride enhancements and transportation network company encouragement.	Near	Already adopted as part of other plans.	
T-4	Transit community outreach.	Near	Variable	ODOT City of Prineville Local Funds
F-1	Bus Evans Rd and Elliott Ln.	Long	$15,000,000	Local Funds Grants
F-2	US 26 railroad bridge feasibility study.	Medium	$35,000	ODOT

CET = Cascades East Transit; NBI = National Bridge Inventory; ODOT = Oregon Department of Transportation; TBD = to be determined.

4.2 Motor Vehicle System Plan

The motor vehicle system plan includes improvements to the roadway network, including intersection operations, safety, bridges, and access management. The improvements respond to needs identified both through analysis and community engagement. Together, these projects seek to reduce conflicts between users, enhance safety, reduce congestion, and improve connections between destinations.

4.2.1 Functional Classification

Roadways are organized by functional classifications, which help describe the purpose and scale of each segment, including the amount and type of vehicular traffic expected, elements to support active and shared modes of travel, and the design of the roadway. Functional classifications for Crook County roadways are shown in Figure 14. These functional classifications include the following:

- **Principal arterials** primarily provide mobility between large population centers or regional activity generators. Motor vehicle movement is emphasized over local access connections.
- **Minor arterials** serve mobility needs over local access, but they may provide important local connections. Minor arterials have a narrower right-of-way than major arterials to better address local needs.
- **Major collectors** connect local roads to arterials. They often serve shorter trips than arterials and may have lower posted speeds.
- **Minor collectors** also facilitate connections between regional and local roadway networks but serve lower volumes of traffic. They can also provide circulation within neighborhoods or other areas. Intersections are typically spaced closer together compared to arterials or major collectors.
- **Local roads** provide direct access to destinations and typically serve shorter trips. Local roads do not typically support through-trips, and travel is generally at lower speeds than on other roadway classifications.

Proposed design standards are shown in Table 6 for each functional classification. While these represent the minimum design standards, conditions may require different elements and dimensions.

Table 6. Functional Classification and Proposed Minimum Design Standards

Functional Classification	ROW Width (feet)	Paved Width (feet)	Travel Lane Width (feet)	Paved Shoulder Width	Surface Type	Max. Grade	Min. Intersection Spacing	Min. Access Spacing (feet)	Design Speed, Min. Tang., Min. Curve	Recommended AADT Range
Principal Arterial	100	State Highway – See Oregon Department of Transportation								
Minor Arterial	80	28	12	5–7 ft	6 in HMAC	6%	0.5 miles	500	AASHTO Green Book (AASHTO 2018)	>5,000
Major Collector	80	28	12	4–6 ft	4 in HMAC	8%	0.5 miles	500		1,500–5,000
Minor Collector	80	28	12	4–6 ft	4 in HMAC	8%	0.25 miles	300		400–1,500
Local	60	24	12	N/A	4 in HMAC	10%	150 feet	N/A		<400

AADT =annual average daily traffic; AASHTO = American Association of State Highway and Transportation Officials; ft = feet; HMAC = hot-mixed asphalt concrete; in = inches; max. = maximum; min. = minimum; ROW = right-of-way; tang. = tangent.

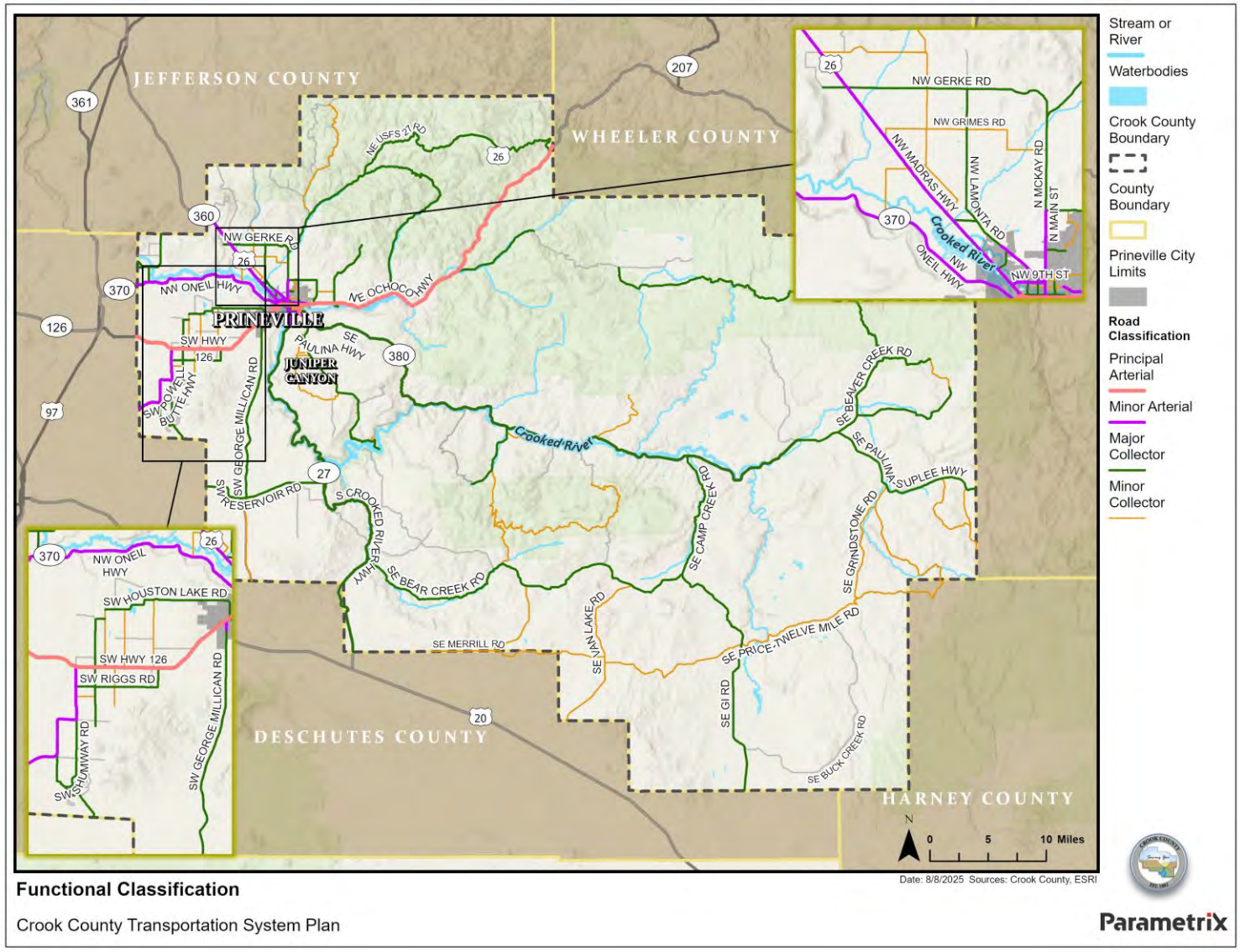


Figure 14. Functional Classification

4.2.2 Roadway and Intersection Improvements

As the county grows, Crook County needs new streets to serve the growing population. The TSP identifies one new roadway connection in Juniper Canyon to alleviate traffic congestion, provide an alternate access route for the community, and expand options that limit travel through Prineville. This new connection also creates an opportunity to include multimodal improvements to support people walking and biking.

The TSP also identifies intersection improvements to address current and anticipated future congestion, as well as improve safety for all roadway users. Several roadway and intersection projects are described in more detail in the Big Moves section of this plan. More information about the remaining projects is included below. Roadway and intersection improvements are summarized in Table 7 and shown in Figure 17.

4.2.2.1 Project R-4A: Realign intersection with left acceleration lane at SE Juniper Canyon Road and OR 380.

The intersection of SE Juniper Canyon Road and OR 380 is a critical connection between the growing Juniper Canyon community and Prineville. The current configuration is skewed, limiting sight distance and impacting turning movements. This intersection is expected to exceed mobility targets in the 2045 no-build higher growth scenario. The preferred solution for this location is to realign the intersection and add a left acceleration lane, as shown in Figure 15. This project will improve sight distances, reduce vehicle time in the intersection, and reduce potential conflict points. This project is expected to meet mobility targets for intersection performance and would be designed to ensure that farm vehicles and freight would be able to safely navigate the intersection.



Figure 15. SE Juniper Canyon Road and OR 380 Preferred Solution

4.2.2.2 Project R-3A: Construct a center two-way left-turn lane at the intersection of OR 126 and SW Parrish Lane.

OR 126 and SW Parrish Lane is expected to exceed mobility targets in the future no build higher growth scenario. The existing roadway configuration does not include a dedicated left turn lane on the west leg of the intersection to facilitate turns onto SW Parrish Lane. Based on analysis of existing traffic volumes, this intersection meets turn lane warrants.

The preferred solution for this location is to widen OR 126 from SW Valley View Road to Stillman Road to include a center two-way left turn lane, as shown in Figure 16. A center two-way left turn lane would improve traffic operations and meet mobility targets; marking and other physical elements could also be included to help visually narrow the roadway and delineate travel lanes, which would encourage vehicles to slow.

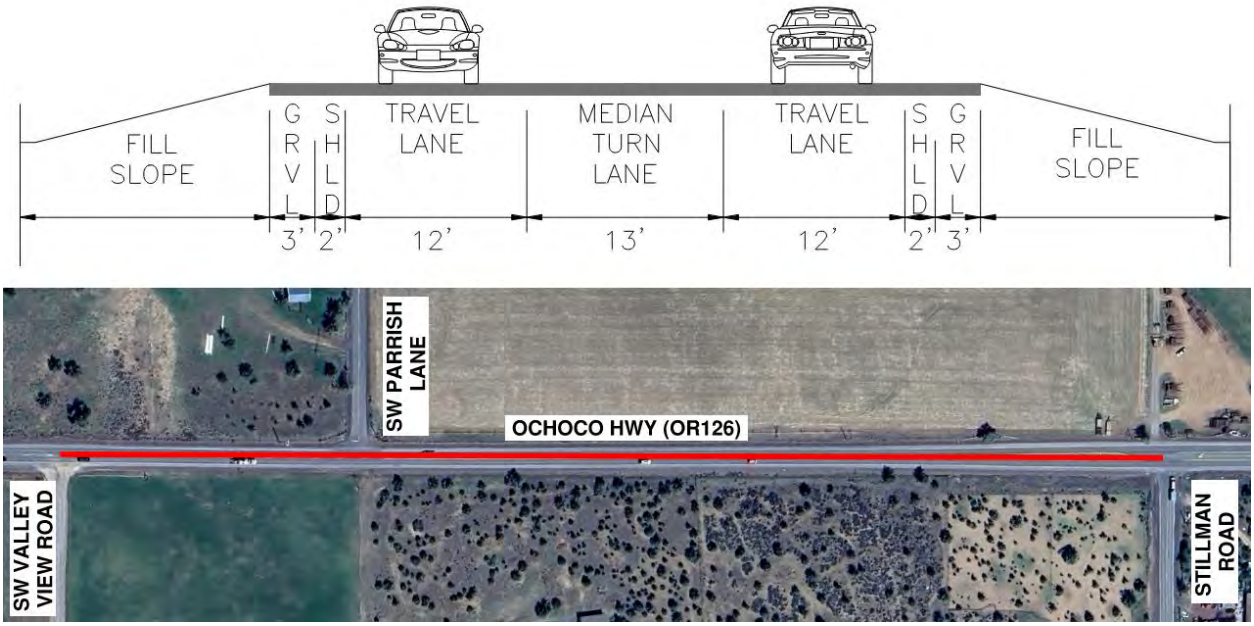


Figure 16. OR 126 and SW Parrish Lane Preferred Solution

Table 7. Intersection and Operations Improvements

Project ID	Project	Needs Addressed	Priority	Cost Estimate
R-1A	OR 126 & Powell Butte Hwy: ▪ Construct a single-lane roundabout.	▪ Reduces traffic congestion and delays in the near term. ▪ Maintains all turning movements while reducing turning movement conflict. ▪ Increases safety.	Medium	$3,400,000
R-2A	OR 126 & SW Williams Rd: ▪ Construct a single-lane roundabout.	▪ Improves safety performance for all roadways users. ▪ Provides traffic calming. ▪ Requires an Intersection Control Evaluation to determine the appropriate intersection control change.	Medium	$3,400,000
R-3A	OR 126 & SW Parrish Ln: ▪ Widen OR 126 from SW Valley View Road to Stillman Road (center two-way left-turn lane)	▪ Reduces traffic congestion and delay. ▪ Opportunity to add medians/physical markers on the east leg to encourage vehicles to slow.	Near	$900,000
R-4A	SE Juniper Canyon Rd & OR 380: ▪ Realign intersection with left acceleration lane.	▪ Improves intersection safety while retaining existing movements. ▪ Reduces conflict points, helping drivers avoid misjudging gaps in traffic ▪ Reduces traffic congestion and delay.	Long	$2,100,000
JC -1	Juniper Canyon Access: ▪ Develop new roadway connection in Juniper Canyon between Davis Loop and OR 27.	▪ Improves emergency access in Juniper Canyon.	Medium/Long	$9,300,000 to $20,000,000
JC-2	Juniper Canyon Access: ▪ Develop new gravel roadway connection in Juniper Canyon between SE Simpson Rd and OR 380	▪ Creates a new gravel emergency evacuation route for Juniper Canyon.	Near	$24,000,000 to $52,000,000

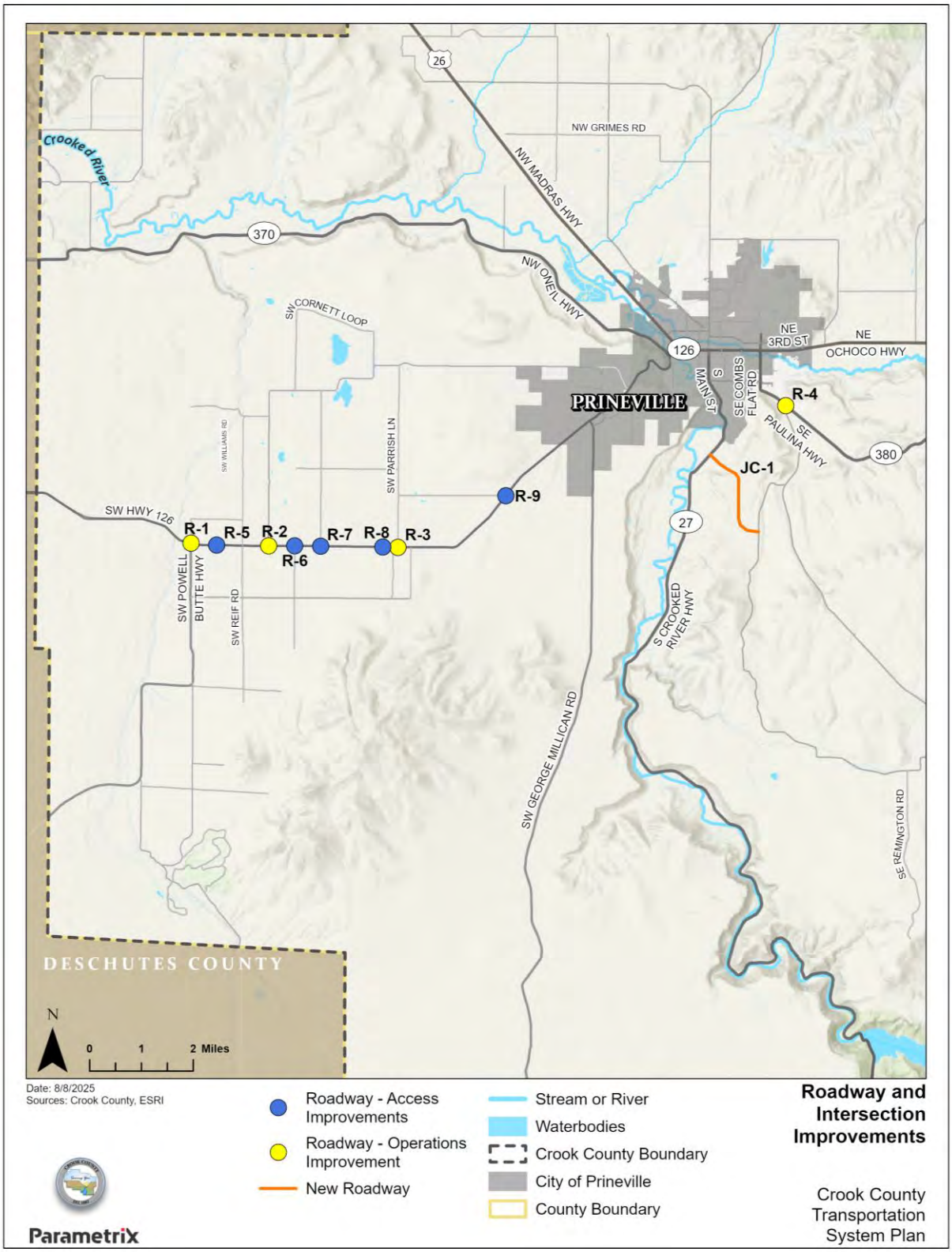


Figure 17. Roadway and Intersection Improvements

4.2.3 Access Management Improvements

Providing adequate access to other public roadways, land uses, and destinations is a critical part of an effective transportation system. However, it is necessary to balance access with the need for mobility and safety on the system. Providing access via other public streets and driveways to land uses creates friction from a traffic operations perspective; it may reduce mobility and introduces points of conflict that can increase the potential for crashes. Proposed access improvements align with improvements proposed in the 2017 TSP and the OR 126 Corridor Plan (Crook County 2012). The locations are summarized and shown in Figure 17.

Table 8. Intersections that Need to Balance Destination Access with Mobility and Safety of the Transportation System

Project ID	Project	Priority	Cost Estimate
R-5	OR 126 at Kissler Rd	Medium	$20,000
R-6	OR 126 at Copley Rd	Medium	$20,000
R-7	OR 126 at Minson Rd	Medium	$20,000
R-8	OR 126 at Yates Rd	Medium	$20,000
R-9	OR 126 at Wiley Rd	Medium	$20,000

4.2.4 Bridge Improvements

Table 9 summarizes bridges in the study area that are included in the NBI database and that are eligible for federal funding for repair. These bridges were identified for replacement or repair. In addition to these projects, the TSP recommends that the County continues to replace one non-NBI bridge per year. This is summarized in Project BR-5 and represents the anticipated cumulative cost.

Table 9. Bridge Improvements

Project ID	Project	Needs Addressed	Priority	Cost Estimate
BR-1	County Road 221 bridge over Paulina Creek (NBI Bridge 19083): ▪ Study cost of repairing or replacing this functionally obsolete bridge.	▪ Identifies future bridge cost needs.	Medium	$30,000
BR-2	SW Powell Butte Highway bridge over Powell Butte Canal (NBI Bridge 03291): ▪ Replace bridge.	▪ Replaces low-sufficiency bridge.	Medium	$1,500,000
BR-3	SW Powell Butte Highway bridge over Powell Butte Wasteway (NBI Bridge 03293): ▪ Replace bridge.	▪ Replaces low-sufficiency bridge.	Medium	$1,500,000
BR-4	Johnson Creek Road NE bridge over Ochoco Main Canal (NBI Bridge 13C06A): ▪ Replace bridge.	▪ Replaces low-sufficiency bridge.	Medium	$1,500,000
BR-5	Non-NBI bridge replacement program: ▪ Replace one non-NBI bridge per year.	▪ Repairs or replaces non-NBI bridges.	Medium	$4,500,000

NBI = National Bridge Inventory

4.2.5 Safety Improvements

Safety improvements are intended to increase safety for all roadway users and would be made on both intersections and roadway segments. These improvements were developed based on the existing conditions analysis and feedback received from the Crook County community. Analysis identified one study intersection as exceeding the critical crash rate, meaning that there were more reported crashes than expected for similar intersections. The preferred improvement for the intersection of S Powell Butte Highway and SW Bussett Road is described below in further detail.

Improvements identified in the 2017 TSP are also included. Table 10 summarizes the recommended safety improvements, and Figure 19 shows the projects' locations. Crook County is also developing a transportation safety action plan that will identify other needed safety improvements in the county.

4.2.5.1 Project S-1: Realign intersection and install acceleration lanes at S Powell Butte Highway and SW Bussett Road.

The intersection of S Powell Butte Highway and SW Bussett Road (see Figure 18) exceeds the critical crash rate based on the TSP's safety analysis. Community members also identified safety concerns in this area, especially due to poor visibility and high travel speeds. The recommended project in the TSP would reconstruct the intersection, install acceleration lanes on S Powell Butte Highway, and add rumble strips and lighting. Acceleration lanes were added to this project based on community feedback. The project would also incorporate variable speed limits to encourage slower driving in bad weather and reassess warning signage at the roadway curve.



Figure 18. S Powell Butte Highway and SW Bussett Road

Table 10. Safety Improvements

Project ID	Project	Needs Addressed	Cost Estimate	Priority
S-1	S Powell Butte Hwy & SW Bussett Rd: ▪ Install rumble strips along the curve. ▪ Implement variable speed limits that lower in icy conditions ▪ Install lighting. ▪ Reassess curve warning signage and check sign spacing. ▪ Install acceleration lanes on S Powell Butte Highway. ▪ Reconstruct intersection to simplify circulation patterns and turning movements.	▪ Improves visibility and awareness. ▪ Simplifies travel patterns. ▪ Aligns with ODOT and AASHTO standards. ▪ Responds to and mitigates inclement weather conditions and associated safety challenges. ▪ Reduces roadway departure crashes.	$870,000	Long
S-2	Rimrock Acres Loop & OR 370: ▪ Install lighting. ▪ Install raised pavement markings. ▪ Evaluate existing curve warning signage locations and warning speeds. ▪ Install curve chevrons, guardrail, and rumble strips.	▪ Improves visibility and awareness at curve and intersection. ▪ Enhances curve navigation.	$180,000	Medium
S-3A	S Powell Butte Hwy & Alfalfa Rd: ▪ Install lighting and curve chevrons along S Powell Butte Hwy. ▪ Reassess curve warning signage and check for sign spacing.	▪ Improves visibility and awareness at curve and intersection. ▪ Enhances curve navigation.	$71,000	Near-
S-4	OR 126 east of Powell Butte Hwy to Copley Rd: ▪ Widen edge line striping.	▪ Improves visibility and awareness. ▪ Location identified in ODOT SPIS (2018).	$260,000	Near
S-5	OR 370 east of Happy Hollow Dr: ▪ Install rumble strips and/or wider edge line striping.	▪ Improves visibility and awareness. ▪ Reduces roadway departure crashes. ▪ Enhances roadway navigation.	$22,000	Near
S-6	OR 380 south of NE 3rd St: ▪ Evaluate access management along the corridor.	▪ Improved access management can reduce potential conflicts.	N/A	Near
S-7	Juniper Canyon Rd: ▪ Implement variable speed limit based on weather conditions.	▪ Responds to inclement weather conditions and associated safety challenges. ▪ Location identified in ODOT SPIS (2018, 2020, 2021).	TBD based on future evaluation	Near
S-8	Juniper Canyon Rd: ▪ Add raised pavement markers on SE Juniper Canyon Rd. ▪ Add edge-line rumble strips to SE Juniper Canyon Rd.	▪ Delineates alignment of the roadway for night driving. ▪ Reduces roadway departure crashes. ▪ Enhances roadway navigation. ▪ Location identified in ODOT SPIS (2018, 2020, 2021).	$94,000	Near

Project ID	Project	Needs Addressed	Cost Estimate	Priority
S-9	Juniper Canyon Rd ▪ Add or enhance horizontal curve signage and markings.	▪ Improves visibility and awareness at curve. ▪ Enhances curve navigation. ▪ Location identified in ODOT SPIS (2018, 2020, 2021). ▪ Aligns with recommendation of ODOT Roadway Departure Plan.	$10,000	Near
S-10	Powell Butte Rd ▪ Add or enhance horizontal curves pavement markings.	▪ Improves visibility and awareness at curve. ▪ Enhances curve navigation. ▪ Aligns with recommendation of ODOT Roadway Departure Plan.	$10,000	Near
S-11	Davis Loop Rd ▪ Remove trees within clear zone.	▪ Reduces fixed-object crashes with trees. ▪ Location identified in ODOT SPIS (2018).	TBD based on future study	Medium
S-12	Powell Butte (OR 126) ▪ Install/maintain speed feedback signs.	▪ Improves awareness. ▪ Encourages speeding drivers to slow down. ▪ Location identified in ODOT SPIS (2018, 2019, 2020, 2021).	$50,000	Medium
S-13	US 26 ▪ Add systemic safety treatments, including edgeline rumble strips.	▪ Reduces roadway departure crashes. ▪ Enhances roadway navigation.	$50,000	Medium
S-14	Lamonta Rd ▪ Install horizontal curve signage, speed feedback sign, and delineators.	▪ Improves visibility and awareness at curve. ▪ Enhances curve navigation. ▪ Encourages speeding drivers to slow down.	$50,000	Medium
S-15	OR 126 ▪ Install systemic safety treatments, including edgeline and centerline rumble strips.	▪ Reduces roadway departure crashes. ▪ Enhances roadway navigation. ▪ Location identified in ODOT SPIS (2018, 2019, 2020, 2021).	$50,000	Medium

TBD = to be determined.

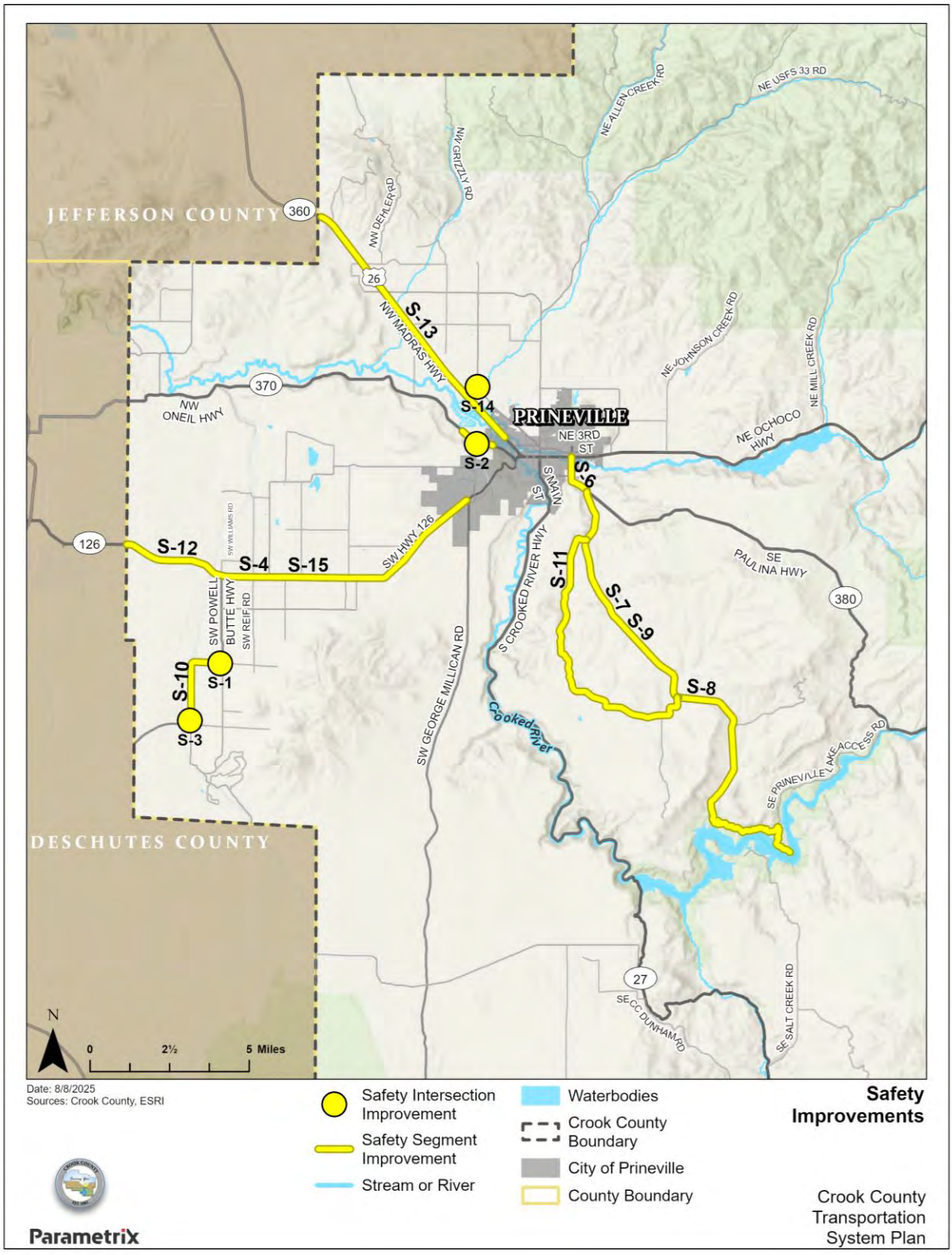


Figure 19. Safety Improvements

4.3 Active Transportation System Plan

This section describes improvements to the active transportation system and includes projects that enhance safety and connectivity for people walking, rolling, and bicycling. These include projects focusing solely on pedestrian and bicycle infrastructure, as well as multiuse paths and trails, which accommodate both people walking and people bicycling. Both pedestrian and bicycle improvements are shown in Figure 20.

4.3.1 Pedestrian Improvements

The identified pedestrian project would provide greater connectivity, safety, access, and comfort in the Powell Butte community where there is a higher density of community destinations. Summarized in Table 11, this project would be coordinated with project R-2A at the intersection of OR 126 and SW Williams Road.

Table 11. Pedestrian Improvements

Project ID	Project	Needs Addressed	Priority	Cost Estimate
P-1	OR 126 & SW Williams Rd: ▪ Install sidewalk, curb and gutter, curb ramps, and intersection lighting. ▪ Install marked crosswalks on all four legs of the intersection.	▪ Improved safety and comfort for travel to community destinations. ▪ Increased visibility at roadway crossings.	Medium	$2,900,000

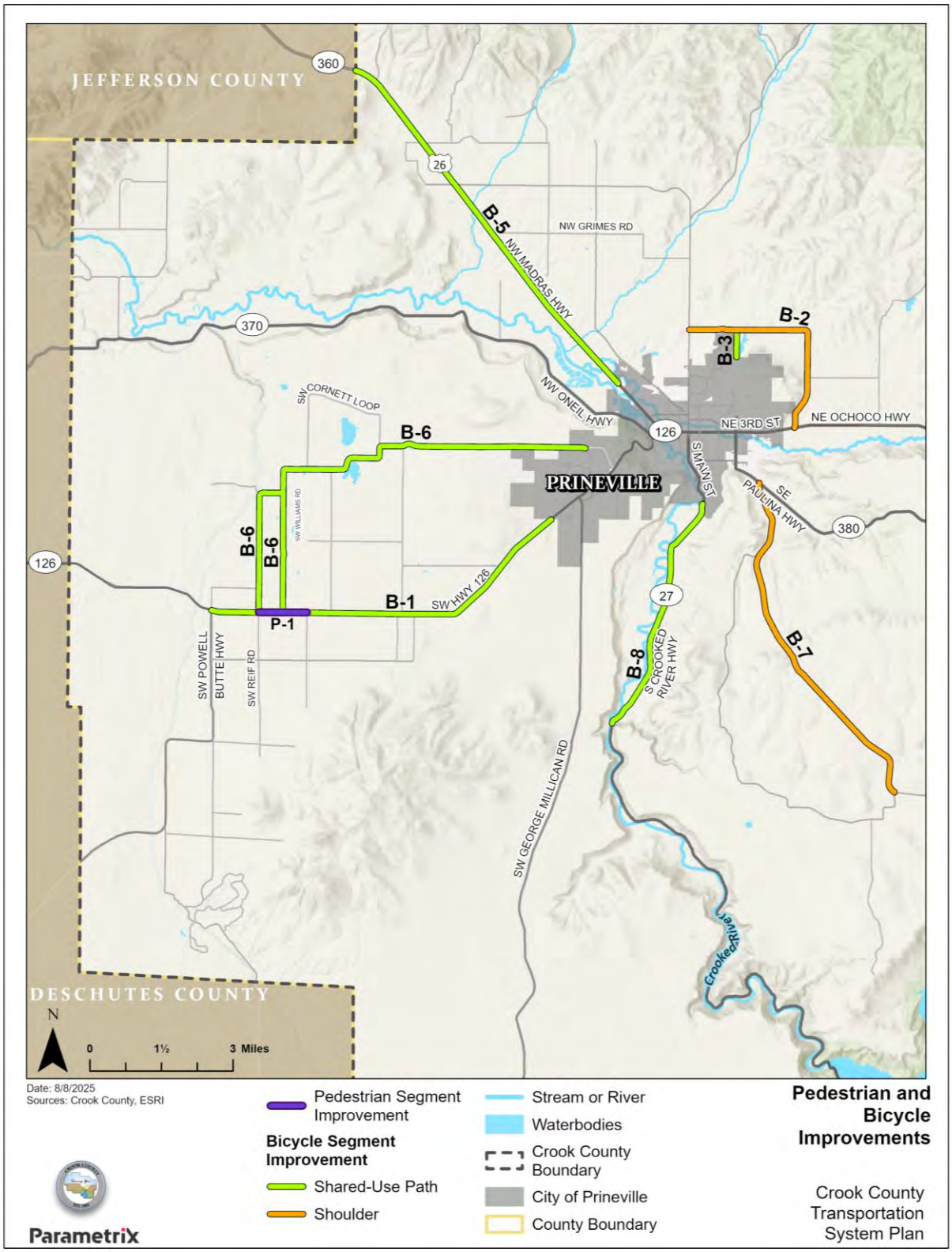


Figure 20. Pedestrian and Bicycle Improvements

4.3.2 Bicycle Improvements

Bicycle system improvements carry forward several projects from the 2017 TSP that still meet the identified need, although modifications have been made to better align the project with the current goals and cost constraints. New projects were identified based on evaluation by the project team and focus on new shared-use trails, paved shoulders in strategic locations, and programmatic improvements such as wayfinding and travel information to improve awareness of bicycle facilities and route opportunities. Improvements are summarized in Table 12 and shown in Figure 20.

Table 12. Bicycle Improvements

Project ID	Project	Needs Addressed	Priority	Cost Estimate
B-1	OR 126 from SW Powell Butte Hwy to Prineville UGB: ▪ Add shared-use path along the south side of OR 126.	▪ Improves safety and comfort for people walking, rolling, and biking. ▪ Improves multimodal connectivity. ▪ A shared-use path could be considered in coordination with Project P-1 to accommodate all active modes.	Medium	$6,600,000
B-2	Barnes Butte Rd: ▪ Add paved shoulder to Barnes Butte Rd.	▪ Improves safety and comfort for bicycle travel. ▪ Improves multimodal connectivity. ▪ Aligns network with recommended roadway design standards.	Long	$3,800,000
B-3	Barnes Butte Shared-Use Trail Connections: ▪ Add shared-use trail connecting Barnes Butte Rd to Iron Horse shared-use trail in Prineville.	▪ Improves multimodal connectivity. ▪ Connects to planned Iron Horse shared-use path in Prineville.	Long	$4,900,000
B-4	OR 27 Scenic Bikeway ▪ Construct a bicycle hub, or "rest stop," for hikers, bicyclists, recreationalists, and community members along the OR 27 scenic bikeway corridor; provide small shelter, information kiosk (map/community calendar), bicycle tool station, and bench/sitting area.	▪ Provides needed support for people traveling along the popular OR 27 route.	Long	$30,000
B-5	US 26 (Madras Highway) shared-use trail: ▪ Extend existing shared-use trail northwest to the county line parallel to US 26.	▪ Improves multimodal connectivity. ▪ Connects with existing Prineville shared-use path system.	Long	$7,100,000
B-6	Houston Lake Rd, SW Williams Rd, and Reif Rd: ▪ Add shared-use trails.	▪ Improves multimodal connectivity.	Long	$10,500,000
B-7	Juniper Canyon Rd ▪ Add paved shoulders	▪ Improves multimodal connectivity.	Long	$5,400,000

Project ID	Project	Needs Addressed	Priority	Cost Estimate
B-8	OR 27 ▪ Add shared-use trail to connect to planned path in Prineville.	▪ Improves safety and comfort of active mode travel along a popular cycling route that has high demand for both bicycle and motor vehicle travel. ▪ Connects to planned shared-use path in Prineville.	Medium	$4,400,000
B-9	Countywide ▪ Add bicycle route signage.	▪ Improves legibility of designated bicycle network in Crook County. ▪ Supports navigation between major destinations.	Medium	$50,000

4.4 Public Transportation Plan

Public transportation recommendations include projects and enhancements identified in the CET 2040 Transit Master Plan, as well as policy and programmatic recommendations identified in the 2017 TSP. Summarized in Table 13, it is important to note that improvements such as an expanded dial-a-ride service across the county would increase the ability for residents to age in place.

Table 13. Public Transportation Improvements

Project ID	Project Name/Location	Needs Addressed	Priority	Cost Estimate
T-1	Crook County Service Enhancement Plan: ▪ Institute evening and Saturday limited circulation as part of Route 26 flex route.	▪ Increases public transportation service frequency.	Medium	Already adopted as part of other plans.
T-2	Fixed-route enhancements to increase service in Prineville and expand connections to destinations.	▪ Provides transit access to key destinations in Prineville.	Long	TBD
T-3	Dial-a-ride enhancements and transportation network company encouragement.	▪ Increases on-demand transit service area. ▪ Increases accessibility for rural residents.	Near	Already adopted as part of other plans.
T-4	Transit community outreach.	▪ Enhances ease of use of the bicycle, pedestrian, and transit system in Crook County.	Near	Variable

TBD = to be determined

4.5 Freight System Plan

Freight is most commonly moved by truck and by rail within the county. OR 126 and US 26 are designated ODOT freight routes, while other corridors, such as Millican Road, carry significant amounts of freight traffic within Crook County and connect to freight routes in neighboring counties. OR 126 and US 26 are both reduction review routes, meaning that the vehicle-carrying capacity of the route cannot be reduced except in specific circumstances.

The 2017 TSP identified height constraints on US 26 due to the railroad trestle as the primary freight challenge. Due to the height constraint, traffic currently travels along Bus Evans Road and Elliot Lane, resulting in increased demand on these roads. The two projects are described in Table 14 and shown in Figure 21.

Table 14. Freight Improvements

Project ID	Project Name/Location	Needs Addressed	Priority	Cost Estimate
F-1	Bus Evans Rd and Elliott Ln: ▪ Reconstruct intersection to freight route standards.	▪ Reconstructs intersection to freight route standards.	Long	$15,000,000
F-2	US 26 railroad bridge feasibility study.	▪ Identifies feasibility of accommodating oversized loads on US 26.	Medium	$35,000

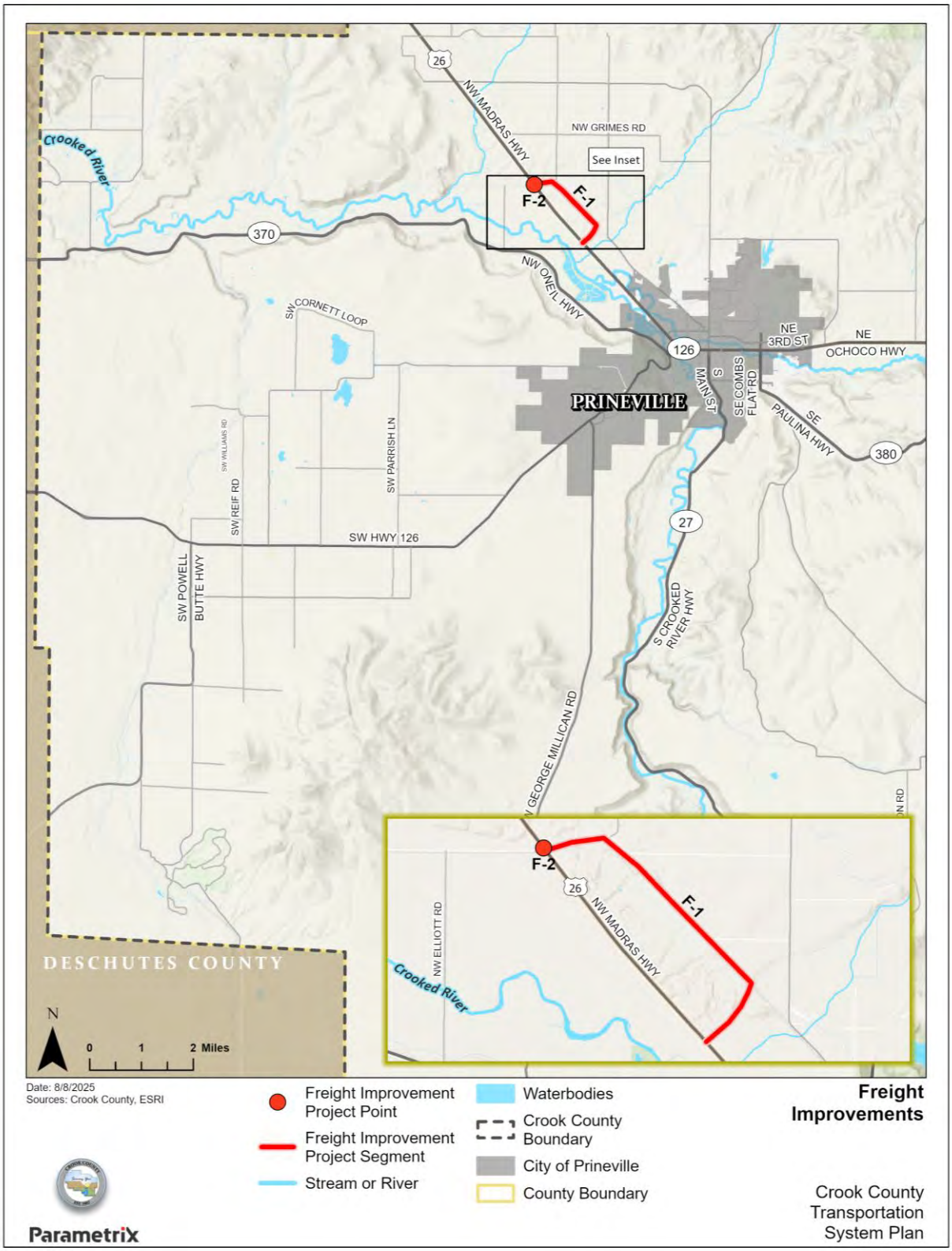


Figure 21. Freight Improvements

5. Implementation

The 2025 TSP contains projects that may be implemented on a short-, medium-, or long-term basis. Project prioritization includes factors such as community desire, staff capacity, and County leadership support. As limited funding exists, some projects may take years, if not decades, to complete. Over time, projects not included in this TSP may be added to address new needs that arise as Crook County's population continues to change. **As of the publication of this TSP, the County has no dedicated source of funding for transportation.** This section describes options for funding TSP projects, including through potential funding opportunities such as grants or County fees.

5.1 Funding Forecast and Funding Gap

All identified projects with cost estimates would cost approximately $112.9 million in 2024 dollars.[1] Of this total, $85.4 million is needed for solutions relying primarily on local funding or grant sources, while solutions in partnership with ODOT total $27.5 million. Based on recent annual transportation funding in Crook County and input provided by County staff, Crook County does not expect to have available funding to support new capital projects. A new funding source is needed to implement projects identified in the TSP.

5.2 Funding and Financing Options

This section briefly summarizes local transportation funding sources that have been used historically, as well as new sources to increase transportation funding.

Crook County's capital projects, operations, and maintenance of roadways are funded through the Crook County Transportation Budget, which relies on various sources. The Crook County Road Fund relies on fuel tax paid to the County based on the number of vehicles registered to the County, as well as Secure Rural Schools funding. Additionally, the Special Transportation Fund accounts for federal and state transportation programs; Crook County typically enters into intergovernmental agreements with the Central Oregon Intergovernmental Council to perform these services.

The County's largest expenditure under the Road Fund is the maintenance of roads. When forecasting for future budgets, the adopted 2024 budget (Crook County 2024) notes that "maintaining operations at the historical status quo continues to spend down fund balance." In particular, the forecast identifies a significant increase in maintenance expenditures compared to historical trends. The Road Department is exploring more sustainable operations and funding. The County does not currently have transportation utility fees, registration fees, system development charges, or other supplemental revenue for transportation.

5.2.1 Local Funding Options

Local revenue is an important source of funds for transportation projects and programs, and it also serves as a local match for grants. Table 15 describes potential new sources for local funding.

[1] This calculation assumes the low end of the range provided for Projects JC-1 and JC-2.

Table 15. Potential Local Funding and Financing Mechanisms

Local Funding / Financing Option	Description	Considerations
User Fee	Fees added to a monthly utility bill or tied to the annual registration of a vehicle to pay for improvement, expansion, and maintenance of the street system.	This type of fee is becoming more common in cities but would require substantial investment in rate studies, administrative staffing, and software and computer systems to enable the County to collect the revenue. This source is generally better suited to funding operations than for capital improvements, but it may free up existing resources for capital projects.
System Development Charges	One-time fees obtained from new development and redevelopment intended to cover part of the cost of transportation facilities to support the new development.	Fees would increase the cost of development for developers. The County would determine the appropriate fee to cover transportation costs while also ensuring that development remains affordable for developers.
Local Gas Tax	A local tax assessed on the purchase of gas within the County. This tax is added to the cost of gasoline at the pump, along with the state and federal gas taxes. Many communities in Oregon assess local gas taxes, typically ranging from $0.01 to $0.10 per gallon.	A local-option fuel tax would be easy to collect because the infrastructure is already in place. It would generate revenue for the County from motorists passing through the county. This method could fund operations and capital programs.
Tax Increment Financing (TIF)	A tool counties use to create special districts (tax increment areas) where public improvements are made in order to generate private-sector development. During a defined period, the tax base is frozen at the pre-development level. Property taxes for that period can be waived or paid, but taxes derived from increases in assessed values (the tax increment) resulting from new development can go into a special fund created to retire bonds issued to originate the development or leverage future improvements.	A number of small- to medium-sized communities in Oregon have implemented, or are considering implementing, urban renewal districts that will result in a TIF revenue stream.
Road/Local Improvement Districts	A local improvement district is a geographic area where local property owners are assessed a fee to cover the cost of a public improvement in that area.	This may be especially useful for non-state facilities that are ineligible for federal or state funding. This type of fee must be approved by the majority of property owners.
General Fund	Property taxes from the County's permanent tax rate.	Diverting General Fund revenue to the Road Fund would have significant consequences for other County services.
Bonds or Levies	Voter-approved measures to either acquire funds through an increased tax rate (levy) or through the sale of bonds.	Requires voter approval.
Motor Vehicle Title Fee	Requires all motor vehicles registered in the county to all have the title recorded as personal property.	This would generate two sources of revenue: from the fee itself and from personal property taxes levied on motor vehicles. This could be problematic for renters and would increase taxable property that the assessor must account for.

5.2.2 Grant Opportunities

Grants provide an important source of funds for projects, supplementing local funds. Grants are often targeted toward specific types of transportation projects. Table 16 describes potential grant funding sources and their applicability to TSP projects in Crook County.

Table 16. Grant Opportunities

Source	Funding Available	Description	Eligibility and Considerations
Statewide Transportation Improvement Program (STIP; ODOT 2025g) Administered by ODOT	Approximately $2 billion available statewide for the 2024–2027 STIP. Match requirements vary.	The STIP is the major statewide program for funding significant projects, usually of regional importance. The STIP programs both state and federal dollars.	Major projects on state roadways through Crook County are most likely eligible for funding, though the STIP process is extremely competitive. Projects included in the STIP are generally regionally significant and are prioritized by ODOT, metropolitan planning organizations, and area commissions on transportation.
Recreational Trails Program Administered by OPRD (2025b)	Approximately $1.6 million allocated each year. Minimum grant request: $10,000. Recommended grant request maximum: $150,000 for nonmotorized proposals. Applicants must commit to at least a 20% match. Match can include volunteer labor or other donations.	Funds to develop, improve, or expand trails and facilities for motorized and nonmotorized use. Recreational Trails Program funding is intended for recreational trail projects and can be used for construction of new trails, major rehabilitation of existing trails, development or improvement of trailhead or other support facilities, acquisition of land or easements for the purpose of trail development, and safety and education projects.	This funding source is very competitive, and funding is generally based on the needs identified in the Oregon Statewide Recreation Trails Plan (OPRD 2016).
Oregon Community Paths Program Administered by ODOT (2025c)	Project refinement funding: $150,000 to $750,000 per project. Construction funding: $500,000 to $6,000,000 per project. Requires a local match of 10% to 30% depending on funding source (federal or state).	Supports multiuse path projects including paths that pass through a park or along a greenway to connect community centers, services, housing, employment, schools, and recreation. Types of community path projects: ▪ Critical Links. Walking and biking connections to schools, downtowns, shopping, employment, and other essential destinations. ▪ Regional Paths. Connect communities no more than 15 miles apart or traverses one community with a path 10 miles long or greater.	Oregon Community Paths Program projects must serve a transportation purpose (not recreational). The TSP includes multiuse path projects that fall under the *Critical Link*s project type

Source	Funding Available	Description	Eligibility and Considerations
Safe Routes to School Administered by ODOT (2025d)	$60,000 to $2,000,000 New funding program guidance is under development by ODOT. 20% to 40% match required.	Funds projects that improve, educate, or encourage children safely walking or biking to school. Projects must be within a 1-mile radius of a school, within a local roadway, and in a jurisdictional plan. Projects in smaller communities, for elementary and middle schools, and that can demonstrate substantial need are likely to fare best.	Because the Crook County TSP is likely to include projects that would have a direct impact on cycling and walking to school in Powell Butte, Safe Routes to School is likely a promising source of funding for projects.
Sidewalk Improvement Program Administered by ODOT (n.d.)	$7.4 million annually for federal fiscal years 2022 to 2024. No match is required. State pedestrian and bicycle funds can be used as a match for federal dollars.	Allocates funds to improve walking and biking infrastructure (e.g., crossings, sidewalks, bike facilities) on or along state highways. Provides grants on a rotating regional basis to construct larger pedestrian and bicycle projects (or bundles of systemic improvements) needed to address priority needs identified in the Oregon Bicycle and Pedestrian Plan (ODOT 2016) and the Statewide Active Transportation Needs Inventory (ATNI; ODOT 2025a).	Eligible for improvements on or along state highways. ATNI web map shows prioritization scores within Crook County ranging from the 60th to 80th percentile.
Statewide Transportation Improvement Fund (STIF) Administered by ODOT (2025f)	Funding amount varies. There is no match for STIF formula; STIF Discretionary match is generally 20%. STIF formula funds may be used as the local match for state and federal funds which also provide public transportation. STIF Discretionary funding is used for new or pilot projects and for capital purchases.	STIF formula funds may be used for public transportation purposes that support the effective planning, deployment, operation, and administration of public transportation programs. The STIF Discretionary fund supports a wide variety of project types but cannot be used to fund ongoing operations. The Intercommunity Discretionary fund supports maintaining, expanding, and improving public transportation services between two or more communities. The Oregon Transportation Commission finalizes award decisions using criteria derived from statute and the Oregon Public Transportation Plan (ODOT 2018).	STIF formula funding is awarded through the Qualified Entity which is a county or transit district, based on population and taxes paid within their respective jurisdiction. STIF Discretionary and Intercommunity Discretionary funds are awarded to public transportation service providers to improve public transportation through a competitive grant process.
Rivers, Trails, and Conservation Assistance Program Administered by National Park Service (2025)	Funding amount varies. No local match is required.	Annual funding available for technical assistance for recreation and conservation projects, including shared-use paths.	This fund has advanced projects in Crook County in both 2020 and 2022, supporting both the Barnes Butte Recreational Complex and Crooked River National Grasslands Trails efforts. Projects related to recreational areas and access to recreational areas may qualify.

Source	Funding Available	Description	Eligibility and Considerations
All Roads Transportation Safety Program Administered by ODOT (2025b)	Funding amount varies. A 10% local match is required.	Annual funding for projects that address safety issues on highways and high-risk rural roads.	Projects are typically identified through the state's Safety Priority Index System (ODOT 2025e) or systemic network screening. Projects are awarded based on benefit/cost ratio.
Federal Lands Access Program Administered by FHWA (2025a)	Varies.	Funds projects that improve transportation facilities that provide access to, are adjacent to, or are located within federal lands.	Projects that improve access to federal lands, such as Bureau of Land Management land, are eligible. Many proposed projects expand access to BLM land.
Transportation and Growth Management Program (TGM) Administered by ODOT (2025h)	Varies; annual grant cycles.	Funds projects that help local communities plan for streets and land use to create more livable communities. Category 1 TGM grants focus on meeting the requirements for the Transportation Planning Rule, while category 2 TGM grants focus on integrated land use and transportation planning, especially for active transportation, transit, and multimodal facilities.	Category 2 TGM projects aim to encourage "livable, affordable, and accessible communities for all ages and incomes…" Advancing projects that aim to improve access to transit and community destinations may be eligible for funding.
Land and Water Conservation Fund Administered by OPRD (2025a)	Approximately $5 million annually. Requires a 50% local match.	Funds to acquire land for public outdoor recreation or to develop basic outdoor recreation facilities. Project types may include shared-use pathways, bikeways, and sidewalks.	Projects identified in the TSP include shared-use pathways, bikeways, and sidewalks that may be eligible.

6. References

AASHTO (Association of State Highway and Transportation Officials). 2018. A Policy on Geometric Design of Highways and Streets, 7th Edition. Accessed August 4, 2025. https://ecommerce.ite.org/imis/ItemDetail?iProductCode=LP-323F.

CET (Cascades East Transit). 2020. 2040 Transit Master Plan. Accessed July 28, 2025. https://cascadeseasttransit.com/about/2040-transit-master-plan/.

Crook County. 2012. OR Highway 126 Corridor Facility Plan, adopted January 2012. Accessed August 1, 2025. https://digitalcollections.library.oregon.gov/nodes/view/213286

Crook County. 2017. Transportation System Plan, adopted November 2017. Accessed July 28, 2025. https://co.crook.or.us/sites/default/files/fileattachments/planning_commission/page/10251/crookcotsp_adopted_nov2017.pdf.

Crook County. 2003. Crook County Comprehensive Plan, adopted in 1978; codified in 2003. Accessed July 28, 2025. https://co.crook.or.us/commdev/page/crook-county-comprehensive-plan.

Crook County. 2024. Crook County, Oregon, Adopted Budget for Fiscal Year 2024. Accessed August 4, 2025. https://co.crook.or.us/sites/default/files/fileattachments/treasurer_amp_finance/page/8714/crook_county_adopted_budget_fy_2024_final.pdf.

FHWA (Federal Highway Administration). 2025a. Federal Lands Access Program (FLAP). Accessed July 28, 2025. https://highways.dot.gov/federal-lands/flap.

FHWA. 2025b. National Bridge Inventory. Accessed July 28, 2025. https://www.fhwa.dot.gov/bridge/nbi.cfm.

NPS (National Park Service). 2025. Rivers, Trails, and Conservation Assistance Program. Accessed July 28, 2025. https://www.nps.gov/orgs/rtca/index.htm.

ODOT (Oregon Department of Transportation). Not dated. ODOT State Pedestrian and Bicycle Funding Programs Manual: 2019-2024. Accessed August 11, 2025. https://www.oregon.gov/odot/Programs/TDD%20Documents/StatePBFundingProgramsManual_v4.pdf.

ODOT. 2016. Oregon Bicycle and Pedestrian Plan. Accessed August 4, 2025. https://www.oregon.gov/ODOT/Planning/Documents/OBPP.pdf.

ODOT. 2018. Oregon Public Transportation Plan. August 4, 2025. https://www.oregon.gov/odot/Planning/Documents/OPTP_V1_FINAL_Feb2019.pdf.

ODOT. 2023a. Oregon Highway Plan, Including amendments November 1999 through January 2023. Accessed July 28, 2025. https://www.oregon.gov/odot/Planning/Documents/OHP.pdf.

ODOT. 2023b. Oregon Transportation Plan. Accessed August 1, 2025. https://www.oregon.gov/odot/planning/pages/plans.aspx.

ODOT. 2024a. Future Highway Volume Table. Accessed August 1, 2025. https://www.oregon.gov/odot/planning/pages/apm.aspx.

ODOT. 2024b. TSP Guidelines. Accessed July 28, 2025. https://www.oregon.gov/odot/planning/tsp-guidelines/pages/default.aspx.

ODOT. 2025a. Statewide Active Transportation Needs Inventory. Accessed August 4, 2025. https://www.oregon.gov/odot/rptd/pages/statewide-active-transportation-needs-inventory.aspx.

ODOT. 2025b. All Roads Transportation Safety Program. Accessed July 28, 2025. https://www.oregon.gov/odot/engineering/pages/arts.aspx.

ODOT. 2025c. Oregon Community Paths Program. Accessed July 28, 2025. https://www.oregon.gov/odot/programs/pages/ocp.aspx.

ODOT. 2025d. Safe Route to Schools. Accessed July 28, 2025. https://www.oregonsaferoutes.org/.

ODOT. 2025e. Safety Priority Index System Reports for On-State Highways. Accessed August 4, 2025. https://www.oregon.gov/odot/engineering/pages/spis-reports-on-state.aspx.

ODOT. 2025f. Statewide Transportation Improvement Fund. Accessed July 30, 2025. https://www.oregon.gov/odot/rptd/pages/statewide-transportation-improvement-fund.aspx.

ODOT. 2025g. Statewide Transportation Improvement Program. Accessed July 30, 2025. https://www.oregon.gov/odot/stip/pages/index.aspx.

ODOT. 2025h. Transportation and Growth Management Program. Accessed July 28, 2025. https://www.oregon.gov/lcd/tgm/pages/index.aspx.

OPRD (Oregon Parks and Recreation Department). 2016. Oregon Statewide Recreation Trails Plan. Accessed August 4, 2025. https://www.oregon.gov/oprd/prp/pages/pla-statewide-trails.aspx.

OPRD. 2025a. Land and Water Conservation Fund. Accessed July 28, 2025. https://www.oregon.gov/oprd/gra/pages/gra-lwcf.aspx.

OPRD. 2025b. Recreational Trails Program. Accessed July 28, 2025. https://www.oregon.gov/oprd/gra/pages/gra-rtp.aspx?utm_source=OPRD&utm_medium=egov_redirect&utm_campaign=https%3A%2F%2Fwww.oregon.gov%2Foprd%2Fgrants%2Fpages%2Ftrails.aspx.

U.S. Census Bureau. 2023. 2022 American Community Survey 5-Year Estimates. Accessed July 28, 2025. https://www.census.gov/data/developers/data-sets/acs-5year.2022.html#list-tab-1806015614.

Appendix A

Existing Conditions and Needs Analysis

Crook County TSP Update: Existing Conditions and Needs Analysis

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A Traffic Counts
B Synchro Reports
C McTrans Highway Capacity Software Reports

Acronyms and Abbreviations

AADT	average annual daily traffic
ACS	American Community Survey
ADT	average daily traffic
APM	Analysis Procedures Manual
ATR	automatic traffic recorders
CET	Cascades East Transit
COPR	City of Prineville Railway
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
HCM	Highway Capacity Manual
LOS	level of service
LTS	level of traffic stress
ODAV	Oregon Department of Aviation
ODOT	Oregon Department of Transportation
SPIS	Safety Priority Index System
TSP	transportation system plan
UGB	urban growth boundary

1. Introduction

This memorandum reviews existing transportation conditions in Crook County (County) and identifies transportation needs as part of the Crook County Transportation System Plan (TSP) Update. The TSP was last updated in 2017; since then, population growth has outpaced the projections and has increased the need for transportation solutions to accommodate this growth and the resulting transportation challenges.

This memo builds directly on the review completed for the 2017 TSP and provides an updated assessment of where significant changes have occurred. In many sections, this memo is a direct reflection of the previous memorandum completed by Kittleson & Associates, with updates completed to reflect new data and changes since 2017.

This memo inventories the existing conditions and current standards to understand current transportation system needs and anticipated future conditions and system needs. Analysis of all travel modes identifies existing and projected deficiencies to inform potential projects, programs, and policy changes for incorporation into the updated Crook County TSP.

2. Needs and Issues Summary

A summary of the County's current transportation system and needs is provided below.

2.1 Streets

- **Roadway Ownership.** Multiple jurisdictions own and manage the public access roadway system within Crook County: the Oregon Department of Transportation (ODOT), the County, the U.S. Forest Service, the Bureau of Land Management, and private entities. State roadways include US Route 26 (US 26), Oregon Highway 126 (OR 126), OR 370, OR 380, and OR 27, which provide statewide and regional connections to Crook County.
- **Freight.** Freight is primarily moved by truck and rail. The Prineville Freight Depot and Prineville/Crook County Airport both support intermodal connections, and US 26 (west of Prineville) and OR 126 both serve as designated state freight routes. US 26 and OR 126 are also reduction review routes.
- **Additional Considerations.** Most routes throughout Crook County are two-lane roadways with limited shoulders. Public feedback indicated that in some locations, such as along OR 126, the constrained space increases safety concerns regarding turning movements and further limits options for people walking or biking.

2.2 Traffic Operations

- **Mobility Targets – Current Conditions.** The volume-to-capacity (V/C) ratio (a standard measure of congestion) under current conditions at SW Powell Butte Highway and Ochoco Highway/OR 126 exceeds the state's mobility target. The other study intersections do not exceed the mobility target.
- **Mobility Targets – Future Conditions.** Two growth scenarios were analyzed to evaluate future conditions. In the No Build scenario, two of the six study intersections exceed their mobility

targets. However, in the higher growth scenario, five of the six study intersections exceed their mobility targets (see Table 1).

Table 1. Study Intersections Operations Summary

Study Intersections	Mobility Targets[1]	2023 Existing Traffic Operations V/C Ratio & LOS	2045 No-Build Traffic Operations V/C Ratio & LOS	2045 No-Build (Juniper Canyon Higher Growth) Traffic Operations V/C Ratio & LOS
SW Powell Butte Highway & Ochoco Highway/OR 126	Major: V/C < 0.70 Minor: V/C < 0.80	Major: 0.34 **Minor: 1.30**	Major: 0.45 **Minor: 10.36**	**Major: 0.84** **Minor: 2.40**
SW Williams Road & Ochoco Highway/OR 126	Major: V/C < 0.70 Minor: V/C < 0.80	Major: 0.49 Minor: 0.22	Major: 0.65 Minor: 0.42	**Major: 0.95** **Minor: 2.11**
SW Parrish Lane & Ochoco Highway/OR 126	Major: V/C < 0.70 Minor: V/C < 0.80	Major: 0.44 Minor: 0.07	Major: 0.59 Minor: 0.07	**Major: 0.85** Minor: 0.21
S Powell Butte Highway & SW Bussett Road	LOS E or LOS F with V/C ratio < 0.95	LOS Major St: A LOS Minor St: B	LOS Mainline: A LOS Side Street: C	LOS Mainline: A LOS Side Street: D
S Powell Butte Highway & Alfalfa Road	LOS E or LOS F with V/C ratio < 0.95	LOS Major St: A LOS Minor St: B	LOS Mainline: A LOS Side Street: D	LOS Mainline: A **LOS Side Street: F**
SE Juniper Canyon Road & SE Paulina Highway/OR 380	Major: V/C < 0.80 Minor: V/C < 0.80	Major: 0.54 Minor: 0.34	**Major: 0.97** Minor: 0.62	**Major: 2.27** **Minor: 1.67**

Source: Table 15, Table 16, Table 27, Table 28
LOS = level of service; V/C = volume to capacity
Bold = Exceed Mobility Standards

- **Two-Lane Capacity Analysis.** Four state highway segments—all two-lane roadways—were analyzed for existing and future capacity. All four highway segments currently operate at LOS C or better. In the future No Build scenario, all segments, except for SW George Millican Road south of Tom McCall Road, are expected to operate at a reduced LOS. SW Powell Butte Highway both north of SW Bussett Road and north of Alfalfa Road operate at LOS C, while SE Juniper Canyon Road south of SE Paulina Highway is expected to operate at LOS E.
- **Public Feedback.** Public feedback reflected a desire for improved access to the Juniper Canyon area, including additional routes to alleviate reliance on SE Juniper Canyon Road. Public feedback also reflected a desire for improved operations at the intersection of SW Powell Butte Highway and OR 126.

[1] 1999 Oregon Highway Plan including amendments November 1999 through January 2023, Oregon Department of Transportation, January 2023.

2.3 Active Transportation

- **Pedestrian Facilities.** No sidewalks exist in unincorporated Crook County. Connections to pedestrian generators, such as Juniper Pantry, Powell Butte Elementary School, and Paulina Elementary School, require travel along the roadway or shoulder, if available.
- **Bicycle Facilities.** People traveling by bicycle ride in the travel lane or shoulders, when available, throughout the county. Strava data analyzed in the previous TSP revealed that OR 27, US 26 (east of Prineville), McKay Creek Road, OR 370, Lamonta Road, Alfalfa Road, Shumway Road, and parts of Houston Lake Road are all popular roadways for bicyclists. Many of these—including Alfalfa Road, Shumway Road, and OR 27—do not have paved shoulders.

2.4 Public Transportation

- **Public Transit.** Transit service is provided on weekdays through one fixed route that connects Prineville to Redmond; there is one stop in Powell Butte at a church that serves as a park and ride. Vehicles provide bike racks for multimodal integration. Dial-a-ride service is available on weekdays in some areas of the county.

2.5 Safety Concerns and Deficiencies

- **Crash Summary.** Between 2017 and 2021, 732 crashes resulted in 17 fatalities and 54 serious injuries. Approximately 1% of crashes involved someone walking or biking. General countywide crash trends indicate a high frequency of fixed-object and rear-end crashes. Speed and inattention are the top two contributing factors for crashes. Fatal and serious injury crashes occurred most frequently in the western portion of the county, clustered in North Prineville and along OR 126 and Juniper Canyon Road.
- **Segment Analysis.** A segment safety analysis was completed on five corridors: OR 126, Powell Butte Highway, US 26, OR 370, and OR 380. None of these five corridors exceeded the statewide crash rate.
- **Locations for Further Review.** Ten intersections were studied as part of the safety analysis. One of the 10 intersections—SW Powell Butte Highway and SW Bussett Road—had a crash rate that exceeded the critical crash rate (90th percentile crash rate). Additionally, the intersection of Rimrock Acres Loop and NW O'Neil Highway is approaching the critical crash rate. Both intersections were flagged for further review based on this analysis.
- **Public Feedback.** Public feedback collected through this plan indicates that safety is a key concern.

3. Study Area

The TSP focuses on Crook County, excluding the city of Prineville. Located in central Oregon, Crook County is adjacent to Deschutes County and the cities of Bend and Redmond. The study area is displayed in Figure 1.

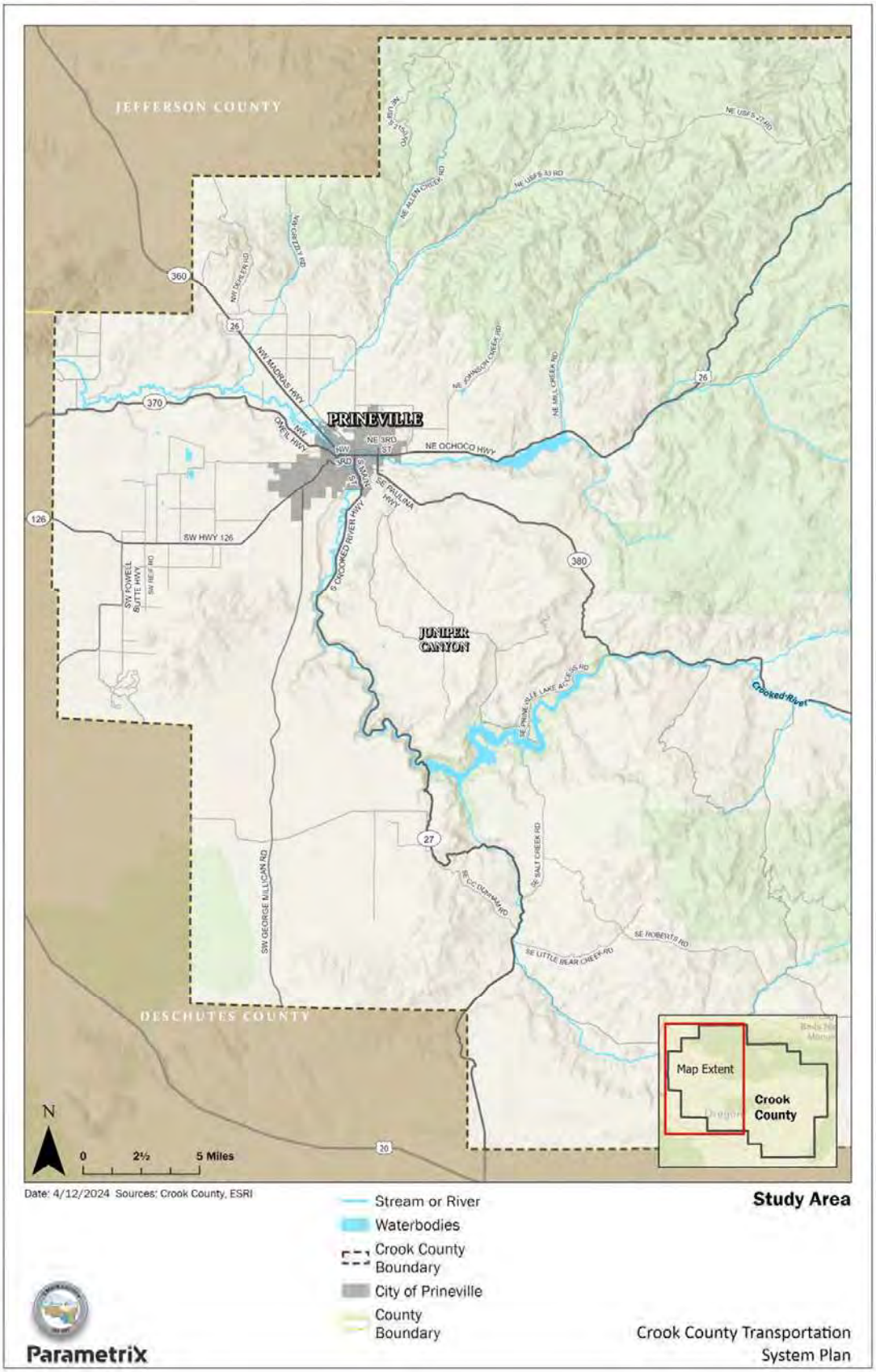


Figure 1. Study Area

3.1 Population

3.1.1 Current Population

As of 2022, Crook County was home to 24,987 residents (U.S. Census Bureau 2023). It is estimated that of this population, approximately 14,072 people (56.3%) live in unincorporated Crook County, while the remaining population lives within the city of Prineville or its associated urban growth boundary (UGB). The city of Prineville is the only incorporated area in Crook County. This population estimate represents more than 5% growth since 2020 and more than a 29% growth since 2000. Table 2 compares community characteristics in Crook County to Oregon's population overall. The table is based on 2022 American Community Survey data (U.S. Census Bureau 2023).

While Table 2 reference 2022 American Community Survey data to provide a comprehensive review of community characteristics in Crook County, it should be noted that other estimates identify a higher total population. For example, the U.S. Census Bureau's QuickFacts demographic review estimates that as of July 1,2023, the County's population is 26,952. This tool uses a variety of sources and methods to develop estimates, which limits comparison across locations and time periods, and includes only a subset of the characteristics summarized below. For this reason, the sections that follow rely on the American Community Survey data. However, the higher estimates reinforce that Crook County is rapidly growing, increasing transportation needs.

Notable demographic information includes:

- Crook County has a higher population of older adults (25%) compared to the state of Oregon (21%).
- Crook County has a slightly lower median household income ($74,969) compared to the state of Oregon ($76,632).
- Crook County has a slightly lower population of people who speak limited English (<1%) compared to the state of Oregon (2%).
- Crook County has a slightly higher population of people with disabilities (18%) compared to the state of Oregon (15%)

Table 2 lists the characteristics of Crook County's population.

Table 2. Community Characteristics

	Crook County	Oregon
Population	24,987	4,240,137
Age		
Youth (under 18)	20%	20%
Older adults (65 years+)	25%	18%
Income Characteristics		
Median household income	$74,969	$76,632
Low-income population (Less than 200% federal poverty level)	26%	28%
Race and Ethnicity		

	Crook County	Oregon
American Indian and Alaska Native alone	1%	<1%
Asian alone	<1%	4%
Black or African American alone	<1%	2%
Hispanic or Latino	8%	14%
Native Hawaiian and Other Pacific Islander alone	<0%	<1%
White alone	87%	73%
Some other race alone	0%	<1%
Two or more races	4%	5%
Other Characteristics		
Limited English-speaking households	<1%	2%
Persons with disabilities	18%	15%
Commuting Characteristics		
Households with zero vehicles available	1%	3%
Drove alone	81%	67%
Carpool	7%	9%
Public transportation	0%	3%
Walked	<1%	3%
Other means	<1%	3%
Worked at home	10%	15%

Source: U.S. Census Bureau, 2022 American Community Survey 5-Year Estimates, 2023

3.1.2 Historic and Projected Growth Patterns

Oregon Revised Statute 195.034 directs counties to formulate and adopt coordinated population projections throughout the county and within incorporated cities. Further, the statute requires that population projections for counties be prepared by the Portland State University Population Research Center. The latest population projections through 2072 were prepared in 2022 for Crook County.

Evaluation of population trends in Crook County considers both the population of only unincorporated areas as well as the total county population, which includes the city of Prineville and its UGB. Past growth patterns from 2010 to 2020 show that unincorporated areas grew slightly faster than the county overall at a rate of 21%. However, looking forward to 2047, areas within the UGB are expected to grow faster than the county overall. By 2072, an estimated 42,079 people are expected to live in Crook County, inclusive of the Prineville UGB; this includes 17,662 people living in unincorporated Crook County.

It should also be noted that although this projection anticipates that nearly 16,000 people will live in unincorporated Crook County by 2047, current population estimates are rapidly approaching this number.

Table 3 illustrates historical and forecast county population.

Table 3. Historical Population and Population Forecast

	Population		Percentage Change from Previous Forecast	
Year	Crook County	Outside UGB	Crook County	Outside UGB
Historical				
2010	20,978	9,765	N/A	N/A
2020	24,738	11,817	17.9%	21.0%
Forecast				
2047	33,470	15,818	35.2%	33.9%
2072	42,079	17,662	25.7%	11.7%

Source: Population Research Center, Portland State University, 2022

3.1.2.1 Title VI and Environmental Justice Communities

State and federal law (through Title VI) requires the TSP to consider disadvantaged communities in the planning process to ensure that benefits are not disproportionately distributed on the basis of race, color, or national origin.[2] The TSP must also address environmental justice populations, defined by Executive Order 12828 to include low-income and minority populations.[3]

Additionally, other vulnerable populations, including people who have disabilities, youth populations, and low-income populations, may be disproportionately affected by transportation deficiencies in Crook County. Crook County's population over the age of 65 makes up approximately 25% of the population, compared to 18% in Oregon. Crook County has 18% of its population living with a disability, compared to 15% of people in Oregon. Crook County's low-income population is similar to the state; 26% of Crook County residents are below 200% of the federal poverty level as compared to 29% in Oregon. These groups may lack the ability or desire to travel by car. People with disabilities can be negatively affected by incomplete or nonexistent sidewalks, as well as a lack of curb cuts and limited transit service. The specific needs of these communities must be considered in the development of future projects and programs.

3.2 Zoning

Figure 2 shows the zoning districts within Crook County. The majority of Crook County is zoned Exclusive Farm Use (EFU 1, EFU2, or EFU3). The Juniper Canyon area and several other small communities in the Powell Butte area and northwest of Prineville are zoned Rural Residential. Future land use changes, especially those that add residential, commercial, and industrial uses, can impact the transportation system by adding more traffic to roads that may not be equipped with the correct functional classification and improvements to support the increased volume. The development of resort communities and other tourism-focused destinations, shown in the Destination Resort overlay, has the potential to increase demand on the transportation system.

[2] Title VI of the Civil Rights Act of 1964 states, "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

[3] Refers to Presidential Executive Order 12828: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994) and related applicable laws and regulations. https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf

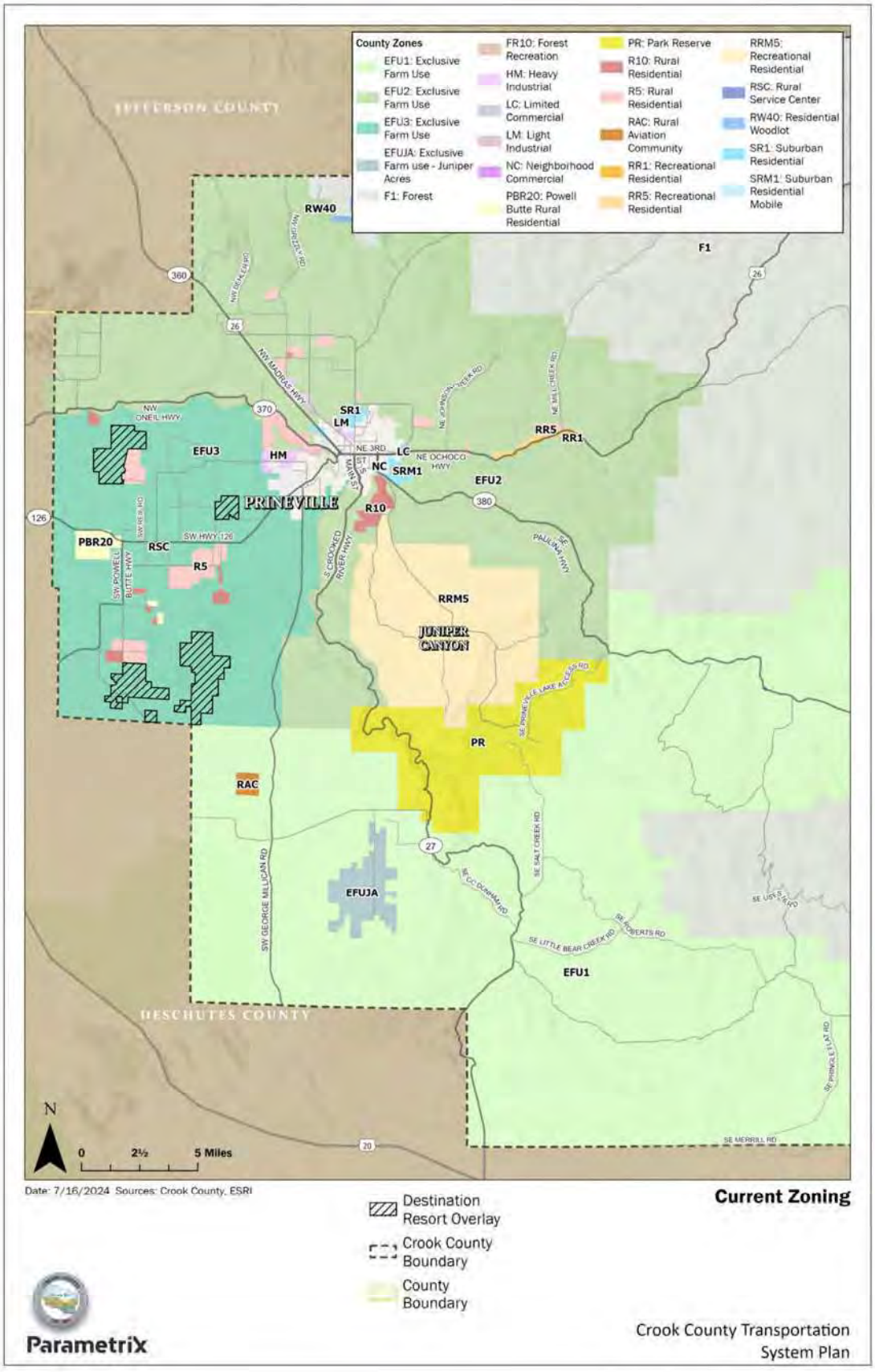


Figure 2. Current Zoning

3.2.1 Natural Resources

Chapter 15 of the Crook County Code requires new developments to evaluate the flood risk as part of the permit process. Buildings are required to be elevated above the flood level. Figure 3 shows the Crook County floodplain map, indicating the areas within the county that are subject to 100-year and 500-year floods.

Figure 4 displays significant portions of wetlands that are present throughout Crook County. Prominent areas include along the Crooked River, near the Ochoco Reservoir, around Gerrow Butte, south of the Prineville Reservoir, and in the Ochoco National Forest-Maury Mountains area.

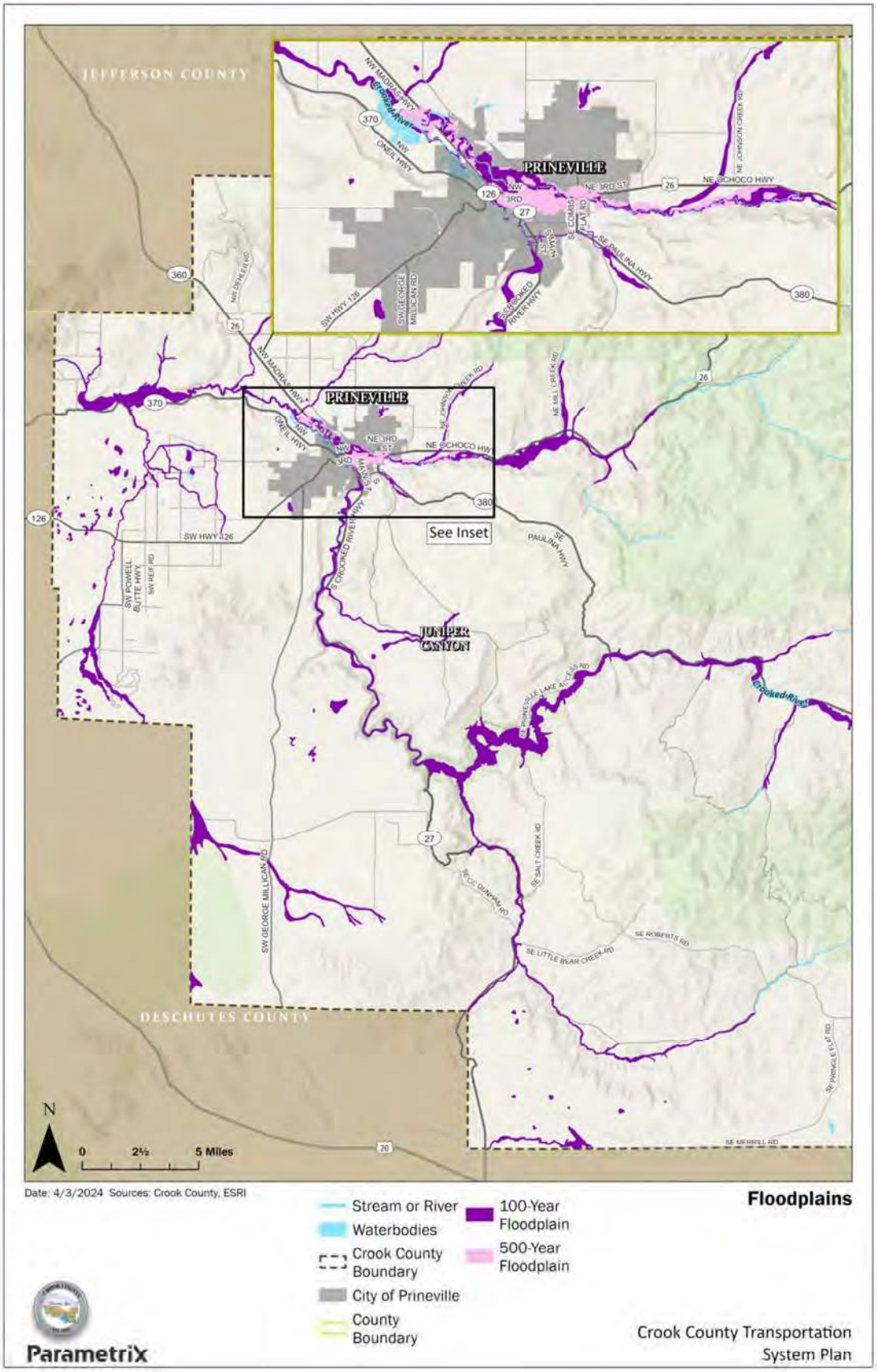


Figure 3. Floodplains

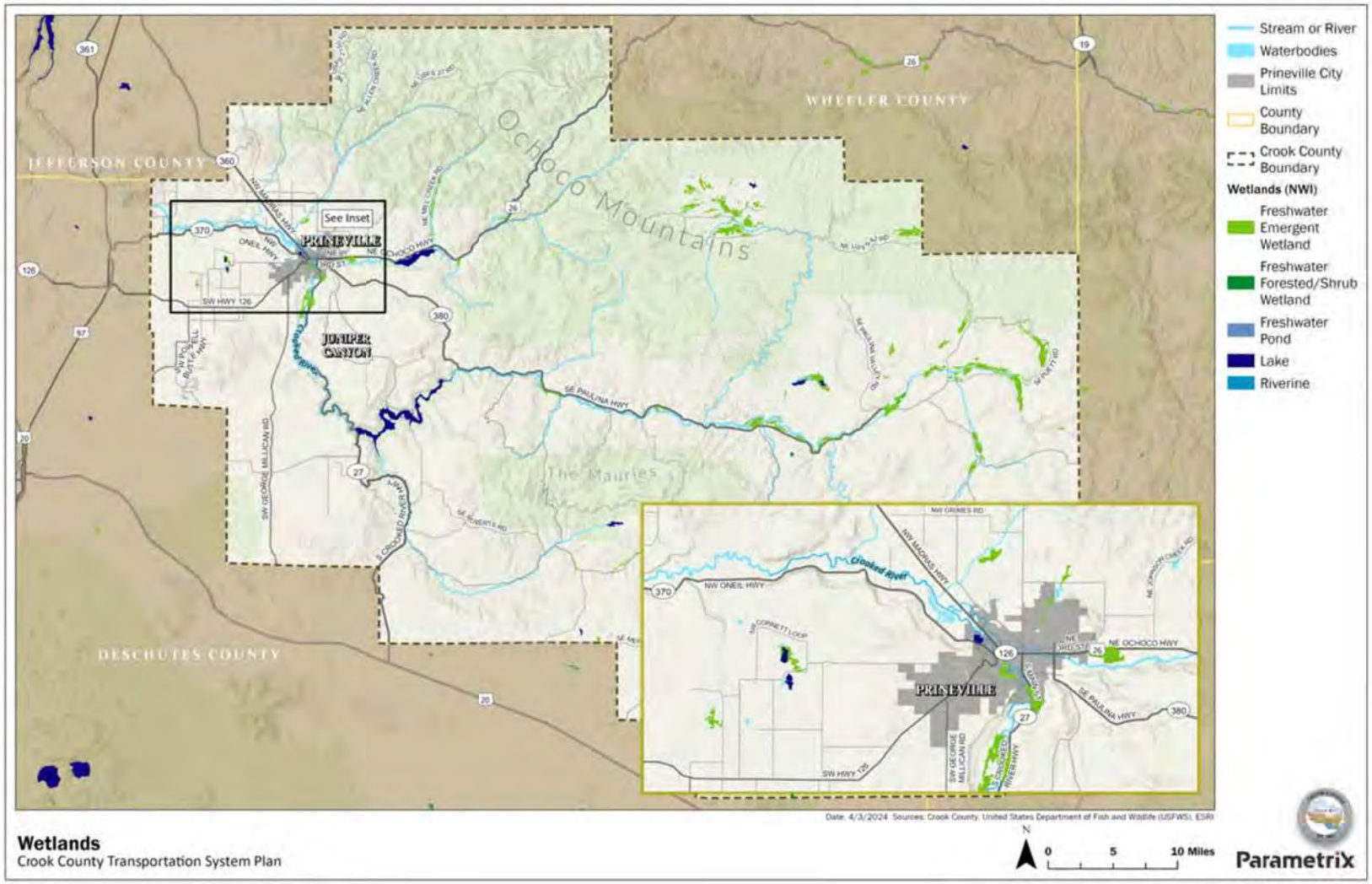


Figure 4. Wetlands

3.2.2 Activity Centers and Destinations

The land use and population inventory identifies existing, planned, and potential future land uses. The inventory will inform the existing and future conditions analyses, particularly as the project team works with the community to develop future alternative scenarios. As shown in Figure 5, the following are key activity centers and destinations within the county:

- Brasada Ranch Resort
- Ochoco National Forest
- Crooked River Recreation Areas
- Prineville and Ochoco Reservoirs
- Paulina and Powell Butte Schools
- Prineville Airport
- City of Prineville Railway
- Crook County Landfill
- Powell Butte Post Office
- Powell Butte Community Center

In addition to these major activity centers in the county, additional destinations such as major employment centers, schools, medical facilities, and shopping centers are located within the city of Prineville. Although the transportation system within the city of Prineville is not part of the study area, connectivity between the county and nearby cities (e.g., Prineville, Redmond, and Bend) is an important aspect considered in this TSP update. Feedback from community members highlighted the importance of maintaining and improving access to key destinations in the county, including the Powell Butte Post Office.

Destination resorts are another active center and destination that influences travel patterns in Crook County. Destination Resort Overlays, including on Figure 2 in the previous section, depict the areas where these centers are located or planned. Developed recreational facilities such as golf courses, visitor-oriented accommodations such as overnight lodging, and residential developments for full-time residents are optional components of Destination Resorts. These resorts draw visitors and residents and remain an important consideration for future transportation needs.

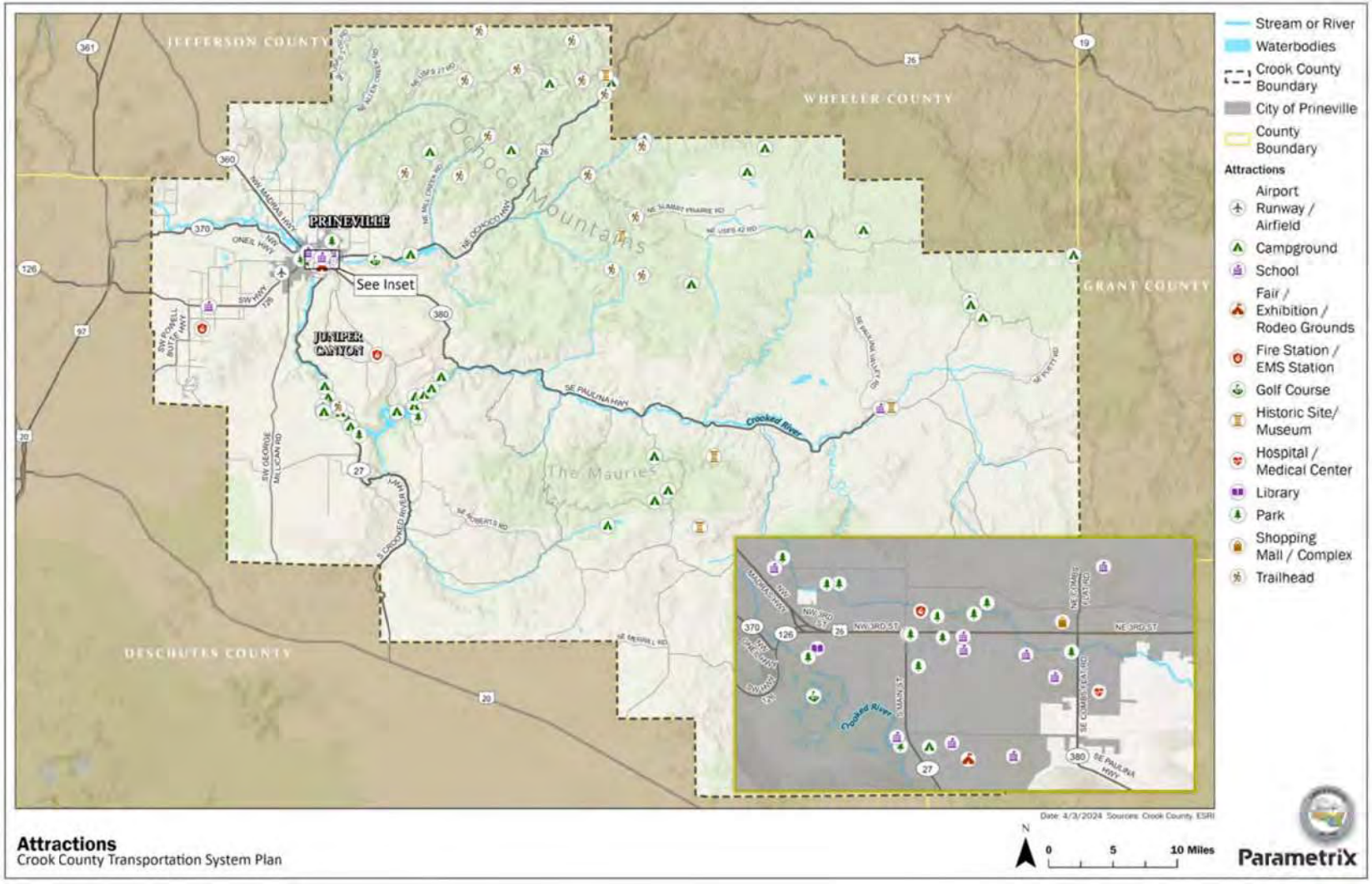


Figure 5. Attractions

4. Transportation System Inventory

The following section describes a comprehensive inventory of Crook County's existing transportation system. This analysis is organized by the major infrastructure components that make up the city's transportation system: roads, bridges and culverts, bicycle and pedestrian infrastructure, public transportation, freight, rail, and air infrastructure, and Intelligent Transportation System facilities.

4.1 Road System

The following illustrate and summarize the current street characteristics within the county.

4.1.1 Functional Classifications

Functional classification levels for roadways establish a hierarchy based on their primary function: moving people across regions or providing access to local destinations. These classification levels are identified by ODOT for state facilities; the County identifies classifications for county facilities. The classification levels also determine the recommended roadway cross section. Crook County desires to update its functional classification system as part of this TSP update. The functional classification of roadways that local agencies typically establish is based on the following hierarchy:

- **Arterials** represent the highest class of roadway. These roadways are intended to provide mobility by serving high volumes of traffic, particularly through traffic, at higher speeds. They also serve truck movements and should emphasize traffic movement over local land access. In some cases, arterial streets are further designated as "major/principal" or "minor." Major/principal arterials have higher design speed, fewer accesses per mile, and usually do not permit direct private driveway access. Minor arterials provide slightly lower travel speeds and have a few more accesses than major/principal arterials.
- **Collectors** provide balance between traffic movement and land access and should provide extended continuous stretches of roadway to facilitate traffic circulation through the county. Collector streets are sometimes divided into two categories: urban collector/rural major collector and minor collector. Urban collector/rural major collector have the same basic roadway design but are differentiated by urban features such as bike lanes and sidewalk, as well as adjacent land use (i.e., the land is inside or outside the UGB). Minor collectors serve lower volumes of traffic and have lower design speeds than the urban collector/rural major collector.
- **Local roads** are the lowest roadway class. Their primary purpose is to provide local land access and to carry locally generated traffic at relatively low speeds to the collector street system. Local streets should provide connectivity through neighborhoods, but they should be designed to discourage cut-through vehicular traffic.

Figure 6 illustrates the functional classification of roadways within Crook County.

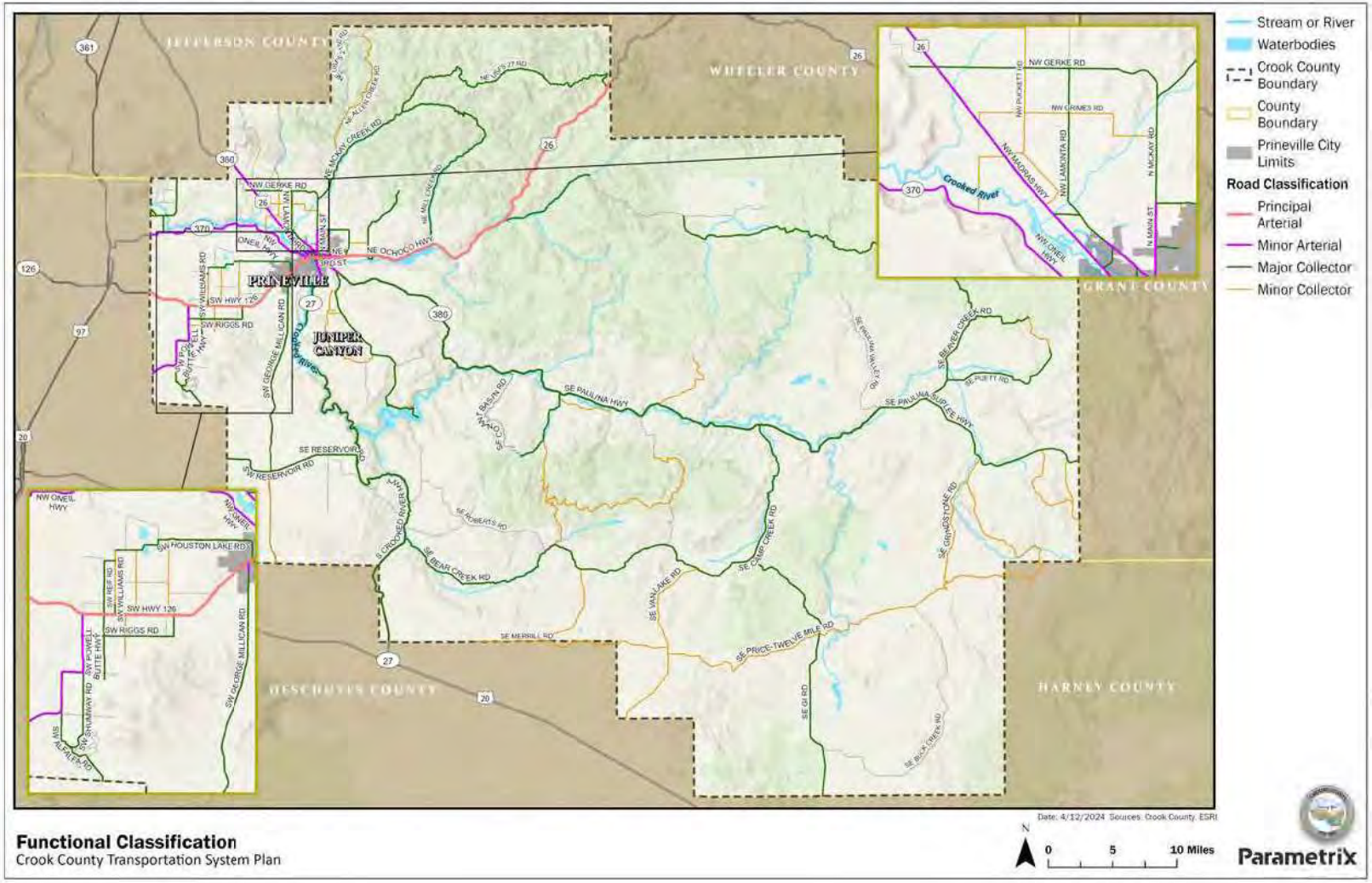


Figure 6. Functional Classification

4.1.2 Jurisdictional Responsibility for State and County Streets

A network of highways, arterials, collectors, and local streets serves Crook County. Most roadways within unincorporated Crook County fall under the jurisdiction of the state (ODOT) or the county, although there are several other agencies and private entities responsible for roadways within the study area. The following sections describe the jurisdiction and characteristics of the roadways, and Figure 7 is a map of the roadway ownership in Crook County.

4.1.2.1 State Roadways

The state facilities within Crook County provide statewide and regional connectivity. These facilities include US 26, OR 126, OR 370, OR 380, and OR 27. The following list describes the connections provided by the state roadways:

- OR 126 provides direct connections between Redmond, Powell Butte, and Prineville.
- US 26 provides connections to eastern Oregon and Idaho to the east and Madras to the northwest.
- OR 380 provides connections between Prineville and the eastern areas of Crook County including the community of Paulina.
- OR 27 provides connections between Prineville and US 20 to the south. It also serves recreational areas including the Crooked River and Prineville Reservoir.
- OR 370 provides a connection between Prineville and US 97 north of Redmond.

US 20, US 26, and OR 126 are also designated as part of the National Highway System that includes roads identified as important to the nation's economy, defense, and mobility.

4.1.2.2 County Roadways

Crook County maintains 472 miles of roadway: 230 miles of paved roads and 242 miles of gravel roads. These facilities provide connections to state highways, the city of Prineville, unincorporated communities, and local destinations such as National Forest and reservoirs. Most of the roadways within Crook County are County-owned and -maintained, with the exception of state roadways and other federally and privately owned facilities.

4.1.2.3 Other Roadways

In addition to the state and county, there are several other agencies or private owners responsible for roadways within the study area. These roadways are owned by the U.S. Forest Service, Bureau of Land Management, and private owners. The majority of these facilities connect to county or state roadway facilities.

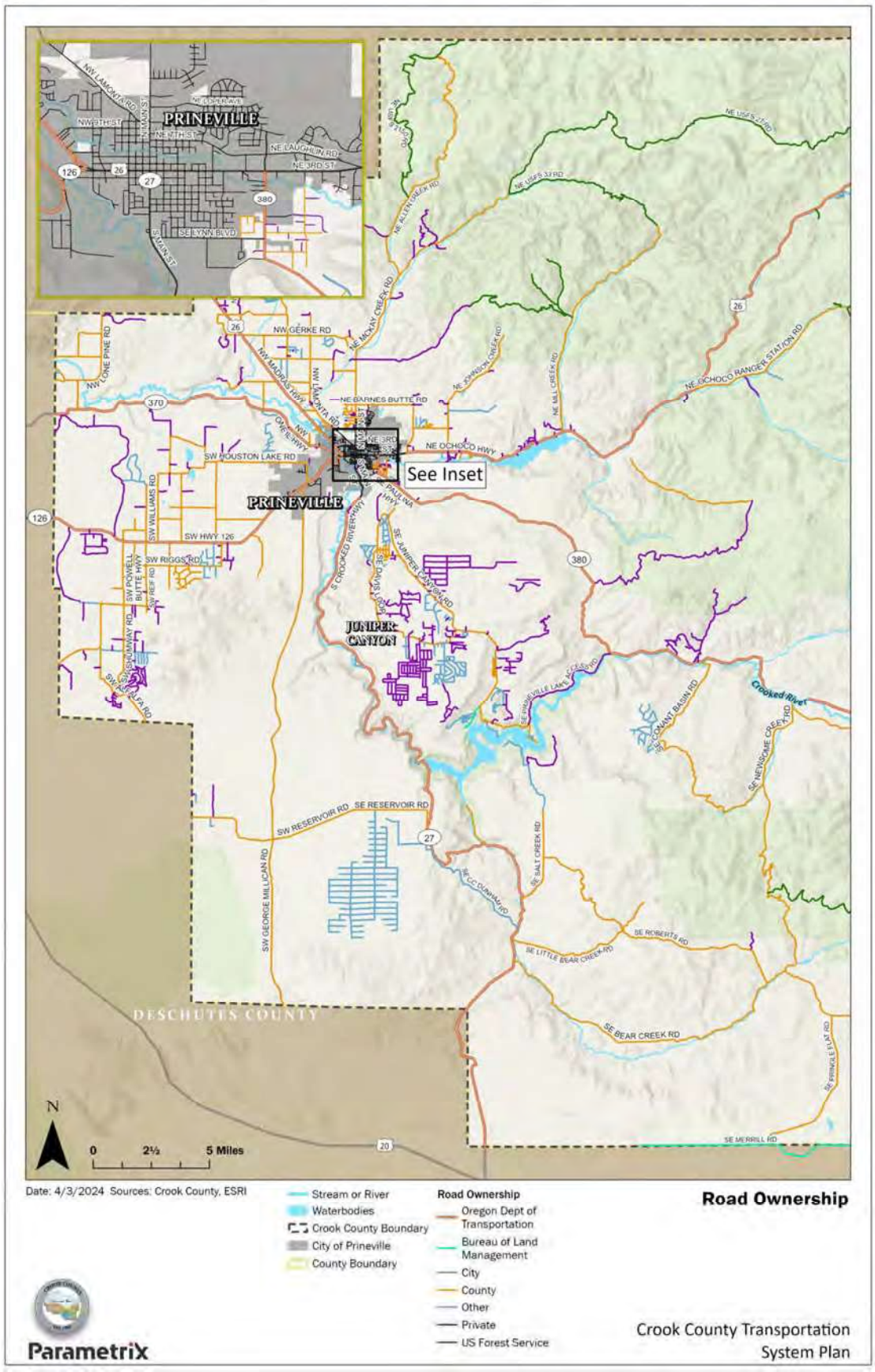


Figure 7. Road Ownership

4.1.3 Pavement Types and Condition

The condition of roadways across the county varies. The sections below provide additional detail on roadway condition based on jurisdiction.

4.1.3.1 State Facilities

Table 4 summarizes the functional classifications and pavement conditions for state highways within Crook County. As of 2022, the pavement condition for state highways was noted as "good" for OR 370, while the pavement conditions of US 26, OR 126, OR 380, and OR 27 varied.

Table 4. State Roadway Functional Classifications and Characteristics

Route Name	ODOT Highway Number	Facility Extents	ODOT Facility Designation	ODOT Functional Classification	Pavement Condition (2022)
US 26	360	West of Prineville	Regional Highway	Rural Minor Arterial	Fair
	041	East of Prineville	Statewide Highway	Rural Other Principal Arterial	Fair to Good
OR 370	370	Entire section within county limits, excluding Prineville	District Highway	Rural Minor Arterial	Fair to Good
OR 126	041	Entire section within county limits, excluding Prineville	Statewide Highway	Rural Other Principal Arterial	Poor
OR 380	380	Entire section within county limits, excluding Prineville	District Highway	Rural Major Collector	Prineville UGB to MP 20.68: Poor MP 20.68 to MP 24.73: Fair East of MP 24.73: Good
OR 27	014	Entire section within county limits, excluding Prineville	District Highway	Rural Major Collector	Prineville UGB to MP 4.6: Fair MP 4.6 to MP 20.39: Poor MP 20.39 to MP 23: Good MP 23 to MP 25.77: Fair MP 25.77 to County Border: No Pavement

MP = mile post; ODOT = Oregon Department of Transportation

4.1.3.2 County Roadways

Crook County owns one minor arterial (Powell Butte Highway) within its unincorporated boundaries, as shown in Figure 7. The majority of county roads are collectors or local roads. Crook County has 38 major rural collectors and 26 minor rural collectors; this is 472 miles of road to maintain. Of this, 230 miles (49%) are paved. Based on data summarized by the County, the overall Pavement Condition Index is 81 out of 100; this exceeds the County's goal of 70 (Crook County 2024).

4.1.4 Roadway Cross Section Standards

4.1.4.1 State Facilities

State highways in Crook County are all two-lane roadways with posted speed limits of 55 miles per hour (mph) throughout the majority of the county. Table 5 describes current characteristics of state routes through Crook County.

Table 5. State Functional Classifications

Route Name	ODOT Highway Number	Facility Extents	ODOT Facility Designation	ODOT Functional Classification	Posted Speed Limit	Number of Lanes
US 26	360	West of Prineville	Regional Highway	Rural Minor Arterial	55	2
	041	East of Prineville	Statewide Highway	Rural Other Principal Arterial	55	2
OR 370	370	Entire section within County limits, excluding Prineville	District Highway	Rural Minor Arterial	55	2
OR 126	041	Entire section within County limits, excluding Prineville	Statewide Highway	Rural Other Principal Arterial	55 [a]	2
OR 380	380	Entire section within County limits, excluding Prineville	District Highway	Rural Major Collector	55	2
OR 27	014	Entire section within County limits, excluding Prineville	District Highway	Rural Major Collector	55	2

a Speed limit on OR 126 drops to 45 mph through Powell Butte.

4.1.4.2 County Facilities

The County's current TSP identifies recommended roadway standards and shoulder widths for rural roads, as presented in Table 6 and Table 7. The County recommends wider shoulder widths for routes that carry higher volumes of bicycle traffic, as shown in Table 8. There are currently no standards for separated pedestrian or bicycle facilities. Figure 8 illustrates the typical street cross section by roadway classification.

Table 6. Recommended Roadway Standards

Classification	Pavement Width, Including Paved Shoulder (feet)	Paved Shoulder Width (feet)	Parking	Right-of-Way (feet)
Arterial	36–40	6–8	None	80–100
Major Collector	32–40	4–8	Off Pavement	80
Minor Collector	30–38	4–8	Off Pavement	80

Classification	Pavement Width, Including Paved Shoulder (feet)	Paved Shoulder Width (feet)	Parking	Right-of-Way (feet)
Local	24–28	2–4	Off Pavement	60–80

Table 7. Recommended Shoulder Widths on Rural Roads

	Shoulder Width (feet)				
Classification	ADT < 400	ADT > 400 DHV < 100	DHV 100–200	DHV 200–400	DHV > 400
Arterial	4	6	6	8	8
Collector	2	4	6	8	8
Local	2	2	4	6	8

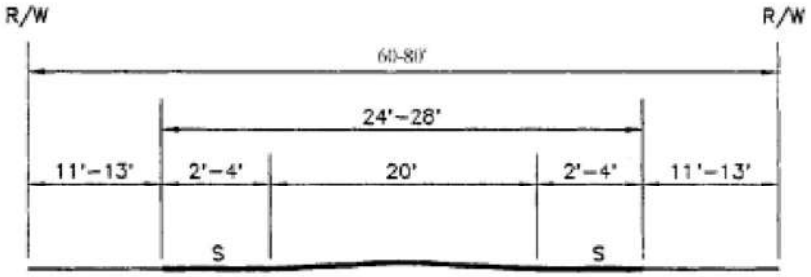
*ADT = Average Daily Traffic, the average number of trips over a 24-hour period; DHV = Design Hour Volume, the expected traffic volume in the peak design hour

Table 8. Recommended Shoulder Width for Bicycle Routes

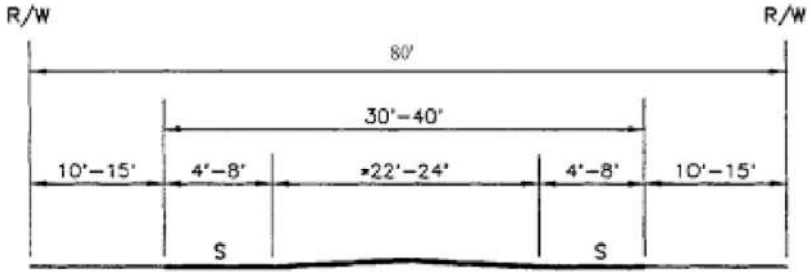
Classification	Volume (AADT)	Speed (mph)	Recommended Minimum Paved Shoulder Width (feet)
Principal Arterial	Up to 8,500	65	8
Minor Arterial	Up to 6,000	55	7
Major Collector	Up to 2,600	45	6.5
Minor Collector	Up to 1,100	35	5

AADT = average annual daily traffic; mph = miles per hour

A. LOCAL STREET

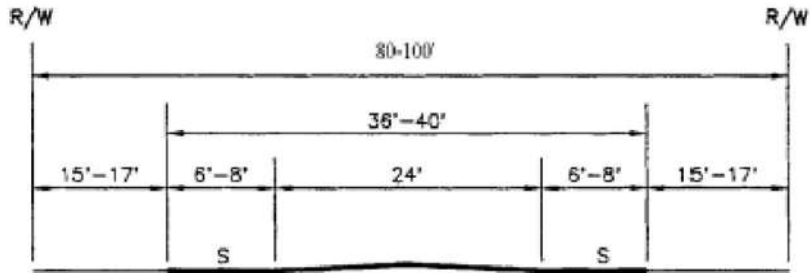


B. COLLECTOR



*Major Collector: 12' Travel Lanes
Minor Collector: 11' Travel Lanes

C. ARTERIAL



LEGEND

R/W = RIGHT-OF-WAY LINE
S = SHOULDER

Figure 8. Typical Street Cross Sections

Source: Crook County Code, Chapter 17.32

4.1.5 Access Management and Spacing

Providing adequate access to other public roadways, land uses, and destinations is a critical part of an effective transportation system. However, it is necessary to balance access with the need for mobility and safety on the system. Providing access via other public streets and driveways to land uses creates friction from a traffic operations perspective; it reduces mobility and introduces points of conflict that can increase the potential for crashes.

Access management strategies and implementation require careful consideration to balance access and mobility in a safe and efficient manner. In general, access management is generally more stringent on higher classified roads where mobility is the highest priority. Table 9 illustrates the relationship between access and mobility relative to the street classifications in Crook County.

4.1.5.1 State Facilities

The Oregon Highway Plan implements Highway Division Chapter 734, Division 51 by establishing access management policies for ODOT highway construction, reconstruction or modernization projects and approach road permits. Planning processes including state highways are included as well.

Access management for state facilities is outlined in OAR 734-051, and spacing standards are dependent upon several variables including average annual daily traffic (AADT) volumes, posted speed, and functional classification. The access management standards for state facilities in Crook County are summarized in Table 9.

Table 9. Access Spacing Standards for ODOT Facilities

Route Name	ODOT Highway Number	Facility Extents	ODOT Facility Designation	ODOT Functional Classification	Posted Speed Limit (mph)	AADT	Access Spacing Standard (feet)
US26	360	West of Prineville	Regional Highway	Rural Minor Arterial	55	> 5,000	1,320
	041	East of Prineville	Statewide Highway	Rural Other Principal Arterial	55	> 5,000	1,320
OR 370	370	Entire section within County limits, excluding Prineville	District Highway	Rural Minor Arterial	55	< or = 5,000	650
OR 126	041	Entire section within County limits, excluding Prineville	Statewide Highway	Rural Other Principal Arterial	55 [a]	> 5,000	1,320
OR 380	380	Entire section within County limits, excluding Prineville	District Highway	Rural Major Collector	55 [b]	< or = 5,000	650
OR 27	014	Entire section within County limits, excluding Prineville	District Highway	Rural Major Collector	55	< or = 5,000	650

Source: Oregon Highway Plan

a Speed limit on OR 126 drops to 50 mph and 40 mph through Powell Butte.

b Speed limit on OR 380 drops to 45 mph and 35 mph south of Prineville city limits.

AADT = average annual daily traffic; mph = miles per hour; ODOT = Oregon Department of Transportation

4.1.5.2 County Facilities

The access management standards for Crook County facilities are summarized in the existing Crook County TSP and in Table 10. The spacing standards are intended to be applied to newly constructed or reconstructed roads and new driveways as development or redevelopment occurs rather than used to eliminate existing driveways.

Table 10. Access Management Spacing Standards for Crook County Facilities

Functional Classification	Minimum Posted Speed (mph)	Minimum Spacing Between Driveways/Streets (feet)	Minimum Spacing Between Intersections	Adjacent Land Use
Arterial	55	1,200	1 mile	Undeveloped or agricultural land between major population centers
Major Collector	35–55	500	0.5 miles	Undeveloped or agricultural land between and through cities or rural service centers

Functional Classification	Minimum Posted Speed (mph)	Minimum Spacing Between Driveways/Streets (feet)	Minimum Spacing Between Intersections	Adjacent Land Use
Minor Collector	25–55	300	0.25 miles	Undeveloped or agricultural land between and through cities or rural service centers
Local	25	Access to each lot permitted	150 feet	Residential

Source: Crook County TSP (2017).

4.1.6 Juniper Canyon Access

Residents who live in the subdivisions of Juniper Canyon rely on SE Juniper Canyon Road to travel between their neighborhoods, Prineville Reservoir State Park, and Prineville. With SE Juniper Canyon Road terminating at Prineville Reservoir State Park, no other access route from Prineville to Juniper Canyon exists. Residents have long desired the construction of an alternate route to enhance Juniper Canyon access. A survey conducted in 2021 asked community members to share their feedback on both the need for an alternate route and on options for how to fund the improvement. Survey responses identified significant interest in an alternate route, with many respondents citing emergency response, evacuation routes in the case of wildfire or other natural disaster, and options in case of closure due to a crash or poor road conditions. These sentiments were echoed by many participants in the first phase of engagement for the Crook County TSP update. In particular, participants noted the following needs related to SE Juniper Canyon Road:

- Address excessive speeding on SE Juniper Canyon Road.
- Perform consistent winter maintenance to maintain safe traveling environment.
- Create a new access route near the Crooked River or from the south of SE Juniper Canyon Road to OR 380.
- Ensure the new access route is south of SE Davis Loop to benefit the greatest number of residents.

4.2 Bridges and Culverts

The County maintains 111 bridges and 1,676 culverts (Crook County 2024). ODOT maintains an inventory of bridge conditions within the county. Each bridge is given a sufficiency rating, a measure between 0 and 100 calculated by the Federal Highway Administration (FHWA), based on factors such as condition, materials, load capacity, and geometry (i.e., dimensions). FHWA uses the rating to prioritize the allocation of funds for bridge repairs. In general, bridges with a sufficiency rating of less than 50 are given priority. The sufficiency rating is used to identify deficiencies, which may include structural issues or functional issues. For example, older bridges may be narrow and not designed to the same width or height clearance of today's standards. Therefore, a sufficiency rating does not necessarily indicate a structural issue.

There is only one bridge in unincorporated Crook County with a sufficiency rating of less than 50. Bridge 13C24, located on SE Weigand Road (County Road 211) at the crossing of the irrigation ditch, has a sufficiency rating of 38.8. ODOT has identified this bridge as structurally deficient. Bridge 19083 on County Road 221 over Paulina Creek has a sufficiency rating of 89.2, but it is considered functionally obsolete and needs to be replaced.

4.3 Bicycle and Pedestrian Inventory

There are no existing sidewalks in unincorporated Crook County to serve people walking and rolling. Multi-use trails and wide shoulders provide opportunities for pedestrian travel. Existing bicycle facilities in the county include designated bike lanes as well as multi-use trails and wide shoulders. Figure 9 depicts existing and proposed bike facilities, including multi-use trails. In addition to these bike facilities, Crook County also features popular recreational routes along gravel or primitive routes. Located in areas, such as Ochoco National Forest, these routes provide riders with a low-car, immersive ride experience in nature. Featured on popular recreational websites, these routes can be instrumental in attracting more people to ride bicycles and raising awareness of people riding bicycles for transportation on roads.

Where no designated facilities are available, bicyclists and pedestrians must share the road with motor vehicles. Pedestrians include people traveling by foot or with the use of an assistive mobility device such as a wheelchair. Bicyclists may be of any age or ability. However, only the more confident, experienced riders are likely to be comfortable sharing high-speed rural roads. On lower classification roadways, such as local roads in residential areas, shared facilities may be appropriate. While Crook County gravel routes generally provide a traffic-free experience for recreational bicycle riders, reaching these locations by bike often requires travel along high-stress roadways with no paved shoulder, such as NE McKay Creek Road. This can discourage less confident riders from riding to the beginning of their recreational route and limit access to recreational areas.

Figure 10 displays the location and width of shoulders along ODOT-owned roadways and represents the 2017 TSP's proposals. The majority of OR 370, OR 380, and OR 27 lack shoulders. Where shoulders are present, they are typically less than 5 feet wide and provide limited space for travel. The 2017 TSP included recommended shoulder widths for county roadways identified as bicycle routes; these recommendations consider traffic volumes and posted speed limits, with shoulders ranging from 5 to 8 feet wide. The 2017 TSP's recommendations were developed through local / state agency collaboration and local stakeholder involvement and aimed to meet Crook County's current and future needs. They considered areas of relatively high bicycle usage based on Strava data analyzed as part of the plan development.

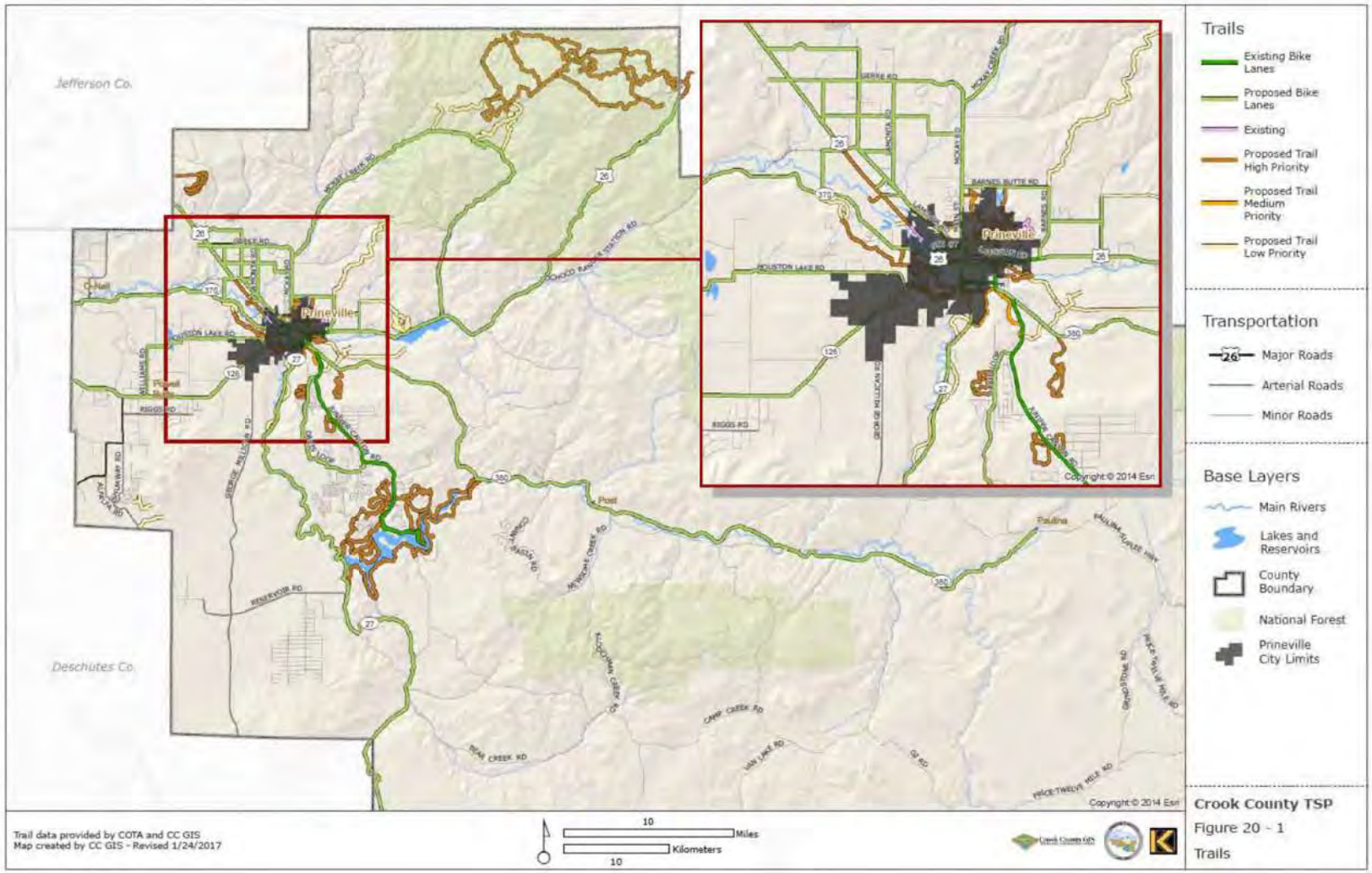


Figure 9. Existing and Proposed Bicycle Facilities

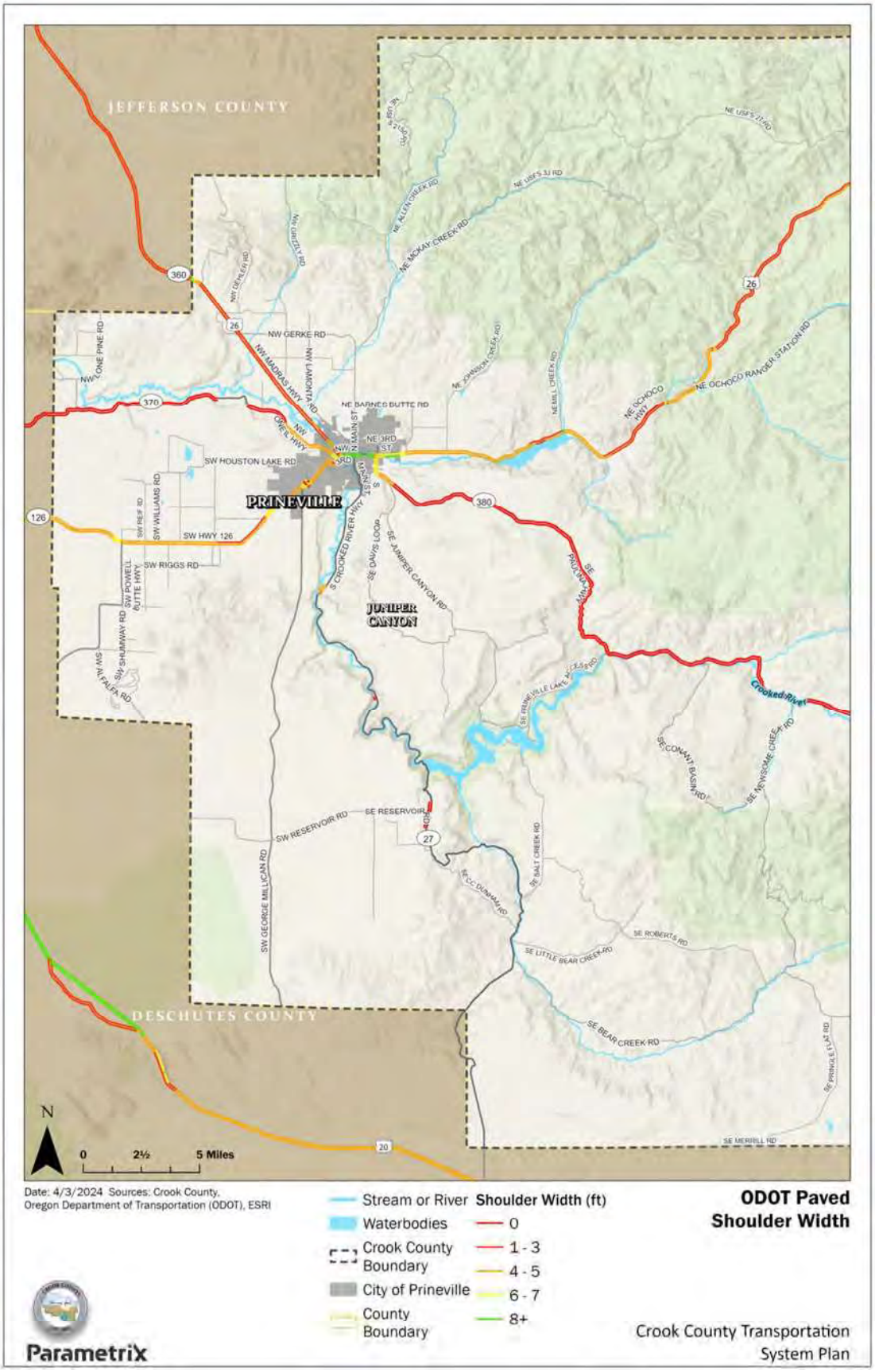


Figure 10. ODOT Paved Shoulder Width

4.4 Public Transportation Inventory

Cascades East Transit (CET) provides public transportation within Crook County. The CET Dial-A-Ride program provides prescheduled rides to people in the service area, which includes most of Prineville and some parts of unincorporated Crook County adjacent to Prineville. One CET vehicle serves the Prineville area, and service is provided from 7 a.m. to 5:30 p.m. on weekdays.

In addition to the Dial-A-Ride program, the CET fixed Route 26 provides bus service from Prineville to Redmond on weekdays and includes a stop in Powell Butte (see Figure 11). The stop in Powell Butte is located at the Powell Butte Church, which acts as a park-and-ride location. This stop also allows for pedestrians and bicyclists to connect to transit. All CET buses provide bicycle racks on the front of the buses that can accommodate at least two bicycles. Bicyclists are allowed to bring their bicycles on the bus in the case that the provided racks are full. The Route 26 schedule is shown in Table 11.

Table 11. Route 26 Service Timetable

Eastbound				Westbound			
Redmond Library	Powell Butte Church	Crook Co. Library	Stryker Park	Stryker Park	3rd @ Harwood	Powell Butte Church	Redmond Library
6:03	-	6:28	6:32	6:42	6:45	6:58	7:11
7:22	-	7:47	7:51	8:01	8:04	8:17	8:30
9:00	-	9:25	9:29	9:39	9:42	-	10:08
11:30		11:55	11:59	12:09	12:12	-	12:38
12:50		1:15	1:19	1:29	1:32	-	1:58
14:23	14:36	14:49	14:52	15:02	15:05	-	15:30
15:50	16:03	16:16	16:20	16:30	16:33	-	16:58
17:50	-	18:16	18:20	18:30	18:33	-	18:58

Note: Data accurate as of June 2024

In the CET *2040 Transit Master Plan* (CET 2020), CET hopes to work toward a higher level of service in Crook County for the Route 26 bus line by increasing the frequency and length of service between Prineville and Redmond and Bend. The plan also indicates that Route 26 will interline with Route 24 to provide a one-seat ride to Bend, add weekend service, re-route to serve the Redmond Airport and Central Oregon Community College, and improve accessibility for residents in more rural areas of the county. The transit master plan also identifies extended Dial-A-Ride service hours (extending to 5:30 p.m.) as well as evening and Saturday limited circulation as part of a Route 26 flex-route. Recommended development code amendments for counties include requiring coordination between counties and CET to bolster developer-led improvements at proximal transit stops and allowing transit -related uses such as park and rides and transit centers in parking lots.

CET drivers are employed by the Central Oregon Intergovernmental Council, the operator of CET. Funding for service in Crook County occurs through a variety of sources including fares, the Crook County General Fund, the City of Prineville General Fund, Oregon Special Transportation Funds, and federal 5310 funds (assisting with transportation of seniors and individuals with disabilities), 5311 funds (assisting with transportation in rural areas), and 5311F funds (assisting with transportation within inner city areas).

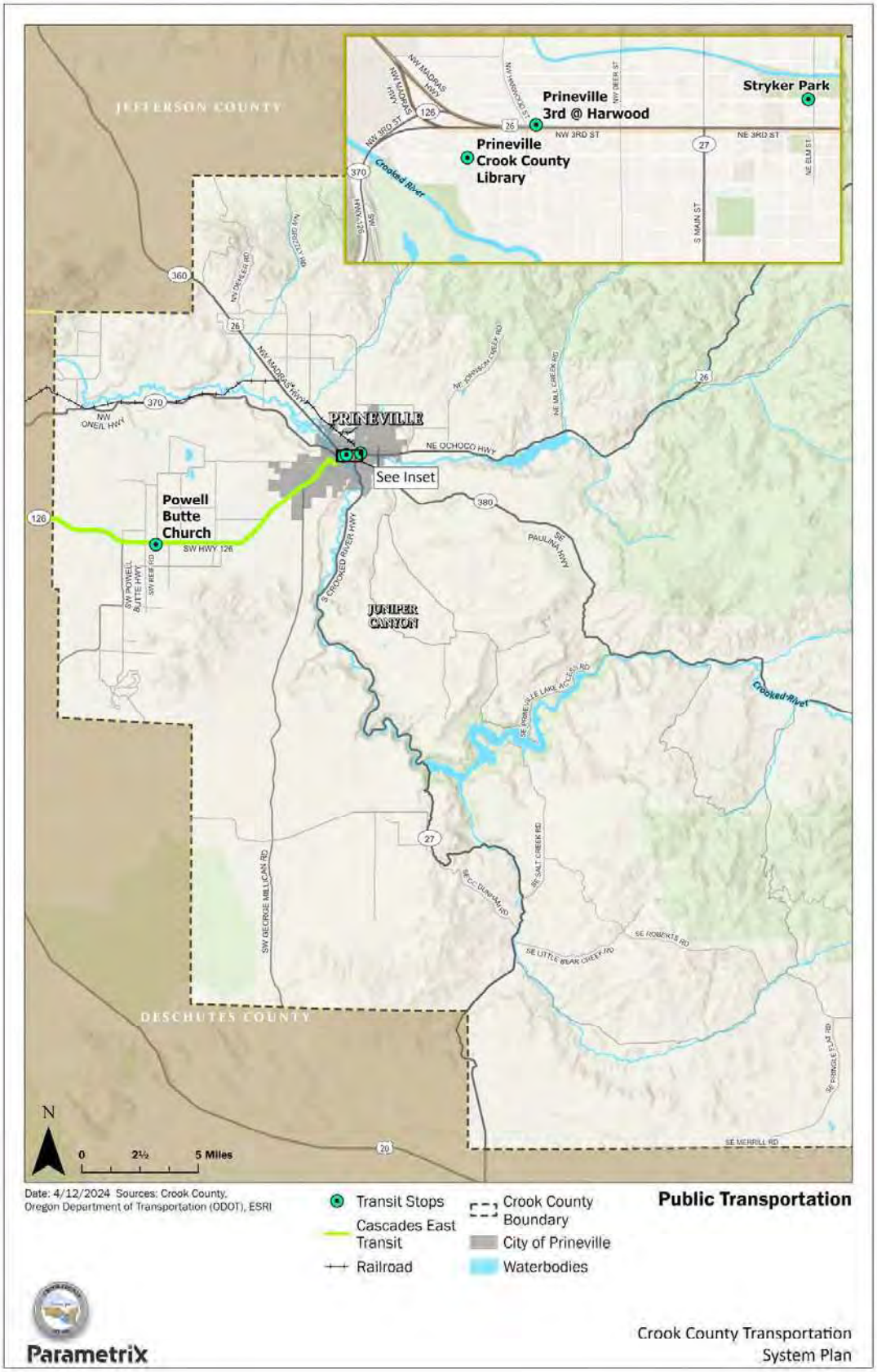


Figure 11. Public Transportation

4.5 Freight Inventory

There are two designated state freight routes in the study area, US 26 and OR 126, as shown in Figure 12. These routes are designated as reduction review routes whose vehicle carrying capacity cannot be reduced unless safety or access factors require a reduction. Local governments can also request an exemption. Freight is transported on a number of other roadways to access industrial locations within the unincorporated area of the county, such as the Prineville Freight Depot, the Crook County Landfill, and Facebook. OR 126 serves a connection between Bend and Prineville and therefore may experience higher freight volumes than other roadways. In addition, Millican Road is a common truck route that connects to the industrial land on the eastern side of Prineville.

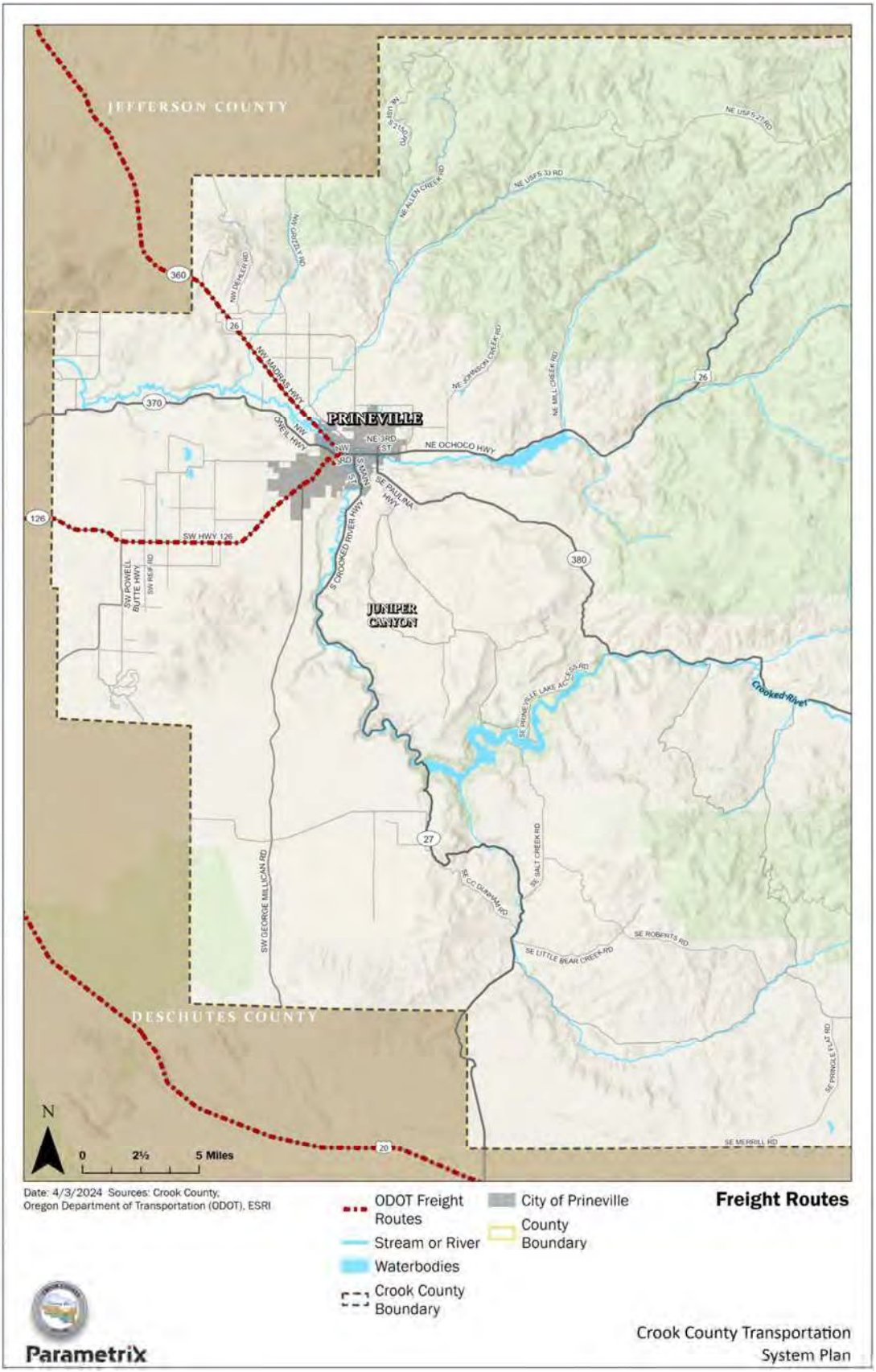


Figure 12. Freight Routes

4.6 Rail Inventory

The City of Prineville Railway (COPR) operates a Class III short-line freight railroad. This is the only railroad in Crook County. The railroad carries a variety of products including consumer and forest products, chemicals, and building materials. The COPR short line connects with Class I railroads in Redmond on the Oregon Trunk Line that runs from the Columbia River to Klamath Falls. Table 12 details operational characteristics for the COPR.

Table 12. Rail Inventory

Service Type	Owner	Classification	Track Condition	Speed	Timetables
Freight	City of Prineville	Class III short line	Good	10–20 mph	As needed, Monday–Friday

mph = miles per hour

The existing railroad ends west of the Main Street and 10th Street intersection north of downtown Prineville. The Prineville Freight Depot provides intermodal connection and is intended to complement the services offered by the COPR. It is located adjacent to the COPR mainline, 3 miles west of Prineville. The freight depot acts as a regional multimodal transportation hub that provides Central Oregon with services such as storage and managed distribution. Roadway traffic volumes would increase if rail service were discontinued due to the large quantities of freight moved by the COPR.

There is no passenger service for residents of Crook County. The nearest passenger service is available on Amtrak at the passenger station in Chemult.

4.6.1 Rail Crossings

There are six public railroad crossings in Crook County (not including locations within the Prineville UGB). Of these, five are at-grade crossings, and in one location the roadway (US 26) crosses under the rail. Table 13 below lists these crossing locations. As shown in Figure 13, there are also approximately 30 rail crossings that involve a private road.

Table 13. Railroad Crossing Locations

Location	Crossing Type	Road Authority
Gumpert Road	At Grade	Crook County
NW Lone Pine Road	At Grade	Crook County
Elliot Lane	At Grade	Crook County
NW Bus Evans Lane	At Grade	Crook County
US 26	Railroad Overpass	ODOT
NW Elliot Lane	At Grade – Spur	Crook County

ODOT = Oregon Department of Transportation

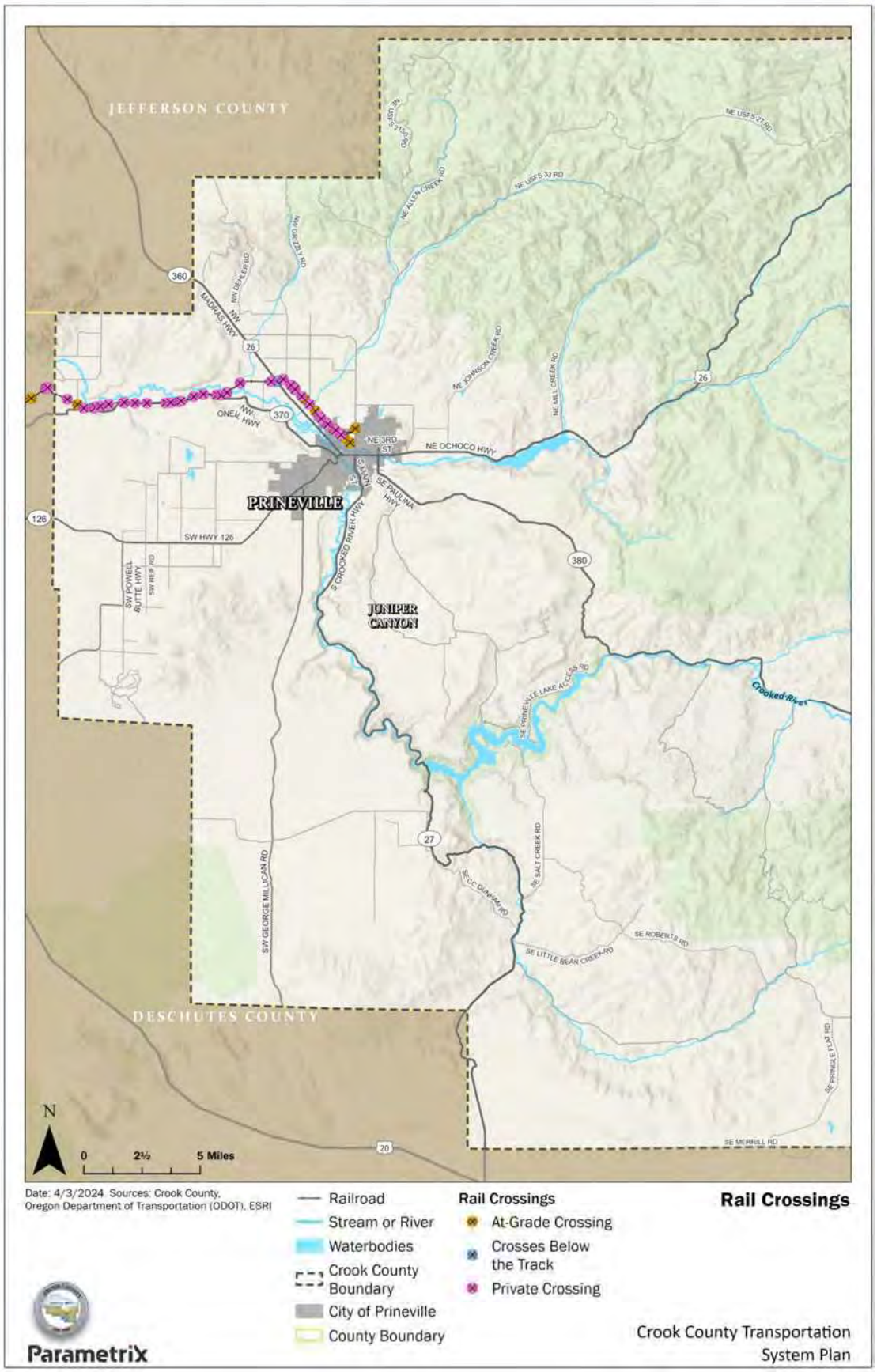


Figure 13. Rail Crossings

4.7 Air Transportation Inventory

The Prineville Airport occupies 940 acres approximately 3 miles southwest of the city of Prineville and immediately northwest of the intersection of OR 126 and SW George Millican Road (see Figure 14). It is primarily used for general aviation and business purposes. It also facilitates fire support helicopters. The airport is classified as a Class IV, Community General Aviation Airport, by the Oregon Department of Aviation (ODAV). According to ODAV, Class IV airports accommodate general aviation users and local business activities. Class IV airports have 2,500 or more annual operations or more than 10 aircraft based on-site.

The airport has main and secondary paved runways. The main runway (28-10) is 5,750 feet long by 75 feet wide. According to a January 2013 report by the Federal Aviation Administration (FAA), the runway is in good condition. The secondary runway (33-15) is 4,000 feet long by 40 feet wide and is in fair condition according to the 2013 FAA report. The airport is part of the National Plan of Integrated Airport Systems, and it is eligible for federal funding.

According to the Oregon Department of Aviation, Crook County is also served by several private airstrips:

- Blue Mountain Ranch Airport – 4 miles northwest of Paulina
- Dry Creek Airpark – 7.5 miles south/southeast of Prineville
- Goering Ranches Airport – 3 miles northeast of Alfalfa
- Pioneer Memorial Hospital Heliport – north edge of Prineville
- River Run Ranch Airport – 8 miles east of Redmond
- Robeck Landing Heliport – 8.1 miles east/northeast of Powell Butte
- Shotgun Ranch Airport/Keeney – 8 miles east of Post
- Tailwheel Airport – 3 miles southeast of Prineville

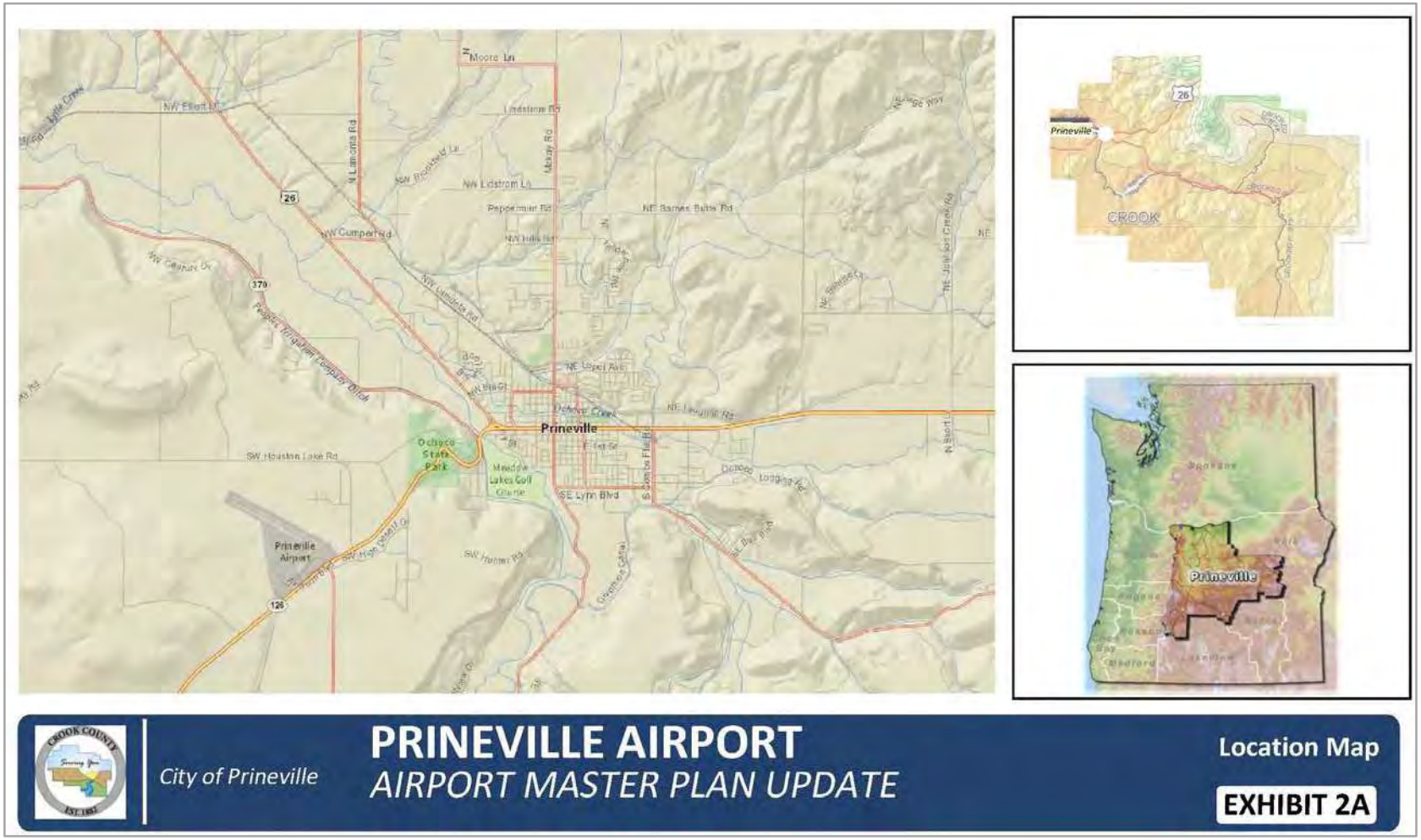


Figure 14. Prineville Airport

4.8 Intelligent Transportation System Facilities

There are six TripCheck cameras located in unincorporated Crook County. Two cameras are located at OR 370 at NW Lone Pine Road, while one camera each is located at Juniper Canyon Fire Station, OR 126 at Powell Butte Highway, OR 380 at Paulina, and US 26 at Ochoco Summit. Prineville has one camera at NW 3rd Street and NW Harwood Avenue.

5. Existing System Conditions Analysis

5.1 Project Area Intersections

Existing conditions traffic operations for the six study intersections were analyzed using 2023 30th highest annual hour of traffic (30 HV). Although the focus was on the six study intersections (Intersections 4 through 6 and 8 through 10), turning movement counts were collected for 10 intersections, and average daily traffic (ADT) data were collected for four roadway segments in September 2023. See Table 14 and Figure 15 for more information.

Table 14. Study Area Intersection and Tube Count Locations

ID	Location	Type	Duration
1	NW Elliot Lane & O'Neil Highway/OR 370	TMC	4-hour
2	Rimrock Acres Loop & O'Neil Highway/OR 370	TMC	4-hour
3	US 26 & NW Gumpert Road	TMC	4-hour
4	**SW Powell Butte Highway & Ochoco Highway/OR 126**	**TMC**	**4-hour**
5	**SW Williams Road & Ochoco Highway/OR 126**	**TMC**	**5-hour**
6	**SW Parrish Lane & Ochoco Highway/OR 126**	**TMC**	**4-hour**
7	Stillman Road & Ochoco Highway/OR 126	TMC	4-hour
8	**S Powell Butte Highway & SW Bussett Road**	**TMC**	**4-hour**
9	**S Powell Butte Highway & Alfalfa Road**	**TMC**	**4-hour**
10	**SE Juniper Canyon Road & SE Paulina Highway/OR 380**	**TMC**	**4-hour**
A	SW George Millican Road, south of Tom McCall Road	Tube count	24-hour
B	SW Powell Butte Highway, north of Shumway Road/ SW Bussett Road intersection	Tube count	24-hour
C	S Powell Butte Highway, north of Alfalfa Road	Tube count	24-hour
D	SE Juniper Canyon Road, south of SE Paulina Highway/OR 380	Tube count	24-hour

Study intersections are bolded. All counts were conducted on September 28, 2023.

TMC = turning movement count

The counts were collected on a weekday and included both vehicle and pedestrian volumes. The full traffic counts are provided in Attachment A, Traffic Counts.

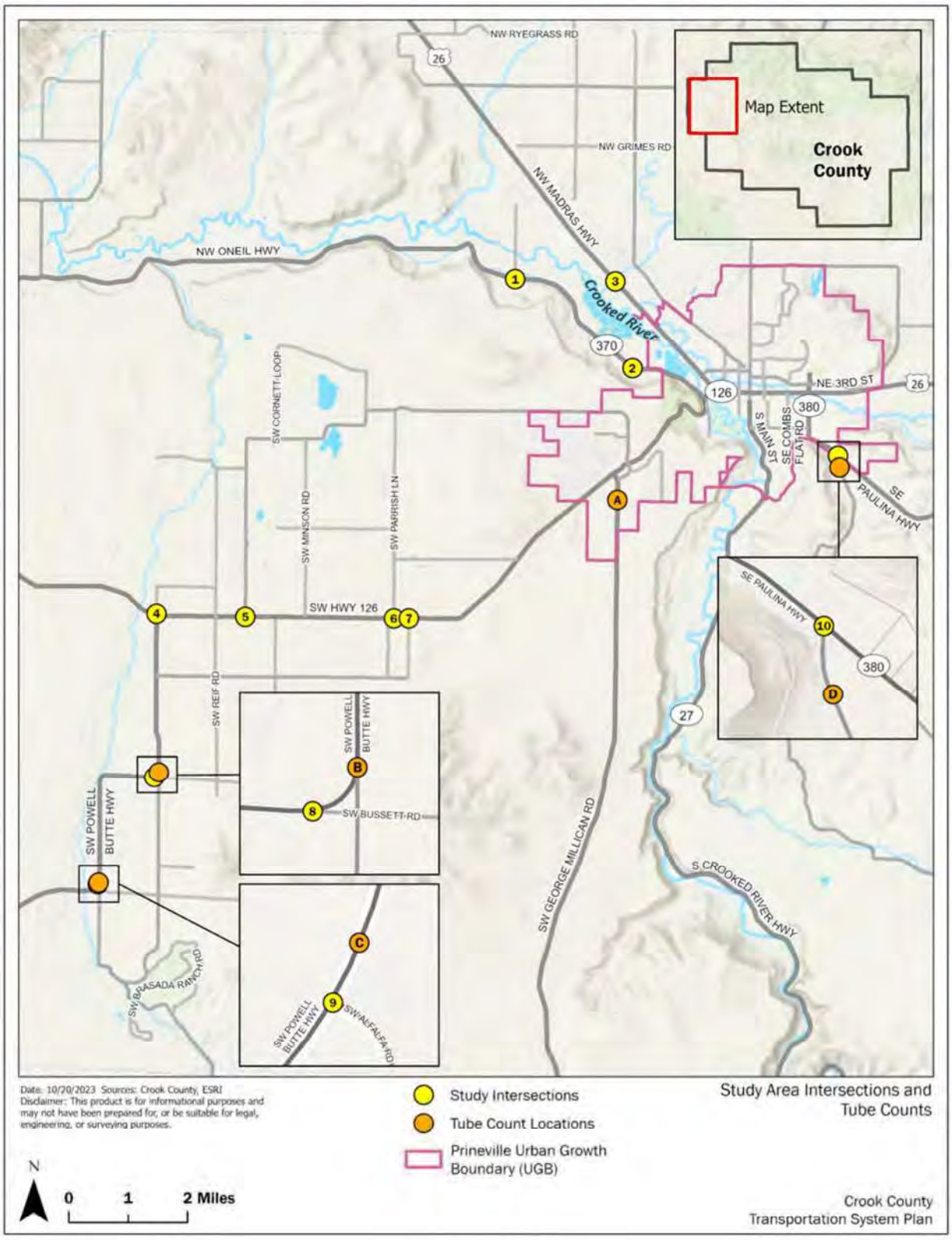


Figure 15. Study Area Intersections and Tube Counts

Note: Intersections 1, 2, 3, and 7 are not study intersections and were not included in the traffic analysis.

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The process of developing the 30 HV intersection volumes involved identifying the system's peak hour and making seasonal adjustments. Additional information regarding analysis procedures is documented in the Analysis Methodology Memorandum. An overall system peak hour of 3:30 p.m. to 4:30 p.m. was determined from the maximum hourly total intersection volumes.

Because the traffic counts were collected during a period where traffic volumes were lower than the 30 HV conditions, a seasonal adjustment factor was calculated as outlined in the ODOT *Analysis Procedures Manual* (APM; ODOT 2024). ODOT operates two automatic traffic recorders (ATR) near the study area—ATR 07-001 on US 26 east of Prineville and ATR 07-002 on OR 126 just west of the Deschutes-Crook county line—so an on-site ATR method was used to determine the seasonal adjustment factor. The percentages of weekday ADT for the count months and peak months between 2018 and 2022 were used to calculate a seasonal adjustment factor of 1.04 that was applied to the September 2023 counts.

The Year 2023 Existing Conditions peak hour intersection volumes for the six study intersections are shown in Figure 16.

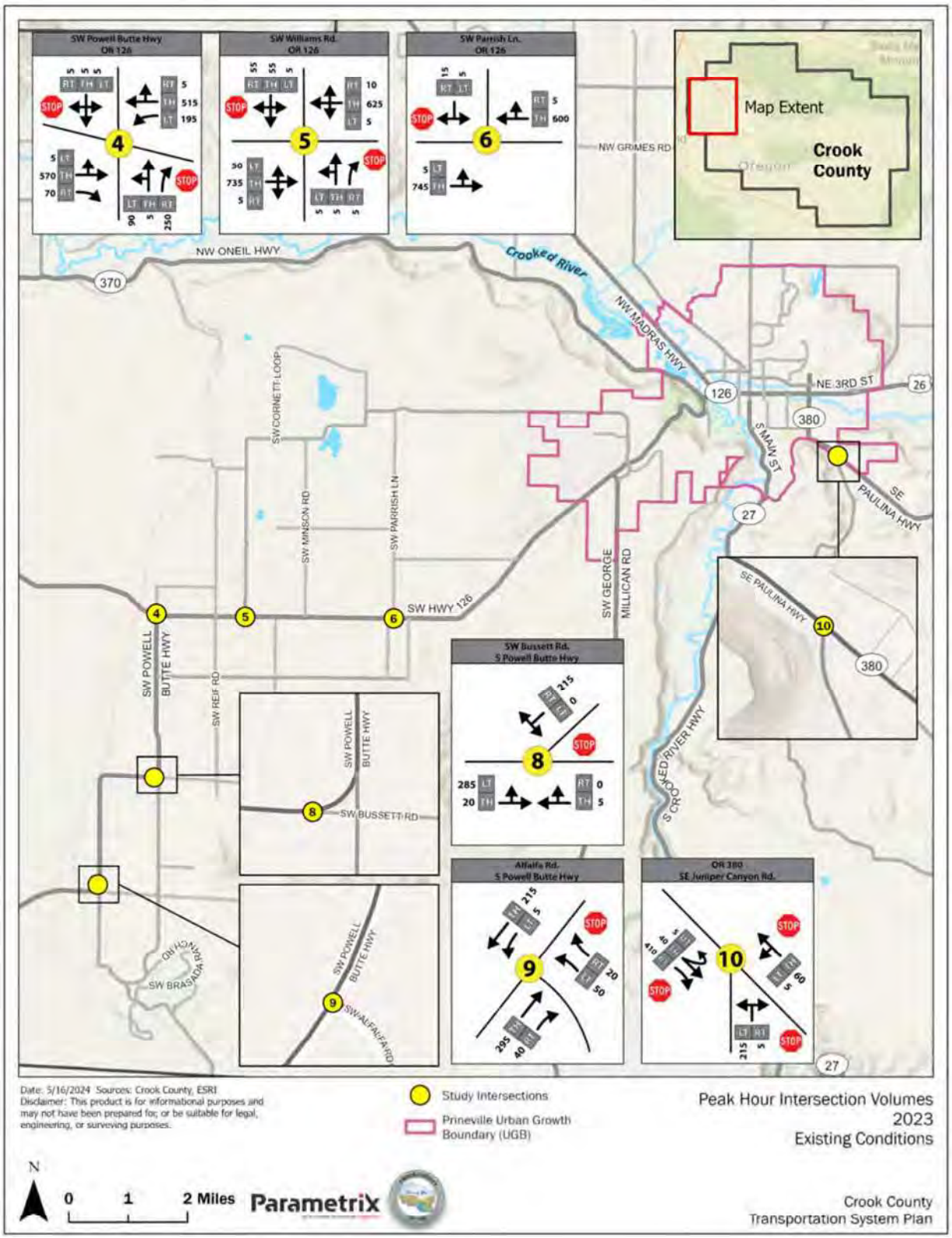

SW Powell Butte Hwy
OR 126
SW Williams Rd.
OR 126
SW Parrish Ln.
OR 126
Map Extent
Crook County
NW GRIMES RD
NW ONEIL HWY
Crooked River
NW MADRAS HWY
370
126
NE 3RD ST
26
380
S MAIN ST
SE PAULINA HWY
27
SW CORNETT LOOP
SW MINSON RD
SW PARRISH LN
SW GEORGE
MILLICAN RD
SW HWY 126
SW POWELL BUTTE HWY
SW REF RD
SW Bussett Rd.
S Powell Butte Hwy
SW BUSSETT RD
SE PAULINA HWY
380
S CROOKED RIVER HWY
Alfalfa Rd.
S Powell Butte Hwy
OR 380
SE Juniper Canyon Rd.
SW BRASADA RANCH RD
SW ALFALFA RD
Date: 5/16/2024 Sources: Crook County, ESRI
Disclaimer: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes.
Study Intersections
Prineville Urban Growth Boundary (UGB)
Peak Hour Intersection Volumes
2023
Existing Conditions
N
0 1 2 Miles
Parametrix
Crook County
Transportation System Plan

Figure 16. Peak Hour Intersection Volumes – 2023 Existing Conditions

5.2 Intersection Operations Analysis

Agencies establish minimum performance standards for the transportation system to help guide planning efforts, project development, and land use entitlements. These standards are often expressed as an amount of delay or congestion experienced by a motorist at intersections and serve as a metric to assess if a location is functioning satisfactorily or if it needs improvements. In Crook County, the study intersections are under County or ODOT jurisdiction.

State highway mobility targets were developed for the *1999 Oregon Highway Plan* as a method to gauge reasonable and consistent targets for traffic flow along state highways. The ODOT V/C ratio targets are based on highway classification and posted speeds and were used for the four study intersections under ODOT jurisdiction. For unsignalized intersections, non-state highway approaches are expected to meet the V/C ratios for district or local interest roads.

Level of service is another metric that describes how well an intersection operates. Intersections receive an LOS grade from A to F, where LOS A represents the best conditions with minimal delay at the intersection and LOS F represents the worst conditions. As part of the 2017 Crook County TSP, the County identified operations standards for LOS and V/C ratio, which were used for the two study intersections under County jurisdiction. Table 15 shows the applicable governing jurisdiction, intersection control, and mobility target for each study intersection.

Table 15. Intersection Mobility Targets

ID	Intersection	Jurisdiction	Control	Existing and Future No Build Mobility Target[1]
4	SW Powell Butte Highway & Ochoco Highway/OR 126	ODOT	TWSC	Major: V/C < 0.70 Minor: V/C < 0.80
5	SW Williams Road & Ochoco Highway/OR 126	ODOT	TWSC	Major: V/C < 0.70 Minor: V/C < 0.80
6	SW Parrish Lane & Ochoco Highway/OR 126	ODOT	TWSC	Major: V/C < 0.70 Minor: V/C < 0.80
8	S Powell Butte Highway & SW Bussett Road	County	TWSC	LOS E or LOS F with V/C ratio < 0.95
9	S Powell Butte Highway & Alfalfa Road	County	TWSC	LOS E or LOS F with V/C ratio < 0.95
10	SE Juniper Canyon Road & SE Paulina Highway/OR 380	ODOT	AWSC	Major: V/C < 0.80 Minor: V/C < 0.80

AWSC = all-way stop control; LOS = level of service; ODOT = Oregon Department of Transportation; TWSC = two-way stop control; V/C = volume to capacity

Traffic operations for the six study intersections were analyzed using Synchro. V/C ratios, delay, and LOS were reported using the *Highway Capacity Manual, 6th Edition* (HCM; TRB 2016). For the unsignalized intersections, V/C ratios and delay were reported for the worst movement along the major and minor street approaches. V/C ratios for the mainlines at two-way stop-controlled intersections were calculated based on ODOT APM guidelines (ODOT 2024).

Intersection 8 has a non-HCM-compatible stop configuration and could not be analyzed using HCM methods. Intersection 8 has a non-standard stop sign placement since Powell Butte Highway turns at the intersection, meaning the southbound and eastbound approaches are free while the westbound

approach is stop-controlled. Per Exhibit 12-12 in Chapter 12 of the ODOT APM, the intersection was analyzed in an Adjusted for Analysis configuration where the approaches with the major flows are modeled as if they are opposite each other.

V/C ratios, delay, and LOS for the Year 2023 Existing Conditions are summarized in Table 16. One of the six study intersections operates with a V/C ratio that exceeds the mobility target: SW Powell Butte Highway & Ochoco Highway/OR 126 (Intersection 4). Traffic reports are available in Attachment B, Synchro Reports.

Table 16. Year 2023 Existing Traffic Operations – V/C Ratio, Delay, and LOS

		Major Street				Minor Street			
ID	Intersection	V/C ratio	Delay (sec)	LOS	Exceeds Mobility?	V/C ratio	Delay (sec)	LOS	Exceeds Mobility?
4	SW Powell Butte Highway & Ochoco Highway/OR 126	0.34	10	A	No	1.30	303	F	Yes
5	SW Williams Road & Ochoco Highway/OR 126	0.49	9	A	No	0.22	51	F	No
6	SW Parrish Lane & Ochoco Highway/OR 126	0.44	9	A	No	0.07	18	C	No
8	S Powell Butte Highway & SW Bussett Road	0.00	0	A	No	0.01	13	B	No
9	S Powell Butte Highway & Alfalfa Road	0.00	8	A	No	0.11	13	B	No
10	SE Juniper Canyon Road & SE Paulina Highway/OR 380	0.54	12	B	No	0.34	11	B	No

LOS = level of service; sec = seconds; V/C = volume to capacity

The 95th percentile queue lengths were analyzed using Synchro and are summarized in Table 17. None of the queue lengths exceed the storage length or space between intersections. Traffic reports are available in Attachment B, Synchro Reports.

Table 17. Year 2023 Existing Traffic Operations – Queueing

ID	Intersection and Approach	95th Percentile Queue Length (feet)	Storage Length or Space Between Intersections (feet)
4	SW Powell Butte Highway & Ochoco Highway/OR 126		
	Eastbound approach	0	> 1,000
	Westbound approach	25	> 1,000
	Northbound approach	450	> 1,000
	Southbound approach	25	> 1,000
5	SW Williams Road & Ochoco Highway/OR 126		
	Eastbound approach	0	> 1,000
	Westbound approach	0	> 1,000
	Northbound approach	25	> 1,000
	Southbound approach	25	> 1,000

ID	Intersection and Approach	95th Percentile Queue Length (feet)	Storage Length or Space Between Intersections (feet)
6	SW Parrish Lane & Ochoco Highway/OR 126		
	Eastbound approach	0	525
	Westbound approach	0	> 1,000
	Southbound approach	25	525
8	S Powell Butte Highway & SW Bussett Road		
	Westbound approach	0	375
	Northbound approach	0	> 1,000
	Southbound approach	0	> 1,000
9	S Powell Butte Highway & Alfalfa Road		
	Westbound approach	25	525
	Northbound approach	0	> 1,000
	Southbound approach	0	> 1,000
10	SE Juniper Canyon Road & SE Paulina Highway/OR 380		
	Eastbound approach	0	> 1,000
	Westbound approach	0	> 1,000
	Northbound approach	0	> 1,000

5.3 Two-Lane Highway Capacity Analysis

Tube counts were collected at four locations, as shown in Table 14 and Figure 15. These four segments were analyzed using McTrans Highway Capacity Software (HCS) 2023, which is based on HCM 6th Edition methodologies, to determine the segment LOS and V/C ratio. The LOS and V/C ratios were calculated based on roadway characteristics such as highway class, lane and shoulder widths, and terrain, as well as the seasonally adjusted PM peak hour volumes and heavy vehicle percentages. As shown in Table 18, all four of the roadway segments that were analyzed operate at LOS C or better. The two-lane highway capacity analysis results are available in Attachment C, McTrans Highway Capacity Software Reports.

Table 18. Year 2023 Existing Traffic Operations – Two-Lane Highway Capacity Analysis

		Northbound			Southbound		
ID	Segment	PM Peak Hour Volume	V/C Ratio	LOS	PM Peak Hour Volume	V/C Ratio	LOS
A	SW George Millican Road south of Tom McCall Road	65	0.05	A	75	0.06	A
B	SW Powell Butte Highway north of SW Bussett Road	365	0.24	B	260	0.17	B
C	S Powell Butte Highway north of Alfalfa Road	305	0.20	B	200	0.13	A
D	SE Juniper Canyon Road south of SE Paulina Highway	235	0.16	B	415	0.25	C

LOS = level of service; V/C = volume to capacity

5.4 Active Transportation Analysis and Multimodal Opportunity

During development of the 2017 TSP, Strava data were reviewed. Strava is a website and mobile application that allows bicyclists and other active modes to track their activities and routes. The data reviewed as part of the plan showed higher levels of use on select routes throughout the county, primarily in the vicinity of Prineville and Powell Butte. Figure 17 displays these data

Since the 2017 TSP Update, ODOT has evaluated level of traffic stress (LTS) along ODOT roadways in Crook County. LTS is a framework that describes the relative comfort and safety of traveling along a route based on roadway characteristics, traffic characteristics, and bicycle or pedestrian facility characteristics. ODOT further specifies evaluation criteria for a rural context where speed limits are typically higher, travel patterns require longer distances between destinations, and people biking are expected to have higher levels of tolerance for stress. Using a four-point scale, LTS classifies routes as low-stress (LTS 1 or 2) and high-stress (LTS 3 or 4).

The results of the ODOT analysis are shown in Figure 18. Roadways in the vicinity of Prineville and connecting to Deschutes County are typically higher stress, where some roadways in eastern areas of the county are lower stress (LTS 2). Significant portions of US 26 traveling east from Prineville to the eastern extent of the county are higher stress (LTS 3). Higher posted travel speeds and narrow or no shoulders in many locations result in higher stress routes of travel.

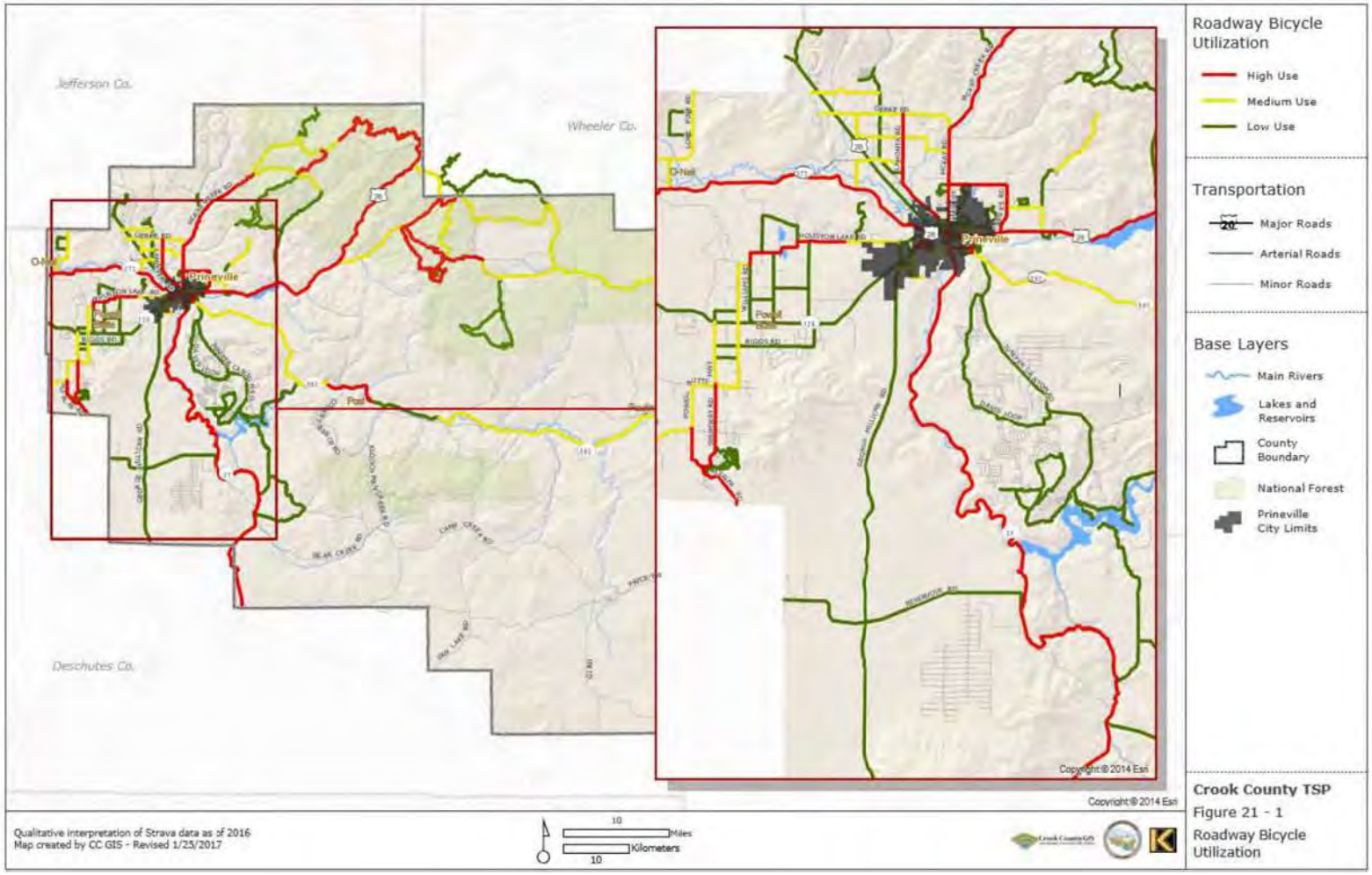


Figure 17. Roadway Bicycle Utilization (2017 TSP)

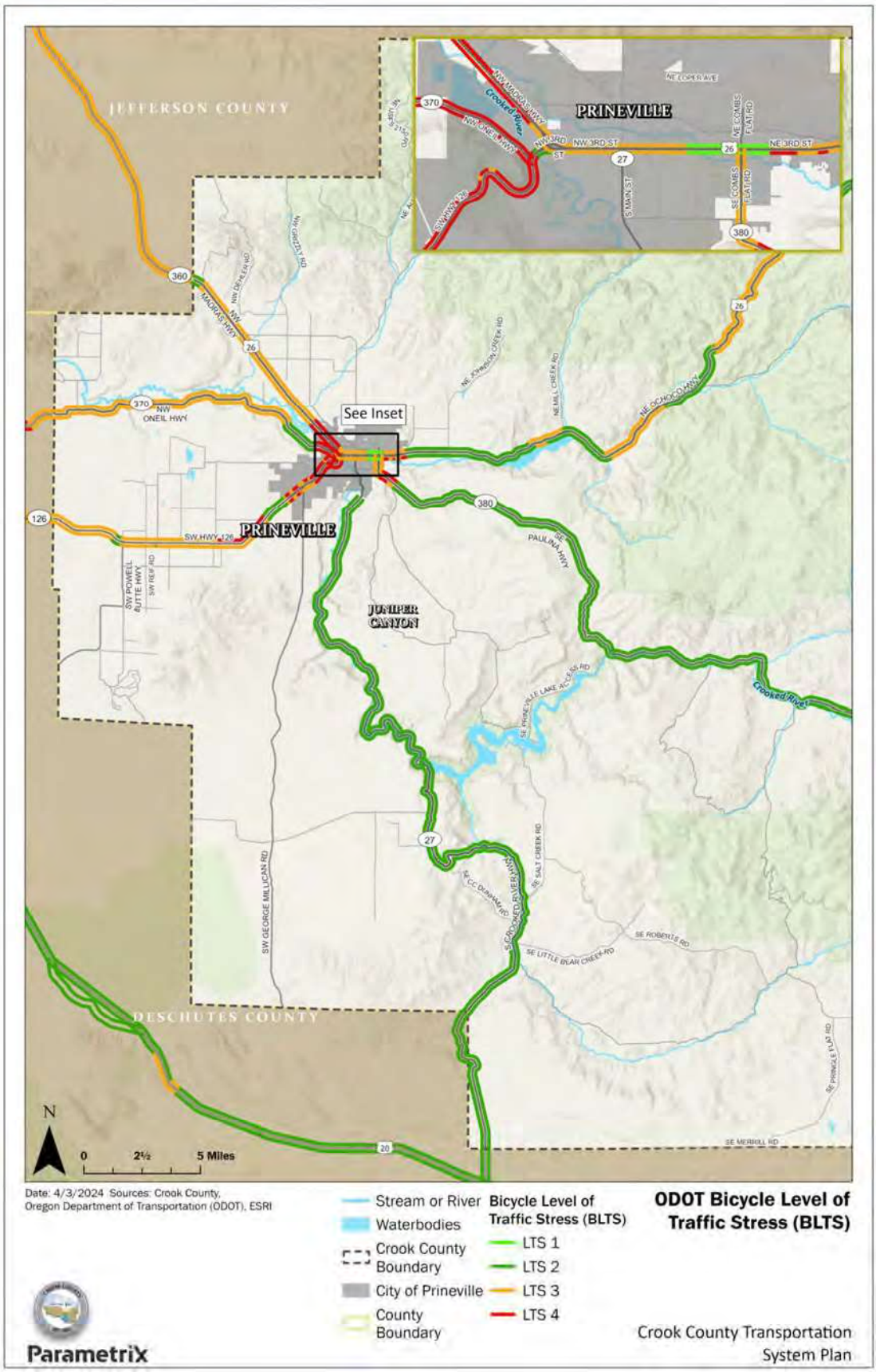


Figure 18. ODOT Bicycle Level of Traffic Stress

6. Safety Analysis

6.1 Countywide Crash Summary

Roadway safety trends were evaluated using ODOT crash data for the most recent 5-year period (2017 to 2021). The data represent reported crashes within unincorporated Crook County; crashes occurring within the city of Prineville and its UGB were not included in the analysis.

During this time, 732 crashes occurred involving people driving, walking, and cycling within Crook County. Over 9% of crashes resulted in a death or serious injury; 13 crashes were fatal, while 56 resulted in a serious injury. Fatal crashes resulted in 17 deaths, including 3 crashes that involved multiple people. Property-damage-only crashes comprised 38.7% of all crashes.

Less than 1% of all crashes involved a pedestrian or a bicyclist. A total of 2 crashes involved a pedestrian, including one fatality. The other pedestrian-involved crash involved three pedestrians and resulted in suspected serious injuries. There was only one bicycle-involved crash during this time period, which resulted in a suspected serious injury.

Figure 19 displays crashes in Crook County from 2017 through 2021

A summary of fatal crashes is provided below:

- A fatal pedestrian crash occurred on Millican Road near Reservoir Road along a straight roadway. This crash occurred at night with no street lighting present. The crash report indicated that it was snowing and the roadway was icy. The crash cause was reported as inattention.
- Nine fatal crashes involved only one vehicle and involved hitting a fixed object. Of these nine crashes, four occurred at night with no street lighting present, two occurred at dusk, and the three remaining crashes occurred during daylight. Four crashes involved a cut slope or ditch embankment, two involved a fence, and one involved a tree, stump, or shrubs. Crash causes included traveling too fast for conditions (four crashes), physical illness (one crash), other improper driving (two crashes), inattention (one crash), and driving in excess of the posted speed (one crash).
- One fatal crash occurred at the intersection of U.S. 26 / NW Woodward Rd and involved a turning movement. The crash occurred at night with no street lighting present; a stop sign was present at the intersection. The crash cause included passing the stop sign and driving in excess of the posted speed.
- One fatal crash occurred along Juniper Canyon Road and was described as a head-on crash. This crash occurred at night with no street lighting present and was a result of driving left of center on a two-way road. The crash report noted that an occupant fell, jumped, or was ejected from the moving vehicle.
- One fatal crash occurred along Millican Road and was described as a sideswipe crash. The crash occurred at night with no street lighting present and was a result of driving left of center on a two-way road. The crash report noted that the crash involved a fire or explosion.

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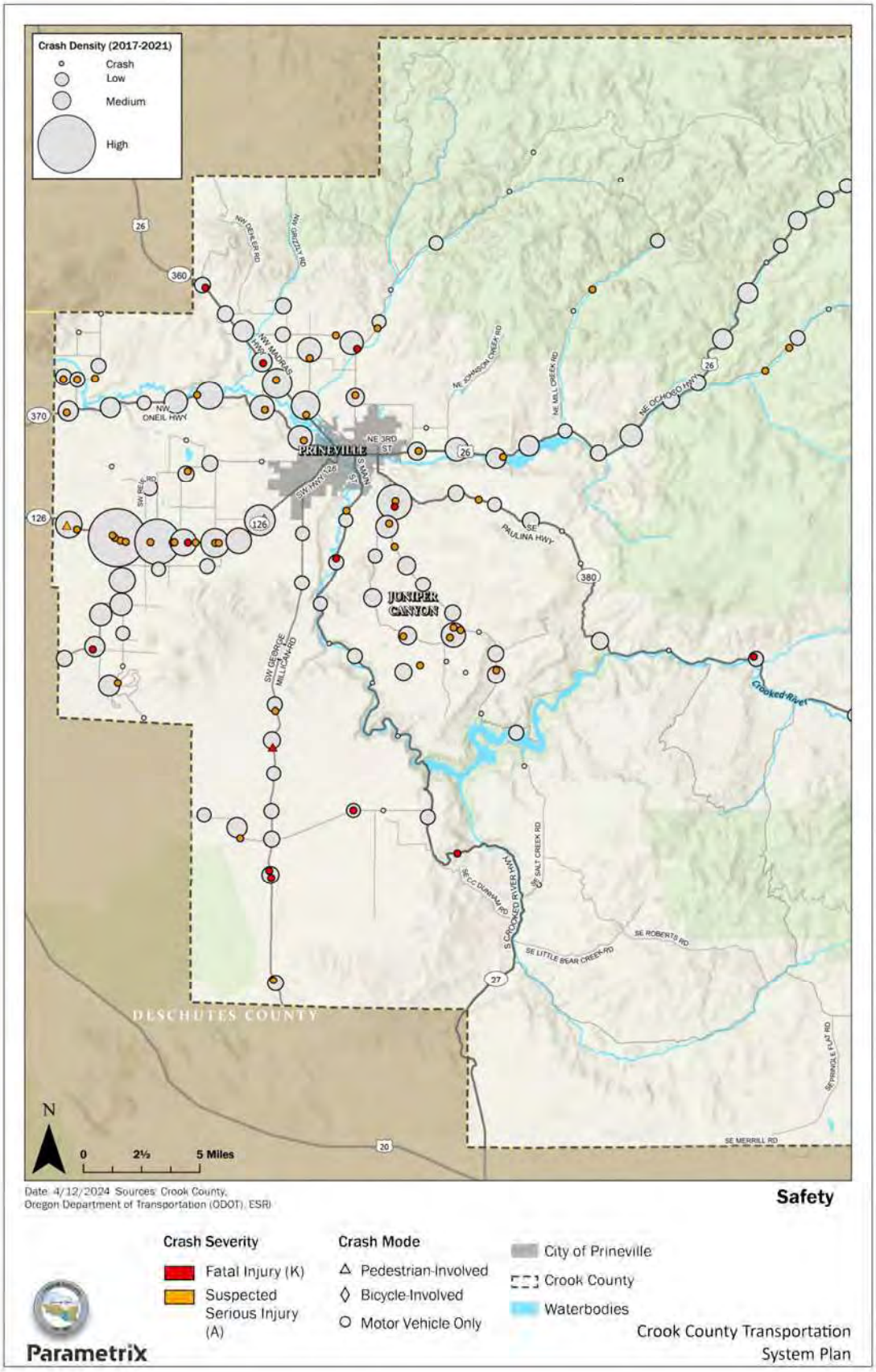


Figure 19. Crashes

In terms of location, fatal and serious injury crashes occurred most frequently in the western portion of the county, generally clustered near OR 126, Juniper Canyon Road, and north of Prineville. Over 47% of the crashes occurred at straight roadways, 11% occurred at intersections, and 27% occurred at horizontal curves. Table 19 shows the summary of countywide crash patterns.

Table 19. Crash Summary

Category	Factors	Number of Crashes	Percentage of Total Crashes
Crash Severity	Fatal Injury (K)	13	1.8%
	Suspected Serious Injury (A)	54	7.4%
	Suspected Minor Injury Crash (B)	206	28.1%
	Possible Injury Crash (C)	176	24%
	No Apparent Injury/ Property-Damage-Only Crash (O)	283	38.7%
Collison Type	Angle	17	2.3%
	Backing	1	<1%
	Fixed Object	296	40.4%
	Head-On	18	2.5%
	Miscellaneous	122	16.7%
	Non-Collision	97	13.3%
	Parking Maneuver	1	<1%
	Pedestrian	1	<1%
	Rear-End	83	11.3%
	Sideswipe	38	5.2%
	Turning Movement	58	7.9%
Crash Location	Bridge Structure	1	<1%
	Curve (Horizontal Curve)	202	27.6%
	Driveway or Alley	19	2.6%
	Grade (Vertical Curve)	73	10.0%
	Intersection	83	11.3%
	Straight Roadway	349	47.7%
	Unknown	5	<1%
Top Five Contributing Factors	Too Fast For Conditions (Not Exceed Posted Speed)	161	22.0%
	Inattention	80	10.9%
	Other (Not Improper Driving)	116	15.8%
	Driving in Excess of Posted Speed	50	6.8%
	Other (Improper Driving)	79	10.8%

6.1.1 Safety Priority Index System Sites

The ODOT SPIS is a systemic analysis approach that identifies potential safety problems on state highways based on crash frequency and severity. Typically one-tenth of a mile long, sites on the list

have experienced three or more crashes or one or more fatal crashes in a 3-year period. This analysis helps ODOT identify areas for further investigation. Categorized by percentile, ODOT reviews sites in the top 5% of SPIS sites each year to understand potential safety problems and solutions.

Crook County has five locations that qualified as a 90th percentile SPIS site between 2017 and 2021:

- NE Mill Creek Road at MP 27.85
- SE Juniper Canyon Road at MP 10.84
- OR 380 at MP 23.02
- Crooked River Highway at MP 25.98
- SE Beaver Creek Road at MP 54.24

6.2 Intersection Crash Analysis

A total of 10 intersections from Crook County were analyzed. Four-hour turning movement volume data were collected for the study intersections. ADT was estimated based on the collected turning movement volumes by using a peak season factor and adjustment factors derived from the ratio of AADT to 4-hour counts from the ODOT MS2 portal for the nearby roadways. The peak season factor of 1.04 was used for this study, and 4-hour counts represent approximately 30% of the AADT. The AADT calculations of the intersections are presented in Table 20.

Table 20. Intersection Count Data

ID	Intersection	4-hour Count	Seasonal Factor	AADT
8	S Powell Butte Highway & SW Bussett Road	1,844	1.04	6,393
9	S Powell Butte Highway & Alfalfa Road	2,140	1.04	7,419
4	SW Powell Butte Hwy& Ochoco Highway/OR 126	5,846	1.04	20,266
5	SW Williams Road & Ochoco Highway/OR 126	5,219	1.04	18,093
6	SW Parrish Lane & Ochoco Highway/OR 126	4,619	1.04	16,013
7	Stillman Road & Ochoco Highway/OR 126	4,796	1.04	16,626
3	US 26 & NW Gumpert Road	1,263	1.04	4,378
10	SE Juniper Canyon Road & SE Paulina Highway/OR 380	2,645	1.04	9,169
2	Rimrock Acres Loop & O'Neil Highway	816	1.04	2,829
1	NW Elliot Lane & O'Neil Highway	970	1.04	3,363

All counts were conducted on September 28, 2023.
AADT = average annual daily traffic

Crash history data from 2017 through 2021 were used to determine intersection crash rates. A total of 62 crashes occurred at the 10 intersections analyzed. The intersections were analyzed for crash rate, critical rate, and excess proportion of specific crash types. The reference population Rural 4ST (four-leg, stop-controlled intersections) does not have a sample size of at least five samples, so critical crash rates could not be calculated. Instead, the 90th percentile crash rate for the reference population was used for comparison. For reference population Rural 3ST (three-leg, stop-controlled intersections), the critical crash rate was calculated as it has more than five samples.

Table 21 shows the summary of the intersection crash rate calculation. The intersection of SW Powell Butte Highway and SW Bussett Road exceeds the critical crash rate, and the intersection of Rimrock Acres Loop and NW O'Neil Highway has a crash rate near the critical rate. The remaining eight intersections have crash rates lower than the critical crash rate (or 90th percentile crash rate). Thus, these two intersections were flagged by the critical crash rate analysis.

Excess proportion by specific crash type for these 10 intersections was also analyzed. Table 22 shows the number of crashes, as well as the observed proportion in parentheses, by types for all intersections. It shows that none of the intersections have an excess proportion with a probability greater than 0.90. Therefore, none of the intersections are flagged by excess proportion of crash type analysis.

Table 21. Intersection Crash Rate Calculation

ID	Intersection	AADT Entering Intersection	5-year MEV	Crash Total	Intersection Population Type	Intersection Crash Rate	Reference Population Crash Rate	Critical Rate	90th Percentile Crash Rate	Over Critical
8	SW Powell Butte Highway & SW Bussett Road	6,393	11.7	8	Rural 3ST	0.69	0.22	0.49	-	Over
9	S Powell Butte Highway & Alfalfa Road	7,419	13.5	1	Rural 3ST	0.07	0.22	0.46	-	Under
4	SW Powell Butte Highway & Ochoco Highway/OR 126	20,266	37.0	20	Rural 4ST	0.54	APM Exhibit 4-1	-	1.08	Under
5	SW Williams Road & Ochoco Highway/OR 126	18,093	33.0	15	Rural 4ST	0.45	APM Exhibit 4-1	-	1.08	Under
6	SW Parrish Lane & Ochoco Highway/OR 126	16,013	29.2	5	Rural 3ST	0.17	0.22	0.38	-	Under
7	Stillman Road & Ochoco Highway/OR 126	16,626	30.3	3	Rural 3ST	0.10	0.22	0.37	-	Under
3	US 26 & NW Gumpert Road	4,378	8.0	1	Rural 3ST	0.13	0.22	0.55	-	Under
10	SE Juniper Canyon Road & SE Paulina Highway/OR 380	9,169	16.7	4	Rural 3ST	0.24	0.22	0.44	-	Under
2	Rimrock Acres Loop & NW O'Neil Highway	2,829	5.2	3	Rural 3ST	0.58	0.22	0.65	-	Under
1	NW Elliot Lane & NW O'Neil Highway	3,363	6.1	2	Rural 4ST	0.33	APM Exhibit 4-1	-	1.08	Under

AADT = average annual daily traffic; APM = Analysis Procedures Manual; MEV = million entering vehicles

Table 22. Excess Proportion Calculation for Intersection

ID	Intersection	Angle	Backing	Bike	Fixed Object	Head-On	Non-Collison	Other	Parked Vehicle	Pedestrian	Sideswipe Same Dir.	Sideswipe Opp. Dir.	Turning	Rear-End
8	SW Powell Butte Highway & SW Bussett Road	3 (0.38)	-	-	2 (0.25)	e	1 (0.00)	-	-	-	1 (0.00)	1 (0.00)	-	-
9	S Powell Butte Highway & Alfalfa Road	-	-	-	1 (0.00)	-	-	-	-	-	-	-	-	-
4	SW Powell Butte Highway & Ochoco Highway/OR 126	-	-	-	-	1 (0.00)	-	-	-	-	-	-	9 (0.45)	1 (0.00)
5	SW Williams Road & Ochoco Highway/OR 126	-	-	-	3 (0.20)	-	-	-	-	-	-	-	3 (0.20)	9 (0.50)
6	SW Parrish Lane & Ochoco Highway/OR 126	-	-	-	1 (0.00)	-	-	-	-	-	-	-	-	4 (0.60)
7	Stillman Road & Ochoco Highway/OR 126	-	-	-	1 (0.00)	-	-	1 (0.00)	-	-	-	-	-	1 (0.80)
3	US 26 & NW Gumpert Road	-	-	-	-	-	-	1 (0.00)	-	-	-	-	-	-
10	SE Juniper Canyon Road & SE Paulina Highway/OR 380	-	-	-	2 (0.50)	-	1 (0.00)	-	-	-	-	-	1 (0.00)	-
2	Rimrock Acres Loop & NW O'Neil Highway	-	-	-	1 (0.00)	1 (0.00)	1 (0.00)	-	-	-	-	-	-	-
1	NW Elliot Lane & NW O'Neil Highway	-	-	-	-	-	1 (0.00)	-	-	-	-	-	1 (0.00)	-

Numbers in parentheses are the observed proportion.

dir. = direction; opp. = opposite

6.3 Segment Crash Analysis

The same crash history data from 2017 through 2021 were used to analyze segment crashes. There are five highways or corridors that were analyzed in the safety analysis:

- OR 126 (Prineville city limits to Deschutes County)
- Powell Butte Highway (OR 126 to Deschutes County)
- US 26 (Jefferson County to city of Prineville)
- OR 370 (Deschutes County to city of Prineville)
- OR 380 (city of Prineville to Paulina)

Each of the corridors was divided into segments, consistent with guidance provided in the APM. Corridor breaks considered intersection-related crash locations, public road intersections, and area character. As the sample sizes for reference population (i.e., principal arterial, minor arterial and major collector) were less than five, the critical rate could not be calculated. The average crash rate for each reference population was calculated as shown in Table 23.

Table 23. Reference Population Type Crash Rates

Segment Reference Population Type	Population Type Number	Segments in Reference Population	Sum of Crashes	Sum of MVMT	Avg Crash Rate for Reference Population
Minor Arterial	1	13	167	176.3	0.95
Principal Arterial	2	7	187	370.5	0.50
Major Collector	3	10	69	63.9	1.08

MVMT = million vehicle miles traveled

Based on the reference population crash rate, a critical crash rate for each segment was calculated. The crash rate for each segment was compared to the critical rate to find out which segments had a crash rate higher than the critical rate. Table 24 shows the critical rate calculation for all the segments. The following four segments have a crash rate over the critical rate:

- OR 126 east of Powell Butte Highway
- OR 370 west of Lone Pine Road
- OR 370 east of Happy Hollow Drive
- OR 380 south of NE 3rd Street

Table 24. Critical Rate Calculation for Segments

Segment	Ref. Pop. Type	Segment Description Milepoint	5 Year Crash Total	AADT	Segment Length (miles)	Pop. Type Number	MVMT	Segment Crash Rate	Ref. Pop. Crash Rate	Critical Rate	Over Critical
1	Minor Arterial	Powell Butte Hwy west of Alfalfa Rd	9	4,614	1.94	1	16.36	0.55	0.95	1.37	Under
2	Minor Arterial	Powell Butte Hwy west of Shumway Rd	14	4,614	2.70	1	22.71	0.62	0.95	1.31	Under
3	Minor Arterial	Powell Butte Hwy south of OR 126	30	4,614	2.77	1	23.31	1.29	0.95	1.30	Under
4	Principal Arterial	OR 126 west of Cavalry Way	8	11,377	0.78	2	16.26	0.49	0.50	0.83	Under
5	Principal Arterial	OR 126 west of Powell Butte Hwy	19	16,027	2.20	2	64.37	0.30	0.50	0.66	Under
6	Principal Arterial	OR 126 east of Powell Butte Hwy	53	13,876	2.27	2	57.49	0.92	0.50	0.67	Over
7	Principal Arterial	OR 126 west of SW Parrish Ln	28	12,150	1.99	2	44.14	0.63	0.50	0.69	Under
8	Principal Arterial	OR 126 east of SW Parrish Ln	17	12,150	1.65	2	36.64	0.46	0.50	0.71	Under
9	Principal Arterial	OR 126 east of Springs Ranch Rd	15	15,175	2.35	2	64.99	0.23	0.50	0.66	Under
10	Principal Arterial	OR 126 west of OR 370	47	15,175	3.13	2	86.58	0.54	0.50	0.64	Under
11	Minor Arterial	OR 370 west of Lone Pine Rd	8	1,738	1.12	1	3.57	2.24	0.95	1.94	Over
12	Minor Arterial	OR 370 east of Lone Pine Rd	7	2,001	3.99	1	14.57	0.48	0.95	1.40	Under
13	Minor Arterial	OR 370 west of NW Elliott Rd	22	2,001	4.68	1	17.09	1.29	0.95	1.36	Under
14	Minor Arterial	OR 370 east of NW Elliott Rd	9	1,506	2.05	1	5.64	1.60	0.95	1.71	Under
15	Minor Arterial	OR 370 east of Happy Hollow Dr	8	2,006	1.12	1	4.11	1.95	0.95	1.86	Over
16	Minor Arterial	OR 370 west of OR 126	1	2,310	0.87	1	3.67	0.27	0.95	1.92	Under
17	Minor Arterial	US 26 west of NW Gerke Rd	9	2,587	3.19	1	15.05	0.60	0.95	1.39	Under
18	Minor Arterial	US 26 west of NW Elliott Ln	14	2,944	2.51	1	13.49	1.04	0.95	1.42	Under
19	Minor Arterial	US 26 west of Ochoco Creek	21	3,574	2.41	1	15.70	1.34	0.95	1.38	Under
20	Minor Arterial	US 26 east of Ochoco Creek	15	5,792	1.99	1	21.04	0.71	0.95	1.32	Under
21	Major Collector	OR 380 south of NE 3rd St	40	7,512	1.34	3	18.33	2.18	1.08	1.51	Over
22	Major Collector	OR 380 east of Juniper Canyon Rd	8	863	5.67	3	8.93	0.90	1.08	1.71	Under
23	Major Collector	OR 380 north of Burma Rd	7	863	5.33	3	8.40	0.83	1.08	1.73	Under
24	Major Collector	OR 380 south of Burma Rd	2	863	4.11	3	6.48	0.31	1.08	1.83	Under
25	Major Collector	OR 380 west of Conant Basin Rd	1	863	4.28	3	6.74	0.15	1.08	1.81	Under
26	Major Collector	OR 380 east of Conant Basin Rd	2	863	5.31	3	8.36	0.24	1.08	1.73	Under
27	Major Collector	OR 380 west of Drake Creek Rd	2	125	6.93	3	1.58	1.27	1.08	2.76	Under
28	Major Collector	OR 380 east of Drake Creek Rd	2	125	5.73	3	1.31	1.53	1.08	2.96	Under
29	Major Collector	OR 380 west of Valley Rd	1	125	5.18	3	1.18	0.85	1.08	3.08	Under
30	Major Collector	OR 380 east of Valley Rd	4	125	11.29	3	2.57	1.55	1.08	2.34	Under

The crash rate was also compared with the statewide crash rate for that specific highway classification. Table 25 shows the comparison of crash rates for this segment with the statewide

crash rate. Ten segments have crash rates over the statewide crash rate; four of those were already identified by the critical rate method. Six additional segments exceed the statewide crash rate:

- Powell Butte Highway south of OR 126
- OR 370 west of NW Elliott Road
- OR 370 east of NW Elliott Road
- US 26 west of Ochoco Creek
- OR 380 east of Drake Creek Road
- OR 380 east of Valley Road

Table 25. Segment Comparison with Statewide Crash Rate

Segment No	Segment Description	Length of Segment (miles)	Number of Crashes	AADT	Crash Rate	Highway Classification	Statewide Crash Rate	Exceeding Statewide Crash Rate
1	Powell Butte Hwy west of Alfalfa Rd	1.94	9	4,614	0.550	Minor Arterial	1.13	No
2	Powell Butte Hwy west of Shumway Rd	2.70	14	4,614	0.616	Minor Arterial	1.13	No
3	Powell Butte Hwy south of OR 126	2.77	30	4,614	1.287	Minor Arterial	1.13	Yes
4	OR 126 west of Cavalry Way	0.78	8	11,377	0.492	Principal Arterial	0.83	No
5	OR 126 west of Powell Butte Hwy	2.20	19	16,027	0.295	Principal Arterial	0.83	No
6	OR 126 east of Powell Butte Hwy	2.27	53	13,876	0.922	Principal Arterial	0.83	Yes
7	OR 126 west of SW Parrish Ln	1.99	28	12,150	0.634	Principal Arterial	0.83	No
8	OR 126 east of SW Parrish Ln	1.65	17	12,150	0.464	Principal Arterial	0.83	No
9	OR 126 east of Springs Ranch Rd	2.35	15	15,175	0.231	Principal Arterial	0.83	No
10	OR 126 west of OR 370	3.13	47	15,175	0.543	Principal	0.83	No
11	OR 370 west of Lone Pine Rd	1.12	8	1,738	2.243	Minor Arterial	1.13	Yes
12	OR 370 east of Lone Pine Rd	3.99	7	2,001	0.480	Minor Arterial	1.13	No
13	OR 370 west of NW Elliott Rd	4.68	22	2,001	1.288	Minor Arterial	1.13	Yes
14	OR 370 east of NW Elliott Rd	2.05	9	1,506	1.595	Minor Arterial	1.13	Yes
15	OR 370 east of Happy Hollow Dr	1.12	8	2,006	1.948	Minor Arterial	1.13	Yes
16	OR 370 west of OR 126	0.87	1	2,310	0.273	Minor	1.13	No
17	US 26 west of NW Gerke Rd	3.19	9	2,587	0.598	Minor Arterial	1.13	No
18	US 26 west of NW Elliott Ln	2.51	14	2,944	1.038	Minor Arterial	1.13	No
19	US 26 west of Ochoco Creek	2.41	21	3,574	1.338	Minor Arterial	1.13	Yes
20	US 26 east of Ochoco Creek	1.99	15	5,792	0.713	Minor Arterial	1.13	No
21	OR 380 south of NE 3rd St	1.34	40	7,512	2.183	Major Collector	1.27	Yes
22	OR 380 east of Juniper Canyon Rd	5.67	8	863	0.895	Major Collector	1.27	No
23	OR 380 north of Burma Rd	5.33	7	863	0.833	Major Collector	1.27	No
24	OR 380 south of Burma Rd	4.11	2	863	0.309	Major Collector	1.27	No
25	OR 380 west of Conant Basin Rd	4.28	1	863	0.148	Major Collector	1.27	No
26	OR 380 east of Conant Basin Rd	5.31	2	863	0.239	Major Collector	1.27	No
27	OR 380 west of Drake Creek Rd	6.93	2	125	1.265	Major Collector	1.27	No
28	OR 380 east of Drake Creek Rd	5.73	2	125	1.529	Major Collector	1.27	Yes
29	OR 380 west of Valley Rd	5.18	1	125	0.845	Major Collector	1.27	No
30	OR 380 east of Valley Rd	11.29	4	125	1.554	Major Collector	1.27	Yes

7. Future Systems Conditions

7.1 Future Transportation Volume Development

Future traffic forecasts for the horizon year 2045 were developed using a linear growth factor for all movements. Growth rates were calculated based on the ODOT Future Highway Volume Table, which is based on historical traffic volumes. Volume data for 2021 and 2042 were available near three of the six study intersections (that were used for the operations analysis); the data were used to calculate overall growth rates for the study area, as summarized in Table 26. Intersection 10 is located near Juniper Canyon, which has experienced significant growth in recent years, so a different growth rate was used for intersection 10 than for the other five study intersections.

Table 26. Total Growth Rates from Year 2023 to 2045

		ODOT Highway Volume		Total Growth Rate
ID	Intersection	2021	2042	2023 to 2045
4	SW Powell Butte Highway & Ochoco Highway/OR 126	10,600	13,800	31.6%
5	SW Williams Road & Ochoco Highway/OR 126	12,600	16,100	29.1%
	Average Growth Rate (Intersections 4–9)			**30.4%**
10	SE Juniper Canyon Road & SE Paulina Highway/OR 380	8,100	13,100	64.7%
	Average Growth Rate (Intersection 10)			**64.7%**

ODOT = Oregon Department of Transportation

7.1.1 2045 No Build Scenario

The overall growth rates of 30.4% and 64.7% were applied to the 2023 30 HV intersection volumes to represent the expected background growth in the study area. Additionally, there are a few planned developments in the Powell Butte area that are expected to generate additional trips. The following developments and expected PM peak hour trips were included in the volume forecasting:

1. Remington Ranch Resort (Full Health): 183 PM peak hour trips that were distributed through intersections 4, 5, 6, 8, and 9.
2. Hidden Canyon Destination Resort (RMG Development): 845 PM peak hour trips that were distributed through intersections 4, 8, and 9.

These additional development trips were added to the Year 2045 baseline traffic volumes to develop Year 2045 Future No Build peak hour intersection volumes, which are shown in Figure 20.

7.1.2 2045 No Build – Juniper Canyon Growth Scenario

An additional scenario was also evaluated to represent even higher growth in the Juniper Canyon area due to additional housing development. Based on recent development data, Crook County expects approximately 69 new dwelling units per year in the Juniper Canyon area out to year 2045. Since a traffic analysis has not yet been completed, trip generation was estimated using the Institute of Transportation Engineers *Trip Generation Manual, 11th Edition* (ITE 2021) for the expected 69 new dwellings per year. In lieu of applying a background growth rate of 64.7% to intersection 10, which would add an additional 470 trips in the PM peak hour, 1,427 PM peak hour trips were added

and distributed through the roadway network based on existing travel patterns for this scenario. The purpose of this scenario is to understand the potential impacts to operations from continued high growth in the Juniper Canyon area.

These additional development trips were added to the Year 2045 baseline traffic volumes (background growth applied to Intersections 4 through 9 only) to develop Year 2045 Future No Build (Juniper Canyon Higher Growth) peak hour intersection volumes, which are shown in Figure 21. These additional development trips were distributed through all six study intersections.

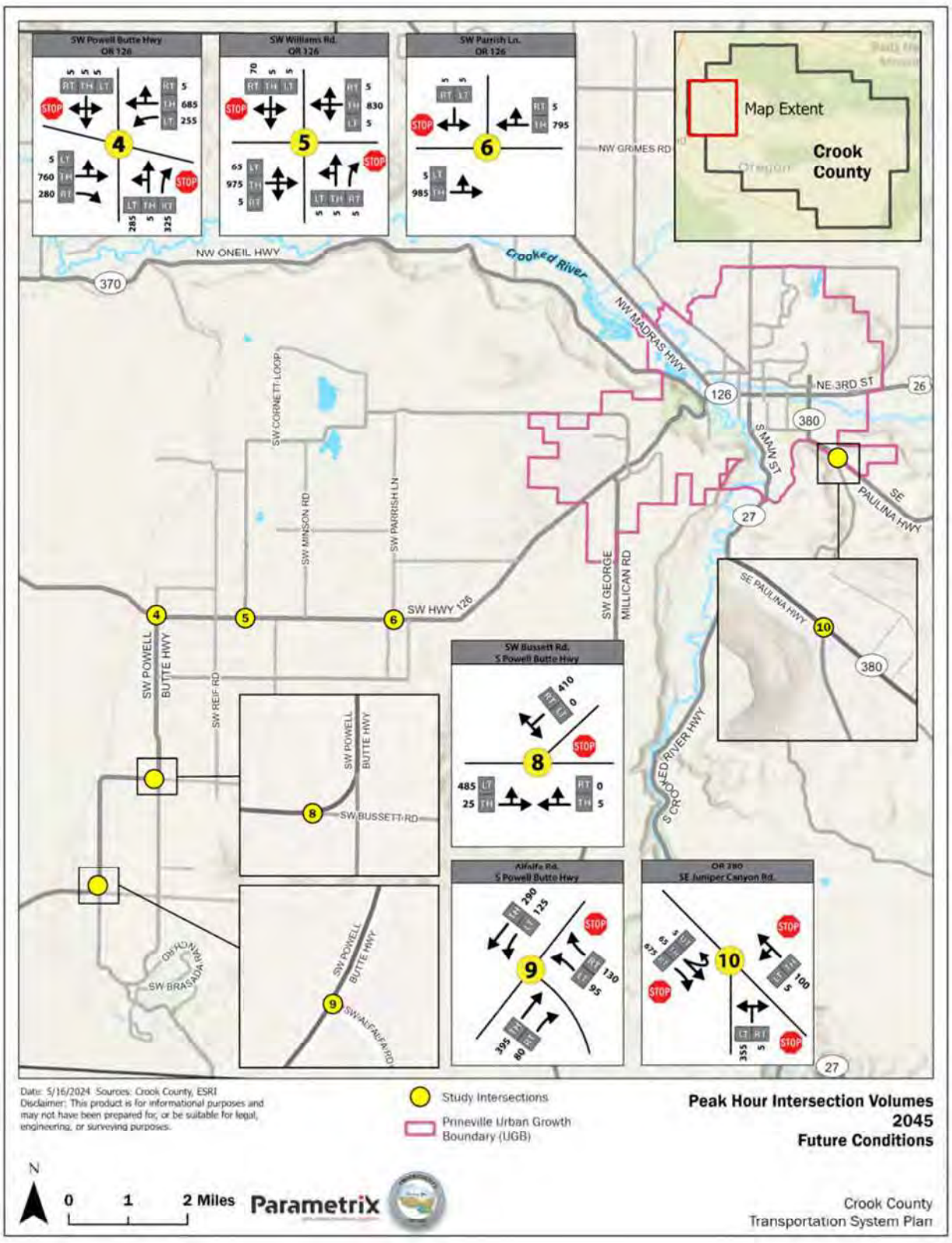


Figure 20. Peak Hour Intersection Volumes: 2045 Future Conditions

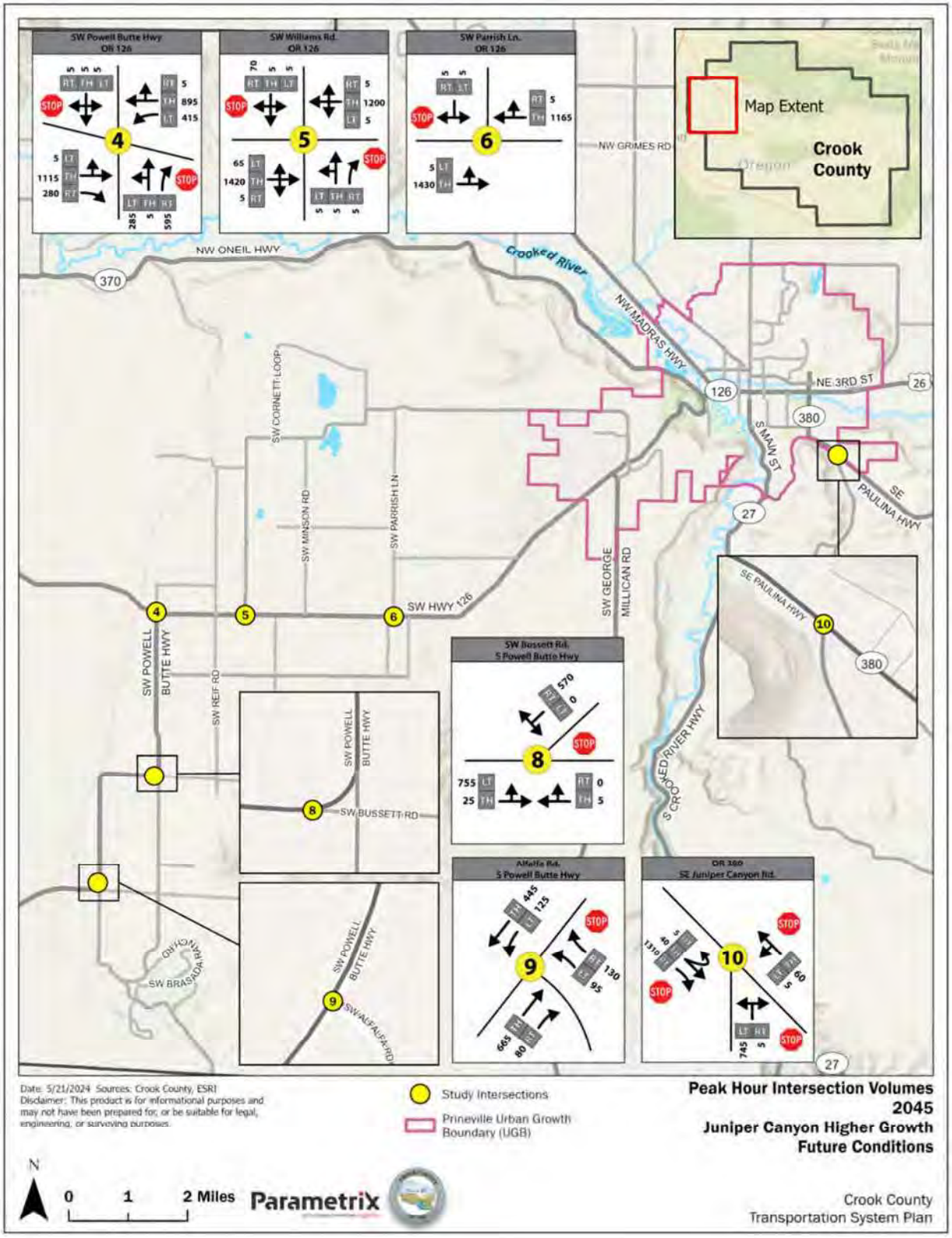

SW Powell Butte Hwy OR 126
SW Williams Rd. OR 126
SW Parrish Ln. OR 126
Map Extent
Crook County
NW GRIMES RD
NW ONEIL HWY
Crooked River
NW MADRAS HWY
370
126
NE 3RD ST
26
380
S MAIN ST
SE PAULINA HWY
27
SW CORNETT LOOP
SW MINSON RD
SW PARRISH LN
SW HWY 126
SW GEORGE
MILLICAN RD
SW POWELL BUTTE HWY
SW REIF RD
SW BUSSETT RD
SW Bussett Rd. S Powell Butte Hwy
S CROOKED RIVER HWY
Alfalfa Rd. S Powell Butte Hwy
OR 380 SE Juniper Canyon Rd.
SW BRASADA RANCH RD
SW ALFALFA RD
Date: 5/21/2024 Sources: Crook County, ESRI
Disclaimer: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes.
Study Intersections
Prineville Urban Growth Boundary (UGB)
Peak Hour Intersection Volumes
2045
Juniper Canyon Higher Growth
Future Conditions
N
0 1 2 Miles
Parametrix
Crook County
Transportation System Plan

Figure 21. Peak Hour Intersection Volumes: 2045 Future Conditions (Juniper Canyon Higher Growth)

7.2 Future No Build Scenario

7.2.1 Intersection Operation Analysis

Similar to Year 2023 Existing Conditions, traffic operations for the Year 2045 Future No Build scenarios were analyzed using Synchro. V/C ratios, delay, and LOS were reported and compared to the same mobility targets as Year 2023 Existing Conditions. Traffic reports are available in Attachment B, Synchro Reports. V/C ratios, delay, and LOS for the Year 2045 Future No Build scenario are summarized in Table 27. Two of the six study intersections are expected to operate with a V/C ratio that exceeds the mobility target.

Table 27. Year 2045 No Build Traffic Operations – V/C Ratio, Delay, and LOS

		Mainline				Side Street			
ID	Intersection	V/C ratio	Delay (sec)	LOS	Exceeds Mobility?	V/C ratio	Delay (sec)	LOS	Exceeds Mobility?
4	SW Powell Butte Highway & Ochoco Highway/OR 126	0.45	14	B	No	10.36	> 600	F	Yes
5	SW Williams Road & Ochoco Highway/OR 126	0.65	10	B	No	0.42	131	F	No
6	SW Parrish Lane & Ochoco Highway/OR 126	0.59	9	A	No	0.07	32	D	No
8	S Powell Butte Highway & SW Bussett Road	0.00	0	A	No	0.02	17	C	No
9	S Powell Butte Highway & Alfalfa Road	0.11	9	A	No	0.36	26	D	No
10	SE Juniper Canyon Road & SE Paulina Highway/OR 380	0.97	51	F	Yes	0.62	19	C	No

V/C ratios, delay, and LOS for the 2045 Future No Build (Juniper Canyon Higher Growth) are summarized in Table 28. Five of the six study intersections are expected to operate with a V/C ratio or LOS that exceeds the mobility target. While intersection 4 appears to have a lower side street v/c ratio under the 2045 Future No Build (Juniper Canyon Higher Growth) scenario than the Year 2045 Future No Build scenario, this is due to the high volume to capacity in the northbound left-turn lane which results in an error in the traffic modeling.

Table 28. Year 2045 No Build (Juniper Canyon Higher Growth) Traffic Operations – V/C Ratio, Delay, and LOS

		Mainline				Side Street			
ID	Intersection	V/C ratio	Delay (sec)	LOS	Exceeds Mobility?	V/C ratio	Delay (sec)	LOS	Exceeds Mobility?
4	SW Powell Butte Highway & Ochoco Highway/OR 126	0.84	40	E	Yes	2.40*	> 600	F	Yes
5	SW Williams Road & Ochoco Highway/OR 126	0.95	13	B	Yes	2.11	> 600	F	Yes

ID	Intersection	Mainline				Side Street			
		V/C ratio	Delay (sec)	LOS	Exceeds Mobility?	V/C ratio	Delay (sec)	LOS	Exceeds Mobility?
6	SW Parrish Lane & Ochoco Highway/OR 126	0.85	11	B	Yes	0.21	101	F	No
8	S Powell Butte Highway & SW Bussett Road	0.00	0	A	No	0.03	27	D	No
9	S Powell Butte Highway & Alfalfa Road	0.14	10	A	No	0.67	72	F	Yes
10	SE Juniper Canyon Road & SE Paulina Highway/OR 380	2.27	534	F	Yes	1.67	163	F	Yes

LOS = level of service; sec = seconds; V/C = volume to capacity

* The volume along the northbound approach exceeds the capacity, resulting in an error for the northbound left-turn lane. The 2.40 v/c ratio is for the northbound right-turn lane.

The 95th percentile queue lengths were analyzed using Synchro and are summarized in Table 29 and Table 30. Traffic reports are available in Attachment B, Synchro Reports. For the Year 2045 Future No Build scenario, the queue length in the northbound direction of SW Powell Butte Highway and Ochoco Highway/OR 126 (Intersection 4) is expected to exceed the space between intersections. For the 2045 Future No Build (Juniper Canyon Higher Growth), the queue lengths in the northbound and southbound directions of SW Powell Butte Highway and Ochoco Highway/OR 126 (Intersection 4) are expected to exceed the space between intersections.

Table 29. Year 2045 No Build Traffic Operations – Queueing

ID	Intersection and Approach	95th Percentile Queue Length (feet)	Storage Length or Space Between Intersections (feet)
4	SW Powell Butte Highway & Ochoco Highway/OR 126		
	Eastbound approach	0	> 1,000
	Westbound approach	50	> 1,000
	Northbound approach	> 1,000	> 1,000
	Southbound approach	75	> 1,000
5	SW Williams Road & Ochoco Highway/OR 126		
	Eastbound approach	0	> 1,000
	Westbound approach	0	> 1,000
	Northbound approach	25	> 1,000
	Southbound approach	50	> 1,000
6	SW Parrish Lane & Ochoco Highway/OR 126		
	Eastbound approach	0	525
	Westbound approach	0	> 1,000
	Southbound approach	25	525
8	S Powell Butte Highway & SW Bussett Road		
	Westbound approach	25	375
	Northbound approach	0	> 1,000
	Southbound approach	0	> 1,000

ID	Intersection and Approach	95th Percentile Queue Length (feet)	Storage Length or Space Between Intersections (feet)
9	S Powell Butte Highway & Alfalfa Road		
	Westbound approach	50	525
	Northbound approach	0	> 1,000
	Southbound approach	25	> 1,000
10	SE Juniper Canyon Road & SE Paulina Highway/OR 380		
	Eastbound approach	0	> 1,000
	Westbound approach	0	> 1,000
	Northbound approach	0	> 1,000

Table 30. Year 2045 No Build (Juniper Canyon Higher Growth) Traffic Operations – Queueing

ID	Intersection and Approach	95th Percentile Queue Length (feet)	Storage Length or Space Between Intersections (feet)
4	SW Powell Butte Highway & Ochoco Highway/OR 126		
	Eastbound approach	0	> 1,000
	Westbound approach	225	> 1,000
	Northbound approach	**> 1,000**	> 1,000
	Southbound approach	**> 1,000**	> 1,000
5	SW Williams Road & Ochoco Highway/OR 126		
	Eastbound approach	25	> 1,000
	Westbound approach	0	> 1,000
	Northbound approach	50	> 1,000
	Southbound approach	150	> 1,000
6	SW Parrish Lane & Ochoco Highway/OR 126		
	Eastbound approach	25	525
	Westbound approach	0	> 1,000
	Southbound approach	25	525
8	S Powell Butte Highway & SW Bussett Road		
	Westbound approach	25	375
	Northbound approach	0	> 1,000
	Southbound approach	0	> 1,000
9	S Powell Butte Highway & Alfalfa Road		
	Westbound approach	125	525
	Northbound approach	0	> 1,000
	Southbound approach	25	> 1,000
10	SE Juniper Canyon Road & SE Paulina Highway/OR 380		
	Eastbound approach	0	> 1,000
	Westbound approach	0	> 1,000

ID	Intersection and Approach	95th Percentile Queue Length (feet)	Storage Length or Space Between Intersections (feet)
	Northbound approach	0	> 1,000

7.2.2 Two-Lane Highway Capacity Analysis

For the Year 2045 Future No Build scenario, segment peak hour traffic volumes were developed by applying an overall growth rate of 30.4% to Segments A through C and a growth rate of 64.7% to Segment D and then adding the trips from the two planned developments. Different growth rates were used to be consistent with the intersection volumes for intersections 4, 5, 6, 8, and 9 (30.4%) and intersection 10 (64.7%). Similar to Year 2023 Existing Conditions, the four segments were analyzed using McTrans HCS 2023. As shown in Table 31, one of the roadway segments would operate at LOS D in the southbound direction. The two-lane highway capacity analysis results are available in Attachment C, McTrans Highway Capacity Software Reports.

Table 31. Year 2045 No Build Traffic Operations – Two-Lane Highway Capacity Analysis

		Northbound			Southbound		
ID	Segment	PM Peak Hour Volume	Segment V/C Ratio	Segment LOS	PM Peak Hour Volume	Segment V/C Ratio	Segment LOS
A	SW George Millican Road south of Tom McCall Road	160	0.10	A	185	0.11	A
B	SW Powell Butte Highway north of SW Bussett Road	615	0.36	C	445	0.26	C
C	S Powell Butte Highway north of Alfalfa Road	545	0.32	C	360	0.21	C
D	SE Juniper Canyon Road south of SE Paulina Highway	385	0.23	C	685	0.40	D

LOS = level of service; V/C = volume to capacity

For the Year 2045 Future No Build (Juniper Canyon Higher Growth) scenario, segment peak hour traffic volumes were developed by applying an overall growth rate of 30.4% to Segments A through C and then adding the trips from the three planned developments, including the additional housing in the Juniper Canyon area. Similar to Year 2023 Existing Conditions and Year 2045 Future No Build, the four segments were analyzed using McTrans HCS 2023. As shown in Table 32, two of the roadway segments operate at LOS E in either the northbound or southbound direction. The two-lane highway capacity analysis results are available in Attachment C.

Table 32. Year 2045 No Build (Juniper Canyon Higher Growth) Traffic Operations – Two-Lane Highway Capacity Analysis

		Northbound			Southbound		
ID	Segment	PM Peak Hour Volume	Segment V/C Ratio	Segment LOS	PM Peak Hour Volume	Segment V/C Ratio	Segment LOS
A	SW George Millican Road south of Tom McCall Road	160	0.10	A	185	0.11	A

ID	Segment	Northbound			Southbound		
		PM Peak Hour Volume	Segment V/C Ratio	Segment LOS	PM Peak Hour Volume	Segment V/C Ratio	Segment LOS
B	SW Powell Butte Highway north of SW Bussett Road	865	0.51	D	625	0.37	C
C	S Powell Butte Highway north of Alfalfa Road	805	0.47	E	530	0.31	C
D	SE Juniper Canyon Rd south of SE Paulina Highway	750	0.44	E	1,325	0.78	E

LOS = level of service; sec = seconds; V/C = volume to capacity

7.3 Future Deficiencies

Crook County is rapidly growing, with an estimated population of more than 42,000 residents by 2072. If the roadway system receives no improvements or expansions, traffic operations are expected to worsen. Crook County should also address the needs of its higher-than-average population of older adults, who may lose the ability to drive as they age and require enhanced public transportation options to remain in their homes and meet daily needs. Future deficiencies inform what potential projects, programs, and policy changes will be incorporated into the updated Crook County TSP.

7.3.1 Safety Deficiencies

Current safety analysis revealed a high incidence of serious and fatal crashes, and public feedback indicates that safety of the transportation system is a key priority. Both intersection and segment crash analysis completed as part of this study show that the following locations exceed the critical rate and should be flagged for further study:

- SW Powell Butte Highway and SW Bussett Road
- OR 126 east of Powell Butte Highway
- OR 370 west of Lone Pine Road
- OR 370 east of Happy Hollow Road
- OR 380 south of NE 3rd Street

Additionally, the intersection of Rimrock Acres Loop and NW O'Neil Highway was flagged as approaching the critical rate. Further, while not identified in the safety analysis, the intersection of OR 126 and Powell Butte Highway was identified by community members as an area of concern. Crook County was awarded funding through`h the Safe Streets for All grant program in 2023. This funding will help the County develop a safety action plan that identifies proven countermeasures, policy and process changes, and programs that the County can implement to reduce serious crashes. The action plan is expected to be complete before the end of 2025.

7.3.2 Bicycle and Pedestrian System Deficiencies

As Crook County's population and traffic volumes increase in future years, the need for safe and accessible places to walk and bike will increase. Adequate active transportation infrastructure can improve access to nearby destinations while also offering increased mobility and recreation options.

Increasing walking and biking opportunities is also consistent with one of the goals of the Crook County TSP update: to provide a multimodal transportation system.

7.3.3 Public Transportation System Deficiencies

Public transportation service in Crook County is currently limited to infrequent headways that operate primarily within the peak hours. This approach leaves potential transit riders with few options for reaching their destinations without the use of a personal motor vehicle. Improved transit operations and supportive infrastructure can further expand Crook County's multimodal transportation system and better serve the area's aging population.

7.3.4 Roadway System Deficiencies

Projected future deficiencies exist for study intersections and segments in Crook County. Two future scenarios were analyzed to assess potential growth patterns. In the low-growth scenario, two of the six operation study intersections are projected to operate with a V/C ratio that exceeds the mobility target. In the higher-growth scenario, all six study intersections are projected to exceed their mobility target. In the higher-growth scenario, two of the four study segments are projected to operate at LOS E in at least one direction. In addition to operational deficiencies identified, residents have also expressed desire to identify and implement an alternate route for access into and out of Juniper Canyon that can support emergency response and evacuation routes.

As part of the 2024 TSP Update, Crook County expressed the desire to improve mobility and connectivity while increasing roadway capacity where necessary. Crook County also desires to expand economic development that supports developing or undeveloped areas, improve freight routes, and expand options for travel. Left unaddressed, worsening roadway operations will limit the County's ability to achieve the goals of the TSP and will make it more difficult for travelers to get around. By addressing future roadway deficiencies, Crook County can foster a transportation system that reduces congestion, increases safety, expands options, and ultimately improves countywide connections.

8. References

CET (Cascades East Transit). 2020. 2040 Transit Master Plan. Accessed April 10, 2024. https://cascadeseasttransit.com/about/2040-transit-master-plan/.

Crook County. 2017. Transportation System Plan. Accessed April 10, 2024. https://co.crook.or.us/sites/default/files/fileattachments/planning_commission/page/10251/crookcotsp_adopted_nov2017.pdf

Crook County. 2024. Road Department FY 2022 Budget. Accessed April 9, 2024. https://stories.opengov.com/crookcountyor/published/Ayx7ZIWC8

Dirty Freehub. 2024. Gravel Routes. Access July 11, 2024. https://dirtyfreehub.org/gravel-search/?center=Oregon

ITE (Institute of Transportation Engineers). 2021. Trip Generation Manual, 11th Edition. Accessed April 10, 2024. https://ecommerce.ite.org/IMIS/ItemDetail?iProductCode=IR-016L.

ODOT (Oregon Department of Transportation). 2023. 1999 Oregon Highway Plan. Accessed April 10, 2024. https://www.oregon.gov/odot/Planning/Documents/OHP.pdf.

ODOT. 2024. Analysis Procedures Manual Version 2. Accessed April 10, 2024. https://www.oregon.gov/odot/Planning/Documents/APMv2.pdf.

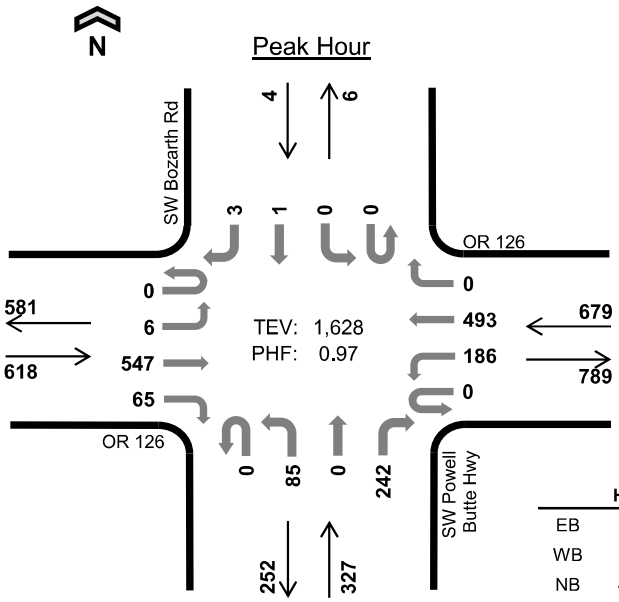
TRB (Transportation Research Board). 2016. Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis. The National Academies of Sciences, Engineering, and Medicine. Washington, DC.

U.S. Census Bureau. 2023. 2022 American Community Survey. Accessed April 9, 2024. https://www.census.gov/programs-surveys/acs

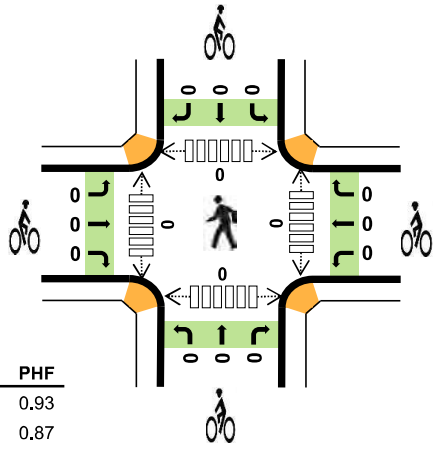
Attachment A

Traffic Counts

SW Powell Butte Hwy
OR 126



Date: 09/28/2023
Count Period: 2:00 PM to 6:00 PM
Peak Hour: 3:30 PM to 4:30 PM



	HV %:	PHF
EB	3.2%	0.93
WB	3.7%	0.87
NB	4.6%	0.87
SB	0.0%	0.50
TOTAL	3.7%	0.97

Four-Hour Count Summaries

Interval Start		OR 126 Eastbound				OR 126 Westbound				SW Powell Butte Hwy Northbound				SW Bozarth Rd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM		0	1	128	22	0	50	145	0	0	19	0	51	0	0	1	0	417	0
3:45 PM		0	3	129	11	0	50	116	0	0	32	0	62	0	0	0	1	404	0
4:00 PM		0	0	150	17	0	47	114	0	0	17	0	74	0	0	0	0	419	0
4:15 PM		0	2	140	15	0	39	118	0	0	17	0	55	0	0	0	2	388	1,628
Peak Hour	All	0	6	547	65	0	186	493	0	0	85	0	242	0	0	1	3	1,628	0
	HV	0	0	19	1	0	2	23	0	0	1	0	14	0	0	0	0	60	0
	HV%	-	0%	3%	2%	-	1%	5%	-	-	1%	-	6%	-	-	0%	0%	4%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
3:30 PM	9	6	3	0	*18*	0	0	0	0	*0*	0	0	0	0	*0*
3:45 PM	2	6	9	0	*17*	0	0	0	0	*0*	0	0	0	0	*0*
4:00 PM	4	8	1	0	*13*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	5	5	2	0	*12*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	20	25	15	0	*60*	0	0	0	0	*0*	0	0	0	0	*0*

Four-Hour Count Summaries

Interval Start	OR 126 Eastbound				OR 126 Westbound				SW Powell Butte Hwy Northbound				SW Bozarth Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	2	96	28	0	38	82	0	0	16	0	35	0	0	0	0	297	0
2:15 PM	0	0	109	19	0	30	90	0	0	19	0	36	0	0	0	1	304	0
2:30 PM	0	1	115	15	0	46	123	1	0	14	0	40	0	0	0	1	356	0
2:45 PM	0	1	123	18	0	30	105	0	0	15	0	34	0	0	0	1	327	1,284
3:00 PM	0	1	122	20	0	38	107	0	0	15	0	56	0	0	0	0	359	1,346
3:15 PM	0	1	113	12	0	58	100	0	0	14	0	36	0	0	1	0	335	1,377
3:30 PM	**0**	**1**	**128**	**22**	**0**	**50**	**145**	**0**	**0**	**19**	**0**	**51**	**0**	**0**	**1**	**0**	**417**	1,438
3:45 PM	**0**	**3**	**129**	**11**	**0**	**50**	**116**	**0**	**0**	**32**	**0**	**62**	**0**	**0**	**0**	**1**	**404**	1,515
4:00 PM	**0**	**0**	**150**	**17**	**0**	**47**	**114**	**0**	**0**	**17**	**0**	**74**	**0**	**0**	**0**	**0**	**419**	1,575
4:15 PM	**0**	**2**	**140**	**15**	**0**	**39**	**118**	**0**	**0**	**17**	**0**	**55**	**0**	**0**	**0**	**2**	**388**	**1,628**
4:30 PM	0	1	146	27	0	38	118	0	0	18	0	57	0	0	0	0	405	1,616
4:45 PM	0	1	132	16	0	42	103	0	0	16	1	54	0	0	0	0	365	1,577
5:00 PM	0	1	136	19	0	50	103	1	0	21	1	48	0	0	0	2	382	1,540
5:15 PM	0	1	142	22	0	44	98	0	0	18	0	82	0	0	0	2	409	1,561
5:30 PM	0	1	110	13	0	35	100	0	0	20	0	86	0	0	0	2	367	1,523
5:45 PM	0	2	122	22	0	30	64	0	0	15	0	56	0	0	0	1	312	1,470
Count Total	0	19	2,013	296	0	665	1,686	2	0	286	2	862	0	0	2	13	5,846	0
Peak Hour All	**0**	**6**	**547**	**65**	**0**	**186**	**493**	**0**	**0**	**85**	**0**	**242**	**0**	**0**	**1**	**3**	**1,628**	**0**
Peak Hour HV	**0**	**0**	**19**	**1**	**0**	**2**	**23**	**0**	**0**	**1**	**0**	**14**	**0**	**0**	**0**	**0**	**60**	**0**
Peak Hour HV%	**-**	**0%**	**3%**	**2%**	**-**	**1%**	**5%**	**-**	**-**	**1%**	**-**	**6%**	**-**	**-**	**0%**	**0%**	**4%**	**0**

Note: Four-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:00 PM	6	8	2	0	*16*	0	0	0	0	*0*	0	0	0	0	*0*
2:15 PM	6	3	3	0	*12*	0	0	0	0	*0*	0	0	0	0	*0*
2:30 PM	5	11	1	0	*17*	0	0	0	0	*0*	0	0	0	0	*0*
2:45 PM	7	5	4	0	*16*	0	0	0	0	*0*	0	0	0	0	*0*
3:00 PM	4	9	4	0	*17*	0	0	0	0	*0*	0	0	0	0	*0*
3:15 PM	3	9	0	0	*12*	0	0	0	0	*0*	0	0	0	0	*0*
3:30 PM	**9**	**6**	**3**	**0**	***18***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
3:45 PM	**2**	**6**	**9**	**0**	***17***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:00 PM	**4**	**8**	**1**	**0**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**5**	**5**	**2**	**0**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
4:30 PM	10	8	4	0	*22*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	1	2	3	0	*6*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	3	8	2	0	*13*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	1	4	1	0	*6*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	2	6	0	0	*8*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	2	1	1	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	70	99	40	0	*209*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	**20**	**25**	**15**	**0**	***60***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

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Four-Hour Count Summaries - Heavy Vehicles

Interval Start	OR 126 Eastbound				OR 126 Westbound				SW Powell Butte Hwy Northbound				SW Bozarth Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	6	0	0	4	4	0	0	0	0	2	0	0	0	0	16	0
2:15 PM	0	0	5	1	0	2	1	0	0	2	0	1	0	0	0	0	12	0
2:30 PM	0	0	5	0	0	3	7	1	0	0	0	1	0	0	0	0	17	0
2:45 PM	0	0	7	0	0	1	4	0	0	0	0	4	0	0	0	0	16	61
3:00 PM	0	0	3	1	0	2	7	0	0	1	0	3	0	0	0	0	17	62
3:15 PM	0	0	3	0	0	5	4	0	0	0	0	0	0	0	0	0	12	62
3:30 PM	**0**	**0**	**8**	**1**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**18**	63
3:45 PM	**0**	**0**	**2**	**0**	**0**	**1**	**5**	**0**	**0**	**1**	**0**	**8**	**0**	**0**	**0**	**0**	**17**	64
4:00 PM	**0**	**0**	**4**	**0**	**0**	**1**	**7**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**13**	60
4:15 PM	**0**	**0**	**5**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**12**	**60**
4:30 PM	0	0	10	0	0	4	4	0	0	0	0	4	0	0	0	0	22	64
4:45 PM	0	0	1	0	0	0	2	0	0	1	0	2	0	0	0	0	6	53
5:00 PM	0	0	3	0	0	2	6	0	0	2	0	0	0	0	0	0	13	53
5:15 PM	0	0	1	0	0	1	3	0	0	0	0	1	0	0	0	0	6	47
5:30 PM	0	0	1	1	0	1	5	0	0	0	0	0	0	0	0	0	8	33
5:45 PM	0	0	2	0	0	0	1	0	0	0	0	1	0	0	0	0	4	31
Count Total	0	0	66	4	0	27	71	1	0	7	0	33	0	0	0	0	209	0
Peak Hour	**0**	**0**	**19**	**1**	**0**	**2**	**23**	**0**	**0**	**1**	**0**	**14**	**0**	**0**	**0**	**0**	**60**	**0**

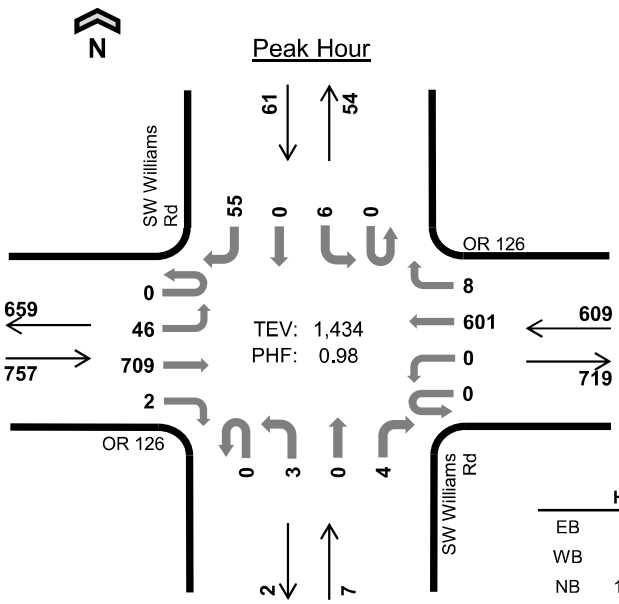
Four-Hour Count Summaries - Bikes

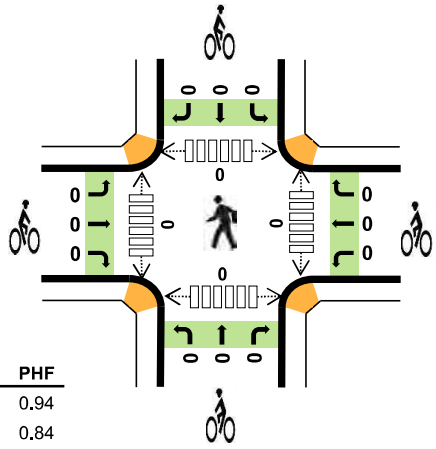
Interval Start	OR 126 Eastbound			OR 126 Westbound			SW Powell Butte Hwy Northbound			SW Bozarth Rd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
3:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

SW Williams Rd
OR 126

Date: 09/28/2023
Count Period: 1:00 PM to 6:00 PM
Peak Hour: 3:30 PM to 4:30 PM





	HV %:	PHF
EB	3.8%	0.94
WB	3.9%	0.84
NB	14.3%	0.88
SB	0.0%	0.73
TOTAL	3.8%	0.98

Five-Hour Count Summaries

Interval Start		OR 126 Eastbound				OR 126 Westbound				SW Williams Rd Northbound				SW Williams Rd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM		0	4	157	0	0	0	177	4	0	0	0	2	0	2	0	19	365	0
3:45 PM		0	16	180	0	0	0	142	1	0	1	0	1	0	1	0	12	354	0
4:00 PM		0	17	183	2	0	0	144	2	0	1	0	1	0	1	0	15	366	0
4:15 PM		0	9	189	0	0	0	138	1	0	1	0	0	0	2	0	9	349	1,434
Peak Hour	All	0	46	709	2	0	0	601	8	0	3	0	4	0	6	0	55	1,434	0
	HV	0	1	27	1	0	0	24	0	0	0	0	1	0	0	0	0	54	0
	HV%	-	2%	4%	50%	-	-	4%	0%	-	0%	-	25%	-	0%	-	0%	4%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
3:30 PM	9	6	0	0	*15*	0	0	0	0	*0*	0	0	0	0	*0*
3:45 PM	5	6	0	0	*11*	0	0	0	0	*0*	0	0	0	0	*0*
4:00 PM	9	7	1	0	*17*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	6	5	0	0	*11*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	29	24	1	0	*54*	0	0	0	0	*0*	0	0	0	0	*0*

Five-Hour Count Summaries

Interval Start	OR 126 Eastbound				OR 126 Westbound				SW Williams Rd Northbound				SW Williams Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
1:00 PM	0	10	87	0	0	0	96	1	0	0	0	0	0	0	0	5	199	0
1:15 PM	0	5	99	1	0	1	99	2	0	0	0	1	0	1	0	7	216	0
1:30 PM	0	5	119	0	0	1	99	1	0	1	0	0	0	1	0	7	234	0
1:45 PM	0	7	104	0	0	0	101	3	0	1	0	1	1	4	0	6	228	877
2:00 PM	0	8	119	2	0	5	106	2	0	5	0	1	0	4	2	7	261	939
2:15 PM	0	9	105	14	0	7	112	3	0	14	0	0	0	1	2	9	276	999
2:30 PM	0	8	132	6	0	3	126	1	0	13	6	25	0	2	1	18	341	1,106
2:45 PM	0	11	143	0	0	0	125	5	0	2	0	2	0	2	0	8	298	1,176
3:00 PM	0	6	165	0	0	0	135	1	0	3	0	1	0	6	0	7	324	1,239
3:15 PM	0	6	135	0	0	0	143	2	0	0	0	0	0	0	0	15	301	1,264
3:30 PM	**0**	**4**	**157**	**0**	**0**	**0**	**177**	**4**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**19**	**365**	1,288
3:45 PM	**0**	**16**	**180**	**0**	**0**	**0**	**142**	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**12**	**354**	1,344
4:00 PM	**0**	**17**	**183**	**2**	**0**	**0**	**144**	**2**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**15**	**366**	1,386
4:15 PM	**0**	**9**	**189**	**0**	**0**	**0**	**138**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**9**	**349**	**1,434**
4:30 PM	0	14	166	3	0	0	140	1	0	1	0	1	0	3	0	11	340	1,409
4:45 PM	0	13	164	0	0	1	129	0	0	0	0	0	0	1	0	5	313	1,368
5:00 PM	0	9	180	1	0	0	129	2	0	2	0	0	0	1	0	11	335	1,337
5:15 PM	0	13	192	2	0	0	136	1	0	0	0	0	0	1	0	12	357	1,345
5:30 PM	0	17	173	3	0	3	116	0	0	3	0	0	0	2	0	11	328	1,333
5:45 PM	0	9	142	25	0	13	93	2	0	15	1	0	0	2	1	8	311	1,331
Count Total	0	196	2,934	59	0	34	2,486	35	0	63	7	36	1	37	6	202	6,096	0
Peak Hour All	**0**	**46**	**709**	**2**	**0**	**0**	**601**	**8**	**0**	**3**	**0**	**4**	**0**	**6**	**0**	**55**	**1,434**	**0**
Peak Hour HV	**0**	**1**	**27**	**1**	**0**	**0**	**24**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**54**	**0**
Peak Hour HV%	**-**	**2%**	**4%**	**50%**	**-**	**-**	**4%**	**0%**	**-**	**0%**	**-**	**25%**	**-**	**0%**	**-**	**0%**	**4%**	**0**

Note: Five-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
1:00 PM	7	6	0	0	*13*	0	0	0	0	*0*	0	0	0	0	*0*
1:15 PM	11	12	0	0	*23*	0	0	0	0	*0*	0	0	0	0	*0*
1:30 PM	9	10	0	0	*19*	0	0	0	0	*0*	0	0	0	0	*0*
1:45 PM	4	10	0	0	*14*	0	0	0	0	*0*	0	0	0	0	*0*
2:00 PM	7	10	0	0	*17*	0	0	0	0	*0*	1	0	0	0	*1*
2:15 PM	6	4	0	0	*10*	0	0	0	0	*0*	4	0	2	1	*7*
2:30 PM	9	9	3	0	*21*	0	0	0	0	*0*	22	0	5	2	*29*
2:45 PM	8	5	1	0	*14*	0	0	0	0	*0*	0	0	0	2	*2*
3:00 PM	11	8	0	0	*19*	0	0	0	0	*0*	0	0	0	0	*0*
3:15 PM	4	7	0	0	*11*	0	0	0	0	*0*	0	0	0	0	*0*
3:30 PM	**9**	**6**	**0**	**0**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
3:45 PM	**5**	**6**	**0**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:00 PM	**9**	**7**	**1**	**0**	***17***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**6**	**5**	**0**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
4:30 PM	14	6	1	0	*21*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	4	2	0	0	*6*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	4	7	0	2	*13*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	1	2	0	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	7	0	0	*7*	0	0	0	0	*0*	5	0	0	0	*5*
5:45 PM	3	2	0	0	*5*	0	0	0	0	*0*	4	0	0	1	*5*
Count Total	131	131	6	2	*270*	0	0	0	0	*0*	36	0	7	6	*49*
Peak Hour	**29**	**24**	**1**	**0**	***54***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Five-Hour Count Summaries - Heavy Vehicles

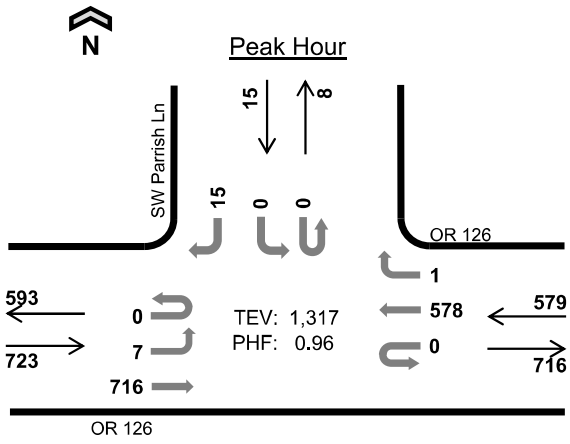
Interval Start	OR 126 Eastbound				OR 126 Westbound				SW Williams Rd Northbound				SW Williams Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
1:00 PM	0	1	6	0	0	0	6	0	0	0	0	0	0	0	0	0	13	0
1:15 PM	0	0	11	0	0	0	12	0	0	0	0	0	0	0	0	0	23	0
1:30 PM	0	0	9	0	0	0	10	0	0	0	0	0	0	0	0	0	19	0
1:45 PM	0	0	4	0	0	0	10	0	0	0	0	0	0	0	0	0	14	69
2:00 PM	0	0	7	0	0	1	9	0	0	0	0	0	0	0	0	0	17	73
2:15 PM	0	0	6	0	0	1	3	0	0	0	0	0	0	0	0	0	10	60
2:30 PM	0	1	7	1	0	1	8	0	0	2	0	1	0	0	0	0	21	62
2:45 PM	0	0	8	0	0	0	5	0	0	0	0	1	0	0	0	0	14	62
3:00 PM	0	0	11	0	0	0	8	0	0	0	0	0	0	0	0	0	19	64
3:15 PM	0	0	4	0	0	0	6	1	0	0	0	0	0	0	0	0	11	65
3:30 PM	**0**	**0**	**9**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	59
3:45 PM	**0**	**0**	**5**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	56
4:00 PM	**0**	**1**	**7**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**17**	54
4:15 PM	**0**	**0**	**6**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**54**
4:30 PM	0	0	13	1	0	0	6	0	0	0	0	1	0	0	0	0	21	60
4:45 PM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	6	55
5:00 PM	0	0	4	0	0	0	6	1	0	0	0	0	0	0	0	2	13	51
5:15 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	43
5:30 PM	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	7	29
5:45 PM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	5	28
Count Total	0	3	125	3	0	3	126	2	0	2	0	4	0	0	0	2	270	0
Peak Hour	**0**	**1**	**27**	**1**	**0**	**0**	**24**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**54**	**0**

Five-Hour Count Summaries - Bikes

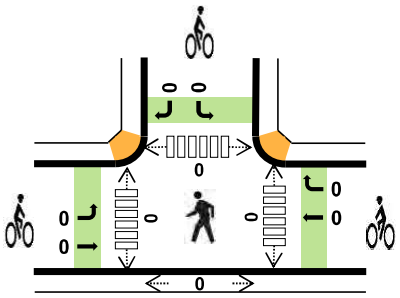
Interval Start	OR 126 Eastbound			OR 126 Westbound			SW Williams Rd Northbound			SW Williams Rd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
3:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

SW Parrish Ln
OR 126



Date: 09/28/2023
Count Period: 2:00 PM to 6:00 PM
Peak Hour: 3:30 PM to 4:30 PM



	HV %:	PHF
EB	4.3%	0.86
WB	3.8%	0.88
NB	-	-
SB	13.3%	0.63
TOTAL	4.2%	0.96

Four-Hour Count Summaries

Interval Start		OR 126 Eastbound				OR 126 Westbound				0 Northbound				SW Parrish Ln Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM		0	3	147	0	0	0	165	0	0	0	0	0	0	0	0	3	318	0
3:45 PM		0	1	183	0	0	0	133	0	0	0	0	0	0	0	0	3	320	0
4:00 PM		0	2	178	0	0	0	152	0	0	0	0	0	0	0	0	3	335	0
4:15 PM		0	1	208	0	0	0	128	1	0	0	0	0	0	0	0	6	344	1,317
Peak Hour	All	0	7	716	0	0	0	578	1	0	0	0	0	0	0	0	15	1,317	0
	HV	0	0	31	0	0	0	22	0	0	0	0	0	0	0	0	2	55	0
	HV%	-	0%	4%	-	-	-	4%	0%	-	-	-	-	-	-	-	13%	4%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
3:30 PM	8	5	0	0	*13*	0	0	0	0	*0*	0	0	0	0	*0*
3:45 PM	7	5	0	1	*13*	0	0	0	0	*0*	0	0	0	0	*0*
4:00 PM	8	7	0	0	*15*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	8	5	0	1	*14*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	31	22	0	2	*55*	0	0	0	0	*0*	0	0	0	0	*0*

Four-Hour Count Summaries

Interval Start	OR 126 Eastbound				OR 126 Westbound				0 Northbound				SW Parrish Ln Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	6	110	0	0	0	116	1	0	0	0	0	0	0	0	5	238	0
2:15 PM	0	1	113	0	0	0	121	0	0	0	0	0	0	0	0	1	236	0
2:30 PM	0	5	134	0	0	0	111	0	0	0	0	0	0	1	0	5	256	0
2:45 PM	0	2	145	0	0	0	129	1	0	0	0	0	0	0	0	4	281	1,011
3:00 PM	0	2	152	0	0	0	137	0	0	0	0	0	0	0	0	3	294	1,067
3:15 PM	0	3	126	0	0	0	145	1	0	0	0	0	0	1	0	2	278	1,109
3:30 PM	**0**	**3**	**147**	**0**	**0**	**0**	**165**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**318**	1,171
3:45 PM	**0**	**1**	**183**	**0**	**0**	**0**	**133**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**320**	1,210
4:00 PM	**0**	**2**	**178**	**0**	**0**	**0**	**152**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**335**	1,251
4:15 PM	**0**	**1**	**208**	**0**	**0**	**0**	**128**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**344**	**1,317**
4:30 PM	0	0	155	0	0	0	132	1	0	0	0	0	0	1	0	3	292	1,291
4:45 PM	0	2	153	0	0	0	112	1	0	0	0	0	0	0	0	2	270	1,241
5:00 PM	0	6	167	0	0	0	136	0	0	0	0	0	0	0	0	3	312	1,218
5:15 PM	0	2	180	0	0	0	122	0	0	0	0	0	0	0	0	1	305	1,179
5:30 PM	0	1	169	0	0	0	117	0	0	0	0	0	0	0	0	2	289	1,176
5:45 PM	0	3	144	0	0	0	99	0	0	0	0	0	0	0	0	5	251	1,157
Count Total	0	40	2,464	0	0	0	2,055	6	0	0	0	0	0	3	0	51	4,619	0
Peak Hour All	**0**	**7**	**716**	**0**	**0**	**0**	**578**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**1,317**	**0**
Peak Hour HV	**0**	**0**	**31**	**0**	**0**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**55**	**0**
Peak Hour HV%	**-**	**0%**	**4%**	**-**	**-**	**-**	**4%**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**13%**	**4%**	**0**

Note: Four-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:00 PM	8	9	0	0	*17*	0	0	0	0	*0*	0	0	0	0	*0*
2:15 PM	8	3	0	0	*11*	0	0	0	0	*0*	0	0	0	0	*0*
2:30 PM	7	11	0	0	*18*	0	0	0	0	*0*	0	0	0	0	*0*
2:45 PM	7	8	0	0	*15*	0	0	0	0	*0*	0	0	0	0	*0*
3:00 PM	9	6	0	0	*15*	0	0	0	0	*0*	0	0	0	0	*0*
3:15 PM	6	4	0	0	*10*	0	0	0	0	*0*	0	0	0	0	*0*
3:30 PM	**8**	**5**	**0**	**0**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
3:45 PM	**7**	**5**	**0**	**1**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:00 PM	**8**	**7**	**0**	**0**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**8**	**5**	**0**	**1**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
4:30 PM	7	6	0	0	*13*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	6	2	0	0	*8*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	6	5	0	2	*13*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	2	2	0	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	5	0	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	2	3	0	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	99	86	0	4	*189*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**31**	**22**	**0**	**2**	***55***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Four-Hour Count Summaries - Heavy Vehicles

Interval Start	OR 126 Eastbound				OR 126 Westbound				0 Northbound				SW Parrish Ln Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	8	0	0	0	9	0	0	0	0	0	0	0	0	0	17	0
2:15 PM	0	0	8	0	0	0	3	0	0	0	0	0	0	0	0	0	11	0
2:30 PM	0	0	7	0	0	0	11	0	0	0	0	0	0	0	0	0	18	0
2:45 PM	0	0	7	0	0	0	8	0	0	0	0	0	0	0	0	0	15	61
3:00 PM	0	0	9	0	0	0	6	0	0	0	0	0	0	0	0	0	15	59
3:15 PM	0	0	6	0	0	0	4	0	0	0	0	0	0	0	0	0	10	58
3:30 PM	**0**	**0**	**8**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	53
3:45 PM	**0**	**0**	**7**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**13**	51
4:00 PM	**0**	**0**	**8**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	51
4:15 PM	**0**	**0**	**8**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**14**	**55**
4:30 PM	0	0	7	0	0	0	6	0	0	0	0	0	0	0	0	0	13	55
4:45 PM	0	0	6	0	0	0	2	0	0	0	0	0	0	0	0	0	8	50
5:00 PM	0	0	6	0	0	0	5	0	0	0	0	0	0	0	0	2	13	48
5:15 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	38
5:30 PM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5	30
5:45 PM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	5	27
Count Total	0	0	99	0	0	0	86	0	0	0	0	0	0	0	0	4	189	0
Peak Hour	**0**	**0**	**31**	**0**	**0**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**55**	**0**

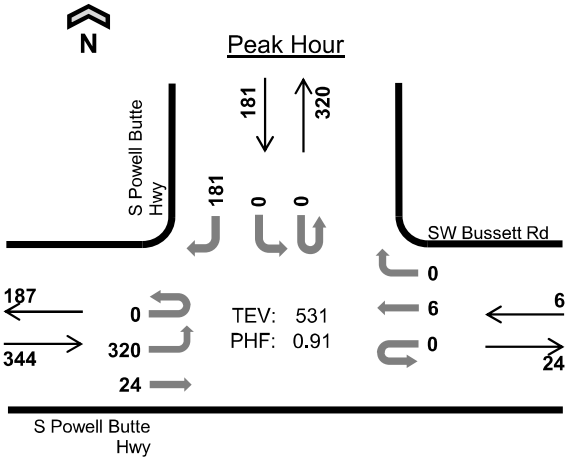
Four-Hour Count Summaries - Bikes

Interval Start	OR 126 Eastbound			OR 126 Westbound			0 Northbound			SW Parrish Ln Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
3:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

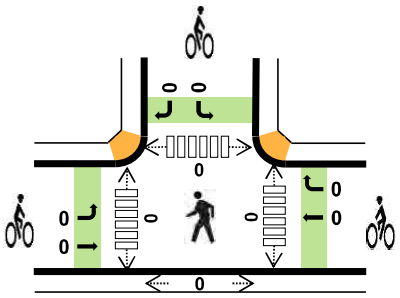
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

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S Powell Butte Hwy
S Powell Butte Hwy



Date: 09/28/2023
Count Period: 2:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	0.9%	0.84
WB	0.0%	0.75
NB	-	-
SB	2.2%	0.82
TOTAL	1.3%	0.91

Four-Hour Count Summaries

Interval Start		S Powell Butte Hwy Eastbound				SW Bussett Rd Westbound				0 Northbound				S Powell Butte Hwy Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM		0	62	4	0	0	0	0	0	0	0	0	0	0	0	0	49	115	0
5:00 PM		0	81	6	0	0	0	2	0	0	0	0	0	0	0	0	45	134	0
5:15 PM		0	83	6	0	0	0	2	0	0	0	0	0	0	0	0	55	146	0
5:30 PM		0	94	8	0	0	0	2	0	0	0	0	0	0	0	0	32	136	531
Peak Hour	All	0	320	24	0	0	0	6	0	0	0	0	0	0	0	0	181	531	0
	HV	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7	0
	HV%	-	1%	0%	-	-	-	0%	-	-	-	-	-	-	-	-	2%	1%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	2	0	0	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	1	0	0	3	*4*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	3	0	0	4	*7*	0	0	0	0	*0*	0	0	0	0	*0*

Four-Hour Count Summaries

Interval Start	S Powell Butte Hwy				SW Bussett Rd				0				S Powell Butte Hwy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	46	1	0	0	0	1	0	0	0	0	0	0	0	0	41	89	0
2:15 PM	0	37	5	0	0	0	3	0	0	0	0	0	0	0	0	42	87	0
2:30 PM	0	48	6	0	0	0	2	0	0	0	0	0	0	0	0	51	107	0
2:45 PM	0	42	3	0	0	0	2	0	0	0	0	0	0	0	0	33	80	363
3:00 PM	0	61	4	0	0	0	1	0	0	0	0	0	0	0	0	43	109	383
3:15 PM	0	41	2	0	0	0	0	0	0	0	0	0	0	0	0	62	105	401
3:30 PM	0	61	3	0	0	0	3	0	0	0	0	0	0	0	0	54	121	415
3:45 PM	0	70	4	0	0	0	0	0	0	0	0	0	0	0	0	54	128	463
4:00 PM	0	87	9	0	0	0	3	0	0	0	0	0	0	0	0	49	148	502
4:15 PM	0	58	3	0	0	0	1	0	0	0	0	0	0	0	0	52	114	511
4:30 PM	0	75	3	0	0	0	3	0	0	0	0	0	0	0	0	43	124	514
4:45 PM	**0**	**62**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**49**	**115**	501
5:00 PM	**0**	**81**	**6**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**45**	**134**	487
5:15 PM	**0**	**83**	**6**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**55**	**146**	519
5:30 PM	**0**	**94**	**8**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**32**	**136**	**531**
5:45 PM	0	54	5	0	0	0	1	0	0	0	0	0	0	0	0	41	101	517
Count Total	0	1,000	72	0	0	0	26	0	0	0	0	0	0	0	0	746	1,844	0
Peak Hour All	**0**	**320**	**24**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**181**	**531**	**0**
Peak Hour HV	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**7**	**0**
Peak Hour HV%	**-**	**1%**	**0%**	**-**	**-**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2%**	**1%**	**0**

Note: Four-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:00 PM	3	0	0	4	*7*	0	0	0	0	*0*	0	0	0	0	*0*
2:15 PM	2	0	0	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
2:30 PM	1	0	0	2	*3*	0	0	0	0	*0*	0	0	0	0	*0*
2:45 PM	3	0	0	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
3:00 PM	4	0	0	3	*7*	0	0	0	0	*0*	0	0	0	0	*0*
3:15 PM	2	0	0	7	*9*	0	0	0	0	*0*	0	0	0	0	*0*
3:30 PM	4	0	0	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
3:45 PM	3	0	0	1	*4*	0	0	0	0	*0*	0	0	0	0	*0*
4:00 PM	3	0	0	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	2	0	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	2	0	0	4	*6*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**2**	**0**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**1**	**0**	**0**	**3**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:45 PM	1	0	0	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	33	0	0	27	*60*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**3**	**0**	**0**	**4**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Four-Hour Count Summaries - Heavy Vehicles

Interval Start	S Powell Butte Hwy				SW Bussett Rd				0				S Powell Butte Hwy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7	0
2:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0
2:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0
2:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	16
3:00 PM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	3	7	16
3:15 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	7	9	22
3:30 PM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	23
3:45 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	4	24
4:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	20
4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	13
4:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6	15
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	11
5:00 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	11
5:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**4**	13
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	9
Count Total	0	31	2	0	0	0	0	0	0	0	0	0	0	0	0	27	60	0
Peak Hour	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**7**	**0**

Four-Hour Count Summaries - Bikes

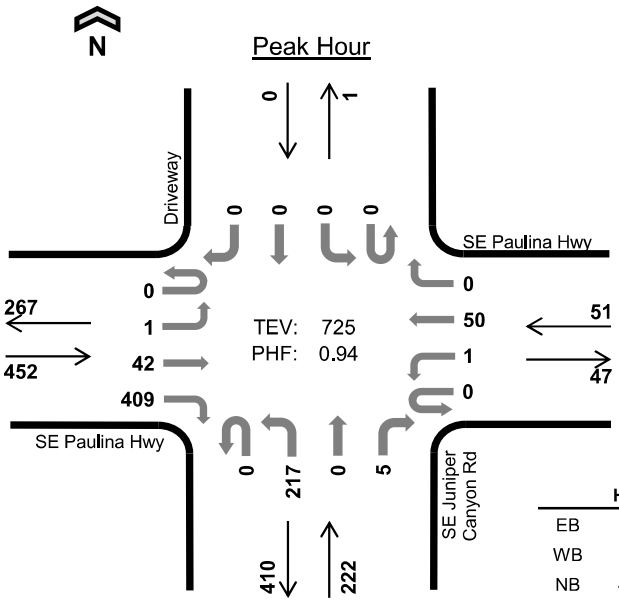
Interval Start	S Powell Butte Hwy			SW Bussett Rd			0			S Powell Butte Hwy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

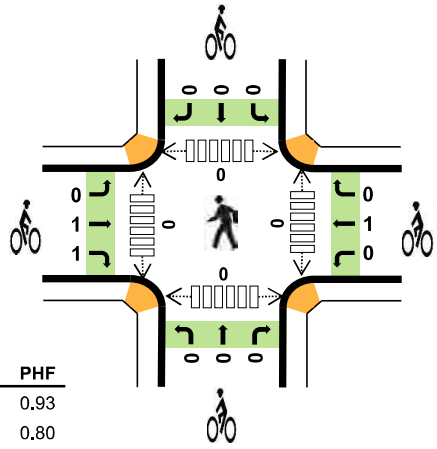
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

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SE Juniper Canyon Rd
SE Paulina Hwy

Date: 09/28/2023
Count Period: 2:00 PM to 6:00 PM
Peak Hour: 3:45 PM to 4:45 PM





	HV %:	PHF
EB	3.3%	0.93
WB	3.9%	0.80
NB	4.5%	0.96
SB	-	-
TOTAL	3.7%	0.94

Four-Hour Count Summaries

Interval Start		SE Paulina Hwy Eastbound				SE Paulina Hwy Westbound				SE Juniper Canyon Rd Northbound				Driveway Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:45 PM		0	0	10	99	0	0	16	0	0	57	0	1	0	0	0	0	183	0
4:00 PM		0	0	9	107	0	0	10	0	0	52	0	2	0	0	0	0	180	0
4:15 PM		0	0	13	92	0	0	11	0	0	51	0	2	0	0	0	0	169	0
4:30 PM		0	1	10	111	0	1	13	0	0	57	0	0	0	0	0	0	193	725
Peak Hour	All	0	1	42	409	0	1	50	0	0	217	0	5	0	0	0	0	725	0
	HV	0	0	1	14	0	0	2	0	0	10	0	0	0	0	0	0	27	0
	HV%	-	0%	2%	3%	-	0%	4%	-	-	5%	-	0%	-	-	-	-	4%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
3:45 PM	8	1	1	0	*10*	1	0	0	0	*1*	0	0	0	0	*0*
4:00 PM	2	1	0	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	2	0	4	0	*6*	1	0	0	0	*1*	0	0	0	0	*0*
4:30 PM	3	0	5	0	*8*	0	1	0	0	*1*	0	0	0	0	*0*
Peak Hour	15	2	10	0	*27*	2	1	0	0	*3*	0	0	0	0	*0*

Four-Hour Count Summaries

Interval Start	SE Paulina Hwy Eastbound				SE Paulina Hwy Westbound				SE Juniper Canyon Rd Northbound				Driveway Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	13	66	0	0	7	0	0	47	0	1	0	0	0	0	134	0
2:15 PM	0	0	15	68	0	1	12	0	0	49	0	0	0	0	0	0	145	0
2:30 PM	0	0	24	76	0	0	8	0	0	63	0	0	0	0	0	0	171	0
2:45 PM	0	0	8	78	0	0	8	0	0	52	0	0	0	0	0	0	146	596
3:00 PM	0	1	11	69	0	1	16	0	0	63	0	0	0	0	0	1	162	624
3:15 PM	0	0	14	76	0	1	13	0	0	57	0	1	0	0	0	0	162	641
3:30 PM	1	0	8	95	0	1	19	0	0	49	0	0	0	0	0	0	173	643
3:45 PM	**0**	**0**	**10**	**99**	**0**	**0**	**16**	**0**	**0**	**57**	**0**	**1**	**0**	**0**	**0**	**0**	**183**	680
4:00 PM	**0**	**0**	**9**	**107**	**0**	**0**	**10**	**0**	**0**	**52**	**0**	**2**	**0**	**0**	**0**	**0**	**180**	698
4:15 PM	**0**	**0**	**13**	**92**	**0**	**0**	**11**	**0**	**0**	**51**	**0**	**2**	**0**	**0**	**0**	**0**	**169**	705
4:30 PM	**0**	**1**	**10**	**111**	**0**	**1**	**13**	**0**	**0**	**57**	**0**	**0**	**0**	**0**	**0**	**0**	**193**	**725**
4:45 PM	0	0	4	92	0	2	13	0	0	55	0	0	0	0	0	1	167	709
5:00 PM	0	0	11	114	0	0	12	0	0	46	0	1	0	0	0	0	184	713
5:15 PM	0	0	13	102	0	0	4	0	0	48	0	1	0	0	0	0	168	712
5:30 PM	0	0	18	100	0	0	9	0	0	44	0	1	0	0	0	0	172	691
5:45 PM	0	1	10	85	0	0	9	0	0	31	0	0	0	0	0	0	136	660
Count Total	1	3	191	1,430	0	7	180	0	0	821	0	10	0	0	0	2	2,645	0
Peak Hour All	**0**	**1**	**42**	**409**	**0**	**1**	**50**	**0**	**0**	**217**	**0**	**5**	**0**	**0**	**0**	**0**	**725**	**0**
Peak Hour HV	**0**	**0**	**1**	**14**	**0**	**0**	**2**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**0**
Peak Hour HV%	**-**	**0%**	**2%**	**3%**	**-**	**0%**	**4%**	**-**	**-**	**5%**	**-**	**0%**	**-**	**-**	**-**	**-**	**4%**	**0**

Note: Four-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
2:00 PM	2	0	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
2:15 PM	3	0	1	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
2:30 PM	4	0	1	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
2:45 PM	2	0	0	0	*2*	1	0	0	0	*1*	0	0	0	0	*0*
3:00 PM	1	3	1	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
3:15 PM	1	1	2	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
3:30 PM	0	3	2	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
3:45 PM	**8**	**1**	**1**	**0**	***10***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
4:00 PM	**2**	**1**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**2**	**0**	**4**	**0**	***6***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**3**	**0**	**5**	**0**	***8***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
4:45 PM	0	1	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	2	0	1	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	1	2	0	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	31	12	19	0	*62*	3	1	0	0	*4*	0	0	0	0	*0*
Peak Hour	**15**	**2**	**10**	**0**	***27***	**2**	**1**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***

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Four-Hour Count Summaries - Heavy Vehicles

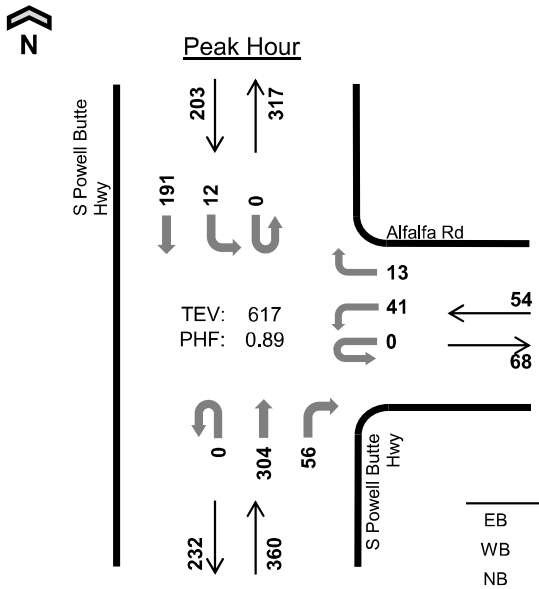
Interval Start	SE Paulina Hwy Eastbound				SE Paulina Hwy Westbound				SE Juniper Canyon Rd Northbound				Driveway Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
2:15 PM	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	4	0
2:30 PM	0	0	1	3	0	0	0	0	0	1	0	0	0	0	0	0	5	0
2:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	13
3:00 PM	0	0	0	1	0	0	3	0	0	1	0	0	0	0	0	0	5	16
3:15 PM	0	0	0	1	0	0	1	0	0	2	0	0	0	0	0	0	4	16
3:30 PM	0	0	0	0	0	0	3	0	0	2	0	0	0	0	0	0	5	16
3:45 PM	**0**	**0**	**1**	**7**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	24
4:00 PM	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	22
4:15 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	24
4:30 PM	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**27**
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	19
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
5:15 PM	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	3	13
5:30 PM	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	3	8
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Count Total	0	0	6	25	0	0	12	0	0	19	0	0	0	0	0	0	62	0
Peak Hour	**0**	**0**	**1**	**14**	**0**	**0**	**2**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**0**

Four-Hour Count Summaries - Bikes

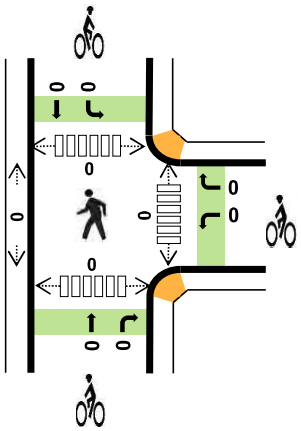
Interval Start	SE Paulina Hwy Eastbound			SE Paulina Hwy Westbound			SE Juniper Canyon Rd Northbound			Driveway Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	1
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	1
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
4:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
4:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	1	2	0	1	0	0	0	0	0	0	0	4	0
Peak Hour	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

S Powell Butte Hwy
Alfalfa Rd



Date: 09/28/2023
Count Period: 2:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	-	-
WB	3.7%	0.90
NB	0.6%	0.86
SB	3.9%	0.89
TOTAL	1.9%	0.89

Four-Hour Count Summaries

Interval Start		0 Eastbound				Alfalfa Rd Westbound				S Powell Butte Hwy Northbound				S Powell Butte Hwy Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 PM		0	0	0	0	0	13	0	2	0	0	63	13	0	5	43	0	139	0
4:45 PM		0	0	0	0	0	8	0	4	0	0	65	10	0	4	42	0	133	0
5:00 PM		0	0	0	0	0	9	0	5	0	0	87	18	0	0	52	0	171	0
5:15 PM		0	0	0	0	0	11	0	2	0	0	89	15	0	3	54	0	174	617
Peak Hour	All	0	0	0	0	0	41	0	13	0	0	304	56	0	12	191	0	617	0
	HV	0	0	0	0	0	0	0	2	0	0	2	0	0	1	7	0	12	0
	HV%	-	-	-	-	-	0%	-	15%	-	-	1%	0%	-	8%	4%	-	2%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:30 PM	0	0	0	3	*3*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	0	1	2	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	0	1	0	2	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	0	0	0	3	*3*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	0	2	2	8	*12*	0	0	0	0	*0*	0	0	0	0	*0*

Four-Hour Count Summaries

Interval Start	0				Alfalfa Rd				S Powell Butte Hwy				S Powell Butte Hwy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	0	0	0	8	0	3	0	0	42	9	0	1	40	0	103	0
2:15 PM	0	0	0	0	0	8	0	4	0	0	49	9	0	2	40	0	112	0
2:30 PM	0	0	0	0	0	6	0	5	0	0	43	5	0	2	46	0	107	0
2:45 PM	0	0	0	0	0	7	0	1	0	0	42	5	0	3	45	0	103	425
3:00 PM	0	0	0	0	0	10	0	5	0	0	54	10	0	3	37	0	119	441
3:15 PM	0	0	0	0	0	14	0	2	0	0	45	5	0	3	53	0	122	451
3:30 PM	0	0	0	0	0	12	0	8	0	0	58	10	0	3	58	0	149	493
3:45 PM	0	0	0	0	0	13	0	4	0	0	76	9	0	2	54	0	158	548
4:00 PM	0	0	0	0	0	11	0	2	0	0	82	8	0	0	45	0	148	577
4:15 PM	0	0	0	0	0	11	0	4	0	0	68	10	0	2	52	0	147	602
4:30 PM	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**2**	**0**	**0**	**63**	**13**	**0**	**5**	**43**	**0**	**139**	592
4:45 PM	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**4**	**0**	**0**	**65**	**10**	**0**	**4**	**42**	**0**	**133**	567
5:00 PM	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**5**	**0**	**0**	**87**	**18**	**0**	**0**	**52**	**0**	**171**	590
5:15 PM	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**2**	**0**	**0**	**89**	**15**	**0**	**3**	**54**	**0**	**174**	**617**
5:30 PM	0	0	0	0	0	9	0	3	0	0	84	10	0	0	32	0	138	616
5:45 PM	0	0	0	0	0	7	0	3	0	0	56	9	0	1	41	0	117	600
Count Total	0	0	0	0	0	157	0	57	0	0	1,003	155	0	34	734	0	2,140	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**41**	**0**	**13**	**0**	**0**	**304**	**56**	**0**	**12**	**191**	**0**	**617**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**1**	**7**	**0**	**12**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**15%**	**-**	**-**	**1%**	**0%**	**-**	**8%**	**4%**	**-**	**2%**	**0**

Note: Four-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:00 PM	0	1	2	6	*9*	0	0	0	0	*0*	0	0	0	0	*0*
2:15 PM	0	0	3	1	*4*	0	0	0	0	*0*	0	0	0	0	*0*
2:30 PM	0	2	0	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
2:45 PM	0	0	2	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
3:00 PM	0	1	3	2	*6*	0	0	0	0	*0*	0	0	0	0	*0*
3:15 PM	0	1	1	6	*8*	0	0	0	0	*0*	0	0	0	0	*0*
3:30 PM	0	2	2	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
3:45 PM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
4:00 PM	0	0	2	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	0	4	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**1**	**2**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**1**	**0**	**2**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:30 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	0	2	*2*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	9	24	28	*61*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**0**	**2**	**2**	**8**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

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Four-Hour Count Summaries - Heavy Vehicles

Interval Start	0				Alfalfa Rd				S Powell Butte Hwy				S Powell Butte Hwy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	6	0	9	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	0	4	0
2:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	3	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	3	19
3:00 PM	0	0	0	0	0	0	0	1	0	0	3	0	0	0	2	0	6	16
3:15 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	6	0	8	20
3:30 PM	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4	21
3:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	20
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	17
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	13
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**3**	12
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	13
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	13
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	**12**
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	10
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	9
Count Total	0	0	0	0	0	2	0	7	0	0	22	2	0	1	27	0	61	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**1**	**7**	**0**	**12**	**0**

Four-Hour Count Summaries - Bikes

Interval Start	0			Alfalfa Rd			S Powell Butte Hwy			S Powell Butte Hwy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Location: SW George Millican Rd S/O Tom McCall Rd
Date Range: 9/28/2023 - 10/4/2023
Site Code: 03

Time	Thursday 9/28/2023			Friday 9/29/2023			Saturday 9/30/2023			Sunday 10/1/2023			Monday 10/2/2023			Tuesday 10/3/2023			Wednesday 10/4/2023			Mid-Week Average		
	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	2	8	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	8	10
1:00 AM	2	7	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	7	9
2:00 AM	15	5	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	5	20
3:00 AM	16	12	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	12	28
4:00 AM	14	**58**	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	**58**	72
5:00 AM	11	25	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	25	36
6:00 AM	21	45	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	45	66
7:00 AM	51	38	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	38	89
8:00 AM	46	49	95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	49	95
9:00 AM	41	50	91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	50	91
10:00 AM	50	51	101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	51	101
11:00 AM	**58**	48	**106**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**58**	48	**106**
12:00 PM	43	39	82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	39	82
1:00 PM	47	37	84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47	37	84
2:00 PM	57	50	107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	50	107
3:00 PM	**104**	45	**149**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**104**	45	**149**
4:00 PM	61	**70**	131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	**70**	131
5:00 PM	34	40	74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	40	74
6:00 PM	28	23	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	23	51
7:00 PM	35	16	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	16	51
8:00 PM	17	11	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	11	28
9:00 PM	8	7	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	7	15
10:00 PM	13	5	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	5	18
11:00 PM	3	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	8
Total	**777**	**744**	**1,521**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**777**	**744**	**1,521**
Percent	**51%**	**49%**		-	-		-	-		-	-		-	-		-	-		-	-		**51%**	**49%**	
AM Peak	11:00	04:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	04:00	11:00
Vol.	58	58	106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58	58	106
PM Peak	15:00	16:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	16:00	15:00
Vol.	104	70	149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	70	149

1. Mid-week average includes data between Tuesday and Thursday.

Kyle Campbell: 425-213-7345
kyle.campbell@idaxdata.com

Location: SW Powell Butte Hwy N/O SW Bussett Rd
Date Range: 9/28/2023 - 10/4/2023
Site Code: 02

Time	Thursday 9/28/2023			Friday 9/29/2023			Saturday 9/30/2023			Sunday 10/1/2023			Monday 10/2/2023			Tuesday 10/3/2023			Wednesday 10/4/2023			Mid-Week Average		
	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	11	0	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	0	11
1:00 AM	4	3	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3	7
2:00 AM	8	2	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	2	10
3:00 AM	11	14	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	14	25
4:00 AM	19	39	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	39	58
5:00 AM	69	110	179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	110	179
6:00 AM	137	263	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	263	400
7:00 AM	**204**	**350**	**554**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**204**	**350**	**554**
8:00 AM	153	257	410	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153	257	410
9:00 AM	167	241	408	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	167	241	408
10:00 AM	153	201	354	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153	201	354
11:00 AM	164	195	359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	164	195	359
12:00 PM	199	189	388	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	199	189	388
1:00 PM	208	196	404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	208	196	404
2:00 PM	233	237	470	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	233	237	470
3:00 PM	312	**265**	577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	**265**	577
4:00 PM	349	252	**601**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	349	252	**601**
5:00 PM	**368**	232	600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**368**	232	600
6:00 PM	163	130	293	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	163	130	293
7:00 PM	100	100	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	100	200
8:00 PM	57	46	103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	46	103
9:00 PM	34	30	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	30	64
10:00 PM	32	18	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	18	50
11:00 PM	21	9	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	9	30
Total	**3,176**	**3,379**	**6,555**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,176**	**3,379**	**6,555**
Percent	**48%**	**52%**		-	-		-	-		-	-		-	-		-	-		-	-		**48%**	**52%**	
AM Peak	07:00	07:00	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	07:00	07:00
Vol.	204	350	554	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	204	350	554
PM Peak	17:00	15:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	15:00	16:00
Vol.	368	265	601	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	368	265	601

1. Mid-week average includes data between Tuesday and Thursday.

Kyle Campbell: 425-213-7345
kyle.campbell@idaxdata.com

Location: S Powell Butte Hwy N/O Alfalfa Rd
Date Range: 9/28/2023 - 10/4/2023
Site Code: 01

Time	Thursday 9/28/2023			Friday 9/29/2023			Saturday 9/30/2023			Sunday 10/1/2023			Monday 10/2/2023			Tuesday 10/3/2023			Wednesday 10/4/2023			Mid-Week Average		
	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	10	1	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	1	11
1:00 AM	4	3	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3	7
2:00 AM	9	2	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	2	11
3:00 AM	9	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	11	20
4:00 AM	13	35	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	35	48
5:00 AM	63	109	172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	109	172
6:00 AM	103	221	324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	103	221	324
7:00 AM	**137**	**305**	**442**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**137**	**305**	**442**
8:00 AM	98	206	304	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	206	304
9:00 AM	123	197	320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123	197	320
10:00 AM	101	156	257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	101	156	257
11:00 AM	102	145	247	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	102	145	247
12:00 PM	146	142	288	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146	142	288
1:00 PM	158	153	311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	153	311
2:00 PM	185	176	361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	185	176	361
3:00 PM	256	**211**	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256	**211**	467
4:00 PM	292	192	484	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	292	192	484
5:00 PM	**325**	185	**510**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**325**	185	**510**
6:00 PM	146	93	239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146	93	239
7:00 PM	98	70	168	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	70	168
8:00 PM	51	36	87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	36	87
9:00 PM	35	19	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	19	54
10:00 PM	23	10	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	10	33
11:00 PM	21	1	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	1	22
Total	**2,508**	**2,679**	**5,187**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,508**	**2,679**	**5,187**
Percent	**48%**	**52%**		-	-		-	-		-	-		-	-		-	-		-	-		**48%**	**52%**	
AM Peak	07:00	07:00	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	07:00	07:00
Vol.	137	305	442	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	305	442
PM Peak	17:00	15:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	15:00	17:00
Vol.	325	211	510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	325	211	510

1. Mid-week average includes data between Tuesday and Thursday.

Kyle Campbell: 425-213-7345
kyle.campbell@idaxdata.com

Location: SE Juniper Canyon Rd S/O SE Paulina Hwy
Date Range: 9/28/2023 - 10/4/2023
Site Code: 04

Time	Thursday 9/28/2023			Friday 9/29/2023			Saturday 9/30/2023			Sunday 10/1/2023			Monday 10/2/2023			Tuesday 10/3/2023			Wednesday 10/4/2023			Mid-Week Average		
	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	6	13	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	13	19
1:00 AM	4	6	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	6	10
2:00 AM	8	10	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	10	18
3:00 AM	23	4	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	4	27
4:00 AM	83	10	93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83	10	93
5:00 AM	176	12	188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	176	12	188
6:00 AM	264	44	308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	264	44	308
7:00 AM	**349**	77	426	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**349**	77	426
8:00 AM	289	116	405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	289	116	405
9:00 AM	274	162	436	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	274	162	436
10:00 AM	244	173	417	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	244	173	417
11:00 AM	241	**206**	**447**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	241	**206**	**447**
12:00 PM	210	234	444	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	210	234	444
1:00 PM	**242**	250	492	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**242**	250	492
2:00 PM	210	285	495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	210	285	495
3:00 PM	230	342	572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	230	342	572
4:00 PM	226	399	**625**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	226	399	**625**
5:00 PM	172	**401**	573	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	172	**401**	573
6:00 PM	116	296	412	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	116	296	412
7:00 PM	75	187	262	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75	187	262
8:00 PM	47	141	188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47	141	188
9:00 PM	33	60	93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	60	93
10:00 PM	9	41	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	41	50
11:00 PM	6	22	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	22	28
Total	**3,537**	**3,491**	**7,028**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,537**	**3,491**	**7,028**
Percent	**50%**	**50%**		-	-		-	-		-	-		-	-		-	-		-	-		**50%**	**50%**	
AM Peak	07:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	11:00	11:00
Vol.	349	206	447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	349	206	447
PM Peak	13:00	17:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13:00	17:00	16:00
Vol.	242	401	625	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	242	401	625

1. Mid-week average includes data between Tuesday and Thursday.

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Attachment B

Synchro Reports

Intersection	
Int Delay, s/veh	21.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	570	70	195	515	5	90	5	250	5	5	5
Future Vol, veh/h	5	570	70	195	515	5	90	5	250	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	300	300	-	-	-	-	230	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	3	2	1	5	0	1	0	6	0	0	0
Mvmt Flow	5	588	72	201	531	5	93	5	258	5	5	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	536	0	0	660	0	0	1539	1536	588	1702	1606	534
Stage 1	-	-	-	-	-	-	598	598	-	936	936	-
Stage 2	-	-	-	-	-	-	941	938	-	766	670	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.11	6.5	6.26	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.509	4	3.354	3.5	4	3.3
Pot Cap-1 Maneuver	1042	-	-	933	-	-	95	117	501	73	106	550
Stage 1	-	-	-	-	-	-	491	494	-	321	346	-
Stage 2	-	-	-	-	-	-	317	346	-	398	459	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1042	-	-	933	-	-	~ 74	91	501	28	83	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 74	91	-	28	83	-
Stage 1	-	-	-	-	-	-	487	490	-	318	272	-
Stage 2	-	-	-	-	-	-	242	272	-	190	455	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.7	97.7	83
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	75	501	1042	-	-	933	-	-	61
HCM Lane V/C Ratio	1.306	0.514	0.005	-	-	0.215	-	-	0.254
HCM Control Delay (s)	$ 303.3	19.6	8.5	0	-	9.9	-	-	83
HCM Lane LOS	F	C	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	7.7	2.9	0	-	-	0.8	-	-	0.9

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

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	50	735	5	5	625	10	5	5	5	5	5	55
Future Vol, veh/h	50	735	5	5	625	10	5	5	5	5	5	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	4	50	0	4	0	0	0	25	0	0	0
Mvmt Flow	51	750	5	5	638	10	5	5	5	5	5	56

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	648	0	0	755	0	0	1539	1513	753	1513	1510	643
Stage 1	-	-	-	-	-	-	855	855	-	653	653	-
Stage 2	-	-	-	-	-	-	684	658	-	860	857	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.45	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	2.218	-	-	2.2	-	-	3.5	4	3.525	3.5	4	3.3
Pot Cap-1 Maneuver	938	-	-	865	-	-	95	121	375	99	122	477
Stage 1	-	-	-	-	-	-	356	378	-	460	467	-
Stage 2	-	-	-	-	-	-	442	464	-	353	377	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	938	-	-	865	-	-	75	109	375	87	110	477
Mov Cap-2 Maneuver	-	-	-	-	-	-	75	109	-	87	110	-
Stage 1	-	-	-	-	-	-	323	342	-	417	463	-
Stage 2	-	-	-	-	-	-	382	460	-	311	342	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	38.6	20.5
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	89	375	938	-	-	865	-	-	298
HCM Lane V/C Ratio	0.115	0.014	0.054	-	-	0.006	-	-	0.223
HCM Control Delay (s)	50.6	14.7	9.1	0	-	9.2	0	-	20.5
HCM Lane LOS	F	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0	0.2	-	-	0	-	-	0.8

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	745	600	5	5	15
Future Vol, veh/h	5	745	600	5	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	4	4	0	0	13
Mvmt Flow	5	776	625	5	5	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	630	0	-	0	1414	628
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	786	-
Critical Hdwy	4.1	-	-	-	6.4	6.33
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.417
Pot Cap-1 Maneuver	962	-	-	-	153	464
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	453	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	962	-	-	-	152	464
Mov Cap-2 Maneuver	-	-	-	-	152	-
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	453	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	17.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	962	-	-	-	307
HCM Lane V/C Ratio	0.005	-	-	-	0.068
HCM Control Delay (s)	8.8	0	-	-	17.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	285	20	0	215
Future Vol, veh/h	5	0	285	20	0	215
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	4	5	0	0
Mvmt Flow	6	0	331	23	0	250

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	593	343	0	0	354	0
Stage 1	343	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	472	704	-	-	1216	-
Stage 1	723	-	-	-	-	-
Stage 2	796	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	472	704	-	-	1216	-
Mov Cap-2 Maneuver	472	-	-	-	-	-
Stage 1	723	-	-	-	-	-
Stage 2	796	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	472	1216	-
HCM Lane V/C Ratio	-	-	0.012	-	-
HCM Control Delay (s)	-	-	12.7	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	20	295	40	5	215
Future Vol, veh/h	50	20	295	40	5	215
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	200	180	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	11	4	0	0	0
Mvmt Flow	53	21	311	42	5	226

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	547	311	0	0	353	0
Stage 1	311	-	-	-	-	-
Stage 2	236	-	-	-	-	-
Critical Hdwy	6.4	6.31	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.399	-	-	2.2	-
Pot Cap-1 Maneuver	502	709	-	-	1217	-
Stage 1	748	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	500	709	-	-	1217	-
Mov Cap-2 Maneuver	500	-	-	-	-	-
Stage 1	748	-	-	-	-	-
Stage 2	805	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	500	709	1217	-
HCM Lane V/C Ratio	-	-	0.105	0.03	0.004	-
HCM Control Delay (s)	-	-	13	10.2	8	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	0	-

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	5	40	410	5	60	215	5
Future Vol, veh/h	5	40	410	5	60	215	5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	3	3	0	9	3	0
Mvmt Flow	5	42	427	5	63	224	5
Number of Lanes	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.2	8.8	11.1
HCM LOS	B	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1
Vol Left, %	98%	0%	0%	8%
Vol Thru, %	0%	100%	0%	92%
Vol Right, %	2%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	220	45	410	65
LT Vol	215	0	0	5
Through Vol	0	45	0	60
RT Vol	5	0	410	0
Lane Flow Rate	229	47	427	68
Geometry Grp	2	7	7	5
Degree of Util (X)	0.339	0.068	0.54	0.097
Departure Headway (Hd)	5.32	5.202	4.548	5.17
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	671	687	790	687
Service Time	3.388	2.949	2.295	3.245
HCM Lane V/C Ratio	0.341	0.068	0.541	0.099
HCM Control Delay	11.1	8.3	12.6	8.8
HCM Lane LOS	B	A	B	A
HCM 95th-tile Q	1.5	0.2	3.3	0.3

Intersection	
Int Delay, s/veh	510.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	760	280	255	685	5	285	5	325	5	5	5
Future Vol, veh/h	5	760	280	255	685	5	285	5	325	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	300	300	-	-	-	-	230	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	3	2	1	5	0	1	0	6	0	0	0
Mvmt Flow	5	760	280	255	685	5	285	5	325	5	5	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	690	0	0	1040	0	0	1973	1970	760	2273	2248	688
Stage 1	-	-	-	-	-	-	770	770	-	1198	1198	-
Stage 2	-	-	-	-	-	-	1203	1200	-	1075	1050	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.11	6.5	6.26	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.509	4	3.354	3.5	4	3.3
Pot Cap-1 Maneuver	914	-	-	672	-	-	~ 47	63	399	29	42	450
Stage 1	-	-	-	-	-	-	395	413	-	229	261	-
Stage 2	-	-	-	-	-	-	~ 226	261	-	268	307	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	914	-	-	672	-	-	~ 28	39	399	~ 3	26	450
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 28	39	-	~ 3	26	-
Stage 1	-	-	-	-	-	-	389	407	-	226	162	-
Stage 2	-	-	-	-	-	-	~ 134	162	-	48	303	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.7	$ 2136.4	$ 1298.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	28	399	914	-	-	672	-	-	8
HCM Lane V/C Ratio	10.357	0.815	0.005	-	-	0.379	-	-	1.875
HCM Control Delay (s)	$ 4482.1	43.3	9	0	-	13.6	-	-	$ 1298.8
HCM Lane LOS	F	E	A	A	-	B	-	-	F
HCM 95th %tile Q(veh)	35.8	7.3	0	-	-	1.8	-	-	2.8

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

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	65	975	5	5	830	5	5	5	5	5	5	70
Future Vol, veh/h	65	975	5	5	830	5	5	5	5	5	5	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	4	50	0	4	0	0	0	25	0	0	0
Mvmt Flow	65	975	5	5	830	5	5	5	5	5	5	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	835	0	0	980	0	0	1988	1953	978	1956	1953	833
Stage 1	-	-	-	-	-	-	1108	1108	-	843	843	-
Stage 2	-	-	-	-	-	-	880	845	-	1113	1110	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.45	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	2.218	-	-	2.2	-	-	3.5	4	3.525	3.5	4	3.3
Pot Cap-1 Maneuver	798	-	-	712	-	-	46	65	275	49	65	372
Stage 1	-	-	-	-	-	-	257	288	-	361	382	-
Stage 2	-	-	-	-	-	-	345	382	-	255	287	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	798	-	-	712	-	-	30	53	275	38	53	372
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	53	-	38	53	-
Stage 1	-	-	-	-	-	-	211	236	-	296	377	-
Stage 2	-	-	-	-	-	-	273	377	-	201	236	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	93.2	36.3
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	38	275	798	-	-	712	-	-	193
HCM Lane V/C Ratio	0.263	0.018	0.081	-	-	0.007	-	-	0.415
HCM Control Delay (s)	130.7	18.3	9.9	0	-	10.1	0	-	36.3
HCM Lane LOS	F	C	A	A	-	B	A	-	E
HCM 95th %tile Q(veh)	0.9	0.1	0.3	-	-	0	-	-	1.9

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	985	795	5	5	5
Future Vol, veh/h	5	985	795	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	4	4	0	0	13
Mvmt Flow	5	985	795	5	5	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	800	0	-	0	1793	798
Stage 1	-	-	-	-	798	-
Stage 2	-	-	-	-	995	-
Critical Hdwy	4.1	-	-	-	6.4	6.33
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.417
Pot Cap-1 Maneuver	832	-	-	-	90	369
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	361	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	832	-	-	-	89	369
Mov Cap-2 Maneuver	-	-	-	-	89	-
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	361	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	32.1
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	832	-	-	-	143
HCM Lane V/C Ratio	0.006	-	-	-	0.07
HCM Control Delay (s)	9.4	0	-	-	32.1
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	485	25	0	410
Future Vol, veh/h	5	0	485	25	0	410
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	4	5	0	0
Mvmt Flow	5	0	485	25	0	410

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	908	498	0	0	510	0
Stage 1	498	-	-	-	-	-
Stage 2	410	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	308	576	-	-	1065	-
Stage 1	615	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	308	576	-	-	1065	-
Mov Cap-2 Maneuver	308	-	-	-	-	-
Stage 1	615	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	308	1065	-
HCM Lane V/C Ratio	-	-	0.016	-	-
HCM Control Delay (s)	-	-	16.9	0	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	95	130	395	80	125	290
Future Vol, veh/h	95	130	395	80	125	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	200	180	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	11	4	0	0	0
Mvmt Flow	95	130	395	80	125	290

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	935	395	0	0	475	0
Stage 1	395	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Critical Hdwy	6.4	6.31	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.399	-	-	2.2	-
Pot Cap-1 Maneuver	297	635	-	-	1098	-
Stage 1	685	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	263	635	-	-	1098	-
Mov Cap-2 Maneuver	263	-	-	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	521	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.1	0	2.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	263	635	1098	-
HCM Lane V/C Ratio	-	-	0.361	0.205	0.114	-
HCM Control Delay (s)	-	-	26.2	12.1	8.7	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	1.6	0.8	0.4	-

Intersection	
Intersection Delay, s/veh	35.6
Intersection LOS	E

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	5	65	675	5	100	355	5
Future Vol, veh/h	5	65	675	5	100	355	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	3	3	0	9	3	0
Mvmt Flow	5	65	675	5	100	355	5
Number of Lanes	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	47.2	10.7	19
HCM LOS	E	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1
Vol Left, %	99%	0%	0%	5%
Vol Thru, %	0%	100%	0%	95%
Vol Right, %	1%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	360	70	675	105
LT Vol	355	0	0	5
Through Vol	0	70	0	100
RT Vol	5	0	675	0
Lane Flow Rate	360	70	675	105
Geometry Grp	2	7	7	5
Degree of Util (X)	0.622	0.114	0.977	0.182
Departure Headway (Hd)	6.222	5.868	5.21	6.252
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	580	610	695	571
Service Time	4.271	3.614	2.956	4.323
HCM Lane V/C Ratio	0.621	0.115	0.971	0.184
HCM Control Delay	19	9.4	51.1	10.7
HCM Lane LOS	C	A	F	B
HCM 95th-tile Q	4.3	0.4	14.9	0.7

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	5	1115	280	415	895	5	285	5	595	5	5	5
Future Vol, veh/h	5	1115	280	415	895	5	285	5	595	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	300	300	-	-	-	-	230	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	3	2	1	5	0	1	0	6	0	0	0
Mvmt Flow	5	1115	280	415	895	5	285	5	595	5	5	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	900	0	0	1395	0	0	2858	2855	1115	3293	3133	898
Stage 1	-	-	-	-	-	-	1125	1125	-	1728	1728	-
Stage 2	-	-	-	-	-	-	1733	1730	-	1565	1405	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.11	6.5	6.26	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.509	4	3.354	3.5	4	3.3
Pot Cap-1 Maneuver	763	-	-	493	-	-	~ 11	17	~ 248	5	11	341
Stage 1	-	-	-	-	-	-	~ 250	283	-	114	144	-
Stage 2	-	-	-	-	-	-	~ 112	144	-	141	208	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	763	-	-	493	-	-	-	~ 3	~ 248	-	~ 2	341
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 3	-	-	~ 2	-
Stage 1	-	-	-	-	-	-	~ 242	273	-	110	23	-
Stage 2	-	-	-	-	-	-	~ 14	23	-	-	201	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	12.7		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	248	763	-	-	493	-	-	-
HCM Lane V/C Ratio	-	2.399	0.007	-	-	0.842	-	-	-
HCM Control Delay (s)	-$	673.1	9.7	0	-	40.2	-	-	-
HCM Lane LOS	-	F	A	A	-	E	-	-	-
HCM 95th %tile Q(veh)	-	48	0	-	-	8.5	-	-	-

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

Intersection	
Int Delay, s/veh	27.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	1420	5	5	1200	5	5	5	5	5	5	70
Future Vol, veh/h	65	1420	5	5	1200	5	5	5	5	5	5	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	4	50	0	4	0	0	0	25	0	0	0
Mvmt Flow	65	1420	5	5	1200	5	5	5	5	5	5	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1205	0	0	1425	0	0	2803	2768	1423	2771	2768	1203
Stage 1	-	-	-	-	-	-	1553	1553	-	1213	1213	-
Stage 2	-	-	-	-	-	-	1250	1215	-	1558	1555	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.45	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	2.218	-	-	2.2	-	-	3.5	4	3.525	3.5	4	3.3
Pot Cap-1 Maneuver	579	-	-	484	-	-	12	20	148	13	20	227
Stage 1	-	-	-	-	-	-	143	176	-	224	257	-
Stage 2	-	-	-	-	-	-	214	256	-	143	176	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	579	-	-	484	-	-	~ 3	9	148	~ 4	9	227
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 3	9	-	~ 4	9	-
Stage 1	-	-	-	-	-	-	66	81	-	103	249	-
Stage 2	-	-	-	-	-	-	141	248	-	60	81	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	$ 1200.6	$ 737.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	5	148	579	-	-	484	-	-	38
HCM Lane V/C Ratio	2	0.034	0.112	-	-	0.01	-	-	2.105
HCM Control Delay (s)	$ 1785.8	30.2	12	0	-	12.5	0	-	$ 737.8
HCM Lane LOS	F	D	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	2.3	0.1	0.4	-	-	0	-	-	8.7

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	1430	1165	5	5	5
Future Vol, veh/h	5	1430	1165	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	4	4	0	0	13
Mvmt Flow	5	1430	1165	5	5	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1170	0	-	0	2608	1168
Stage 1	-	-	-	-	1168	-
Stage 2	-	-	-	-	1440	-
Critical Hdwy	4.1	-	-	-	6.4	6.33
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.417
Pot Cap-1 Maneuver	604	-	-	-	27	224
Stage 1	-	-	-	-	298	-
Stage 2	-	-	-	-	220	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	604	-	-	-	26	224
Mov Cap-2 Maneuver	-	-	-	-	26	-
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	220	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	101.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	604	-	-	-	47
HCM Lane V/C Ratio	0.008	-	-	-	0.213
HCM Control Delay (s)	11	0	-	-	101.2
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	755	25	0	570
Future Vol, veh/h	5	0	755	25	0	570
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	4	5	0	0
Mvmt Flow	5	0	755	25	0	570

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1338	768	0	0	780	0
Stage 1	768	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	170	405	-	-	846	-
Stage 1	461	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	170	405	-	-	846	-
Mov Cap-2 Maneuver	170	-	-	-	-	-
Stage 1	461	-	-	-	-	-
Stage 2	570	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.8	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	170	846	-
HCM Lane V/C Ratio	-	-	0.029	-	-
HCM Control Delay (s)	-	-	26.8	0	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	6.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	95	130	665	80	125	445
Future Vol, veh/h	95	130	665	80	125	445
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	200	180	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	11	4	0	0	0
Mvmt Flow	95	130	665	80	125	445

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1360	665	0	0	745	0
Stage 1	665	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Critical Hdwy	6.4	6.31	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.399	-	-	2.2	-
Pot Cap-1 Maneuver	165	445	-	-	872	-
Stage 1	515	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	141	445	-	-	872	-
Mov Cap-2 Maneuver	141	-	-	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	428	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	39.7	0	2.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	141	445	872	-
HCM Lane V/C Ratio	-	-	0.674	0.292	0.143	-
HCM Control Delay (s)	-	-	71.7	16.4	9.8	-
HCM Lane LOS	-	-	F	C	A	-
HCM 95th %tile Q(veh)	-	-	3.8	1.2	0.5	-

Intersection	
Intersection Delay, s/veh	379.2
Intersection LOS	F

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	5	40	1310	5	60	745	5
Future Vol, veh/h	5	40	1310	5	60	745	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	3	3	0	9	3	0
Mvmt Flow	5	40	1310	5	60	745	5
Number of Lanes	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	516.4	13.8	163
HCM LOS	F	B	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1
Vol Left, %	99%	0%	0%	8%
Vol Thru, %	0%	100%	0%	92%
Vol Right, %	1%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	750	45	1310	65
LT Vol	745	0	0	5
Through Vol	0	45	0	60
RT Vol	5	0	1310	0
Lane Flow Rate	750	45	1310	65
Geometry Grp	2	7	7	5
Degree of Util (X)	1.269	0.082	2.139	0.128
Departure Headway (Hd)	8.178	7.204	6.538	9.382
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	450	500	576	385
Service Time	6.178	4.904	4.238	7.382
HCM Lane V/C Ratio	1.667	0.09	2.274	0.169
HCM Control Delay	163	10.5	533.8	13.8
HCM Lane LOS	F	B	F	B
HCM 95th-tile Q	23.7	0.3	83.7	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	570	70	195	515	5	90	5	250	5	5	5
Future Volume (Veh/h)	5	570	70	195	515	5	90	5	250	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	5	588	72	201	531	5	93	5	258	5	5	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									9			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	536			660			1538	1536	588	1665	1606	534
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	536			660			1538	1536	588	1665	1606	534
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			78			0	95	49	83	94	99
cM capacity (veh/h)	1042			933			75	92	501	30	83	550

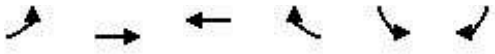
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	593	72	201	536	356	15
Volume Left	5	0	201	0	93	5
Volume Right	0	72	0	5	258	5
cSH	1042	1700	933	1700	274	64
Volume to Capacity	0.00	0.04	0.22	0.32	1.30	0.24
Queue Length 95th (ft)	0	0	20	0	443	20
Control Delay (s)	0.1	0.0	9.9	0.0	96.5	78.0
Lane LOS	A		A		F	F
Approach Delay (s)	0.1		2.7		96.5	78.0
Approach LOS					F	F

Intersection Summary				
Average Delay	21.2			
Intersection Capacity Utilization	79.6%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	735	5	5	625	10	5	5	5	5	5	55
Future Volume (Veh/h)	50	735	5	5	625	10	5	5	5	5	5	55
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	51	750	5	5	638	10	5	5	5	5	5	56
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	648			755			1566	1512	752	1515	1510	643
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	648			755			1566	1512	752	1515	1510	643
tC, single (s)	4.1			4.1			7.1	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	95			99			93	96	99	94	96	88
cM capacity (veh/h)	938			865			74	114	375	90	114	477

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	806	653	10	5	66
Volume Left	51	5	5	0	5
Volume Right	5	10	0	5	56
cSH	938	865	90	375	305
Volume to Capacity	0.05	0.01	0.11	0.01	0.22
Queue Length 95th (ft)	4	0	9	1	20
Control Delay (s)	1.4	0.2	50.0	14.7	20.1
Lane LOS	A	A	E	B	C
Approach Delay (s)	1.4	0.2	38.2		20.1
Approach LOS			E		C

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	87.7%	ICU Level of Service	E	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	745	600	5	5	15
Future Volume (Veh/h)	5	745	600	5	5	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	776	625	5	5	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	630				1414	628
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	630				1414	628
tC, single (s)	4.1				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	99				97	97
cM capacity (veh/h)	962				153	464

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	781	630	21
Volume Left	5	0	5
Volume Right	0	5	16
cSH	962	1700	312
Volume to Capacity	0.01	0.37	0.07
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.1	0.0	17.4
Lane LOS	A		C
Approach Delay (s)	0.1	0.0	17.4
Approach LOS			C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	0	285	20	0	215
Future Volume (Veh/h)	5	0	285	20	0	215
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	6	0	331	23	0	250
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	592	342			354	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	592	342			354	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	472	705			1216	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	6	354	250
Volume Left	6	0	0
Volume Right	0	23	0
cSH	472	1700	1216
Volume to Capacity	0.01	0.21	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	12.7	0.0	0.0
Lane LOS	B		
Approach Delay (s)	12.7	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	50	20	295	40	5	215
Future Volume (Veh/h)	50	20	295	40	5	215
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	53	21	311	42	5	226
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	547	311			353	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	547	311			353	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	89	97			100	
cM capacity (veh/h)	499	709			1217	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	74	311	42	5	226
Volume Left	53	0	0	5	0
Volume Right	21	0	42	0	0
cSH	697	1700	1700	1217	1700
Volume to Capacity	0.11	0.18	0.02	0.00	0.13
Queue Length 95th (ft)	9	0	0	0	0
Control Delay (s)	12.3	0.0	0.0	8.0	0.0
Lane LOS	B			A	
Approach Delay (s)	12.3	0.0		0.2	
Approach LOS	B				

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Sign Control		Stop			Stop	Stop	
Traffic Volume (vph)	5	40	410	5	60	215	5
Future Volume (vph)	5	40	410	5	60	215	5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	42	427	5	62	224	5

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total (vph)	42	427	67	229
Volume Left (vph)	0	0	5	224
Volume Right (vph)	0	427	0	5
Hadj (s)	0.05	-0.55	0.16	0.23
Departure Headway (s)	4.6	3.2	4.7	4.4
Degree Utilization, x	0.05	0.38	0.09	0.28
Capacity (veh/h)	733	1114	731	797
Control Delay (s)	7.8	8.1	8.1	9.1
Approach Delay (s)	8.1		8.1	9.1
Approach LOS	A		A	A

Intersection Summary			
Delay	8.4		
Level of Service	A		
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1115	280	415	895	5	285	5	595	5	5	5
Future Volume (Veh/h)	5	1115	280	415	895	5	285	5	595	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	1115	280	415	895	5	285	5	595	5	5	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									9			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	900			1395			2858	2855	1115	3152	3132	898
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	900			1395			2858	2855	1115	3152	3132	898
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.3
p0 queue free %	99			16			0	0	0	0	0	99
cM capacity (veh/h)	763			493			0	3	248	0	2	341

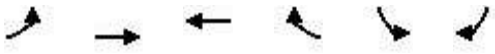
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	1120	280	415	900	885	15
Volume Left	5	0	415	0	285	5
Volume Right	0	280	0	5	595	5
cSH	763	1700	493	1700	0	0
Volume to Capacity	0.01	0.16	0.84	0.53	Err	Err
Queue Length 95th (ft)	0	0	213	0	Err	Err
Control Delay (s)	0.2	0.0	40.1	0.0	Err	Err
Lane LOS	A		E		F	F
Approach Delay (s)	0.2		12.7		Err	Err
Approach LOS					F	F

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	139.1%	ICU Level of Service	H	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	1420	5	5	1200	5	5	5	5	5	5	70
Future Volume (Veh/h)	65	1420	5	5	1200	5	5	5	5	5	5	70
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	65	1420	5	5	1200	5	5	5	5	5	5	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1205			1425			2838	2768	1422	2772	2768	1202
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1205			1425			2838	2768	1422	2772	2768	1202
tC, single (s)	4.1			4.1			7.1	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	89			99			9	71	97	42	71	69
cM capacity (veh/h)	579			484			5	17	148	9	17	227

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	1490	1210	10	5	80
Volume Left	65	5	5	0	5
Volume Right	5	5	0	5	70
cSH	579	484	8	148	68
Volume to Capacity	0.11	0.01	1.20	0.03	1.18
Queue Length 95th (ft)	9	1	51	3	158
Control Delay (s)	8.5	0.5	966.5	30.2	272.2
Lane LOS	A	A	F	D	F
Approach Delay (s)	8.5	0.5	654.4		272.2
Approach LOS			F		F

Intersection Summary				
Average Delay	16.0			
Intersection Capacity Utilization	138.2%	ICU Level of Service	H	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1430	1165	5	5	5
Future Volume (Veh/h)	5	1430	1165	5	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	1430	1165	5	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1170				2608	1168
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1170				2608	1168
tC, single (s)	4.1				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	99				82	98
cM capacity (veh/h)	604				27	224

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1435	1170	10
Volume Left	5	0	5
Volume Right	0	5	5
cSH	604	1700	49
Volume to Capacity	0.01	0.69	0.21
Queue Length 95th (ft)	1	0	17
Control Delay (s)	0.6	0.0	97.4
Lane LOS	A		F
Approach Delay (s)	0.6	0.0	97.4
Approach LOS			F

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		89.2%	ICU Level of Service E
Analysis Period (min)		15	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	0	755	25	0	570
Future Volume (Veh/h)	5	0	755	25	0	570
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	0	755	25	0	570
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1338	768			780	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1338	768			780	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			100	
cM capacity (veh/h)	171	405			846	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	5	780	570
Volume Left	5	0	0
Volume Right	0	25	0
cSH	171	1700	846
Volume to Capacity	0.03	0.46	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	26.7	0.0	0.0
Lane LOS	D		
Approach Delay (s)	26.7	0.0	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	95	130	665	80	125	445
Future Volume (Veh/h)	95	130	665	80	125	445
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	95	130	665	80	125	445
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1360	665			745	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1360	665			745	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	33	71			86	
cM capacity (veh/h)	142	445			872	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	225	665	80	125	445
Volume Left	95	0	0	125	0
Volume Right	130	0	80	0	0
cSH	335	1700	1700	872	1700
Volume to Capacity	0.67	0.39	0.05	0.14	0.26
Queue Length 95th (ft)	115	0	0	12	0
Control Delay (s)	39.5	0.0	0.0	9.8	0.0
Lane LOS	E			A	
Approach Delay (s)	39.5	0.0		2.2	
Approach LOS	E				

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Sign Control		Stop			Stop	Stop	
Traffic Volume (vph)	5	40	1310	5	60	745	5
Future Volume (vph)	5	40	1310	5	60	745	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	40	1310	5	60	745	5

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total (vph)	40	1310	65	750
Volume Left (vph)	0	0	5	745
Volume Right (vph)	0	1310	0	5
Hadj (s)	0.05	-0.55	0.16	0.25
Departure Headway (s)	5.9	3.2	6.0	4.5
Degree Utilization, x	0.07	1.16	0.11	0.93
Capacity (veh/h)	593	1137	590	791
Control Delay (s)	9.3	98.4	9.7	38.0
Approach Delay (s)	95.7		9.7	38.0
Approach LOS	F		A	E

Intersection Summary			
Delay	73.2		
Level of Service	F		
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	760	280	255	685	5	285	5	325	5	5	5
Future Volume (Veh/h)	5	760	280	255	685	5	285	5	325	5	5	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	760	280	255	685	5	285	5	325	5	5	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									9			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	690			1040			1972	1970	760	2132	2248	688
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	690			1040			1972	1970	760	2132	2248	688
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.3
p0 queue free %	99			62			0	87	19	0	81	99
cM capacity (veh/h)	914			672			28	39	399	4	26	450

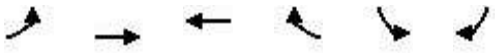
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	765	280	255	690	615	15
Volume Left	5	0	255	0	285	5
Volume Right	0	280	0	5	325	5
cSH	914	1700	672	1700	56	11
Volume to Capacity	0.01	0.16	0.38	0.41	11.05	1.36
Queue Length 95th (ft)	0	0	44	0	Err	66
Control Delay (s)	0.1	0.0	13.6	0.0	Err	864.9
Lane LOS	A		B		F	F
Approach Delay (s)	0.1		3.7		Err	864.9
Approach LOS					F	F

Intersection Summary				
Average Delay	2353.4			
Intersection Capacity Utilization	109.4%	ICU Level of Service	H	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	975	5	5	830	5	5	5	5	5	5	70
Future Volume (Veh/h)	65	975	5	5	830	5	5	5	5	5	5	70
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	65	975	5	5	830	5	5	5	5	5	5	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	835			980			2022	1952	978	1958	1952	832
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	835			980			2022	1952	978	1958	1952	832
tC, single (s)	4.1			4.1			7.1	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	92			99			84	92	98	88	92	81
cM capacity (veh/h)	798			712			31	59	275	42	59	372

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	1045	840	10	5	80
Volume Left	65	5	5	0	5
Volume Right	5	5	0	5	70
cSH	798	712	41	275	204
Volume to Capacity	0.08	0.01	0.25	0.02	0.39
Queue Length 95th (ft)	7	1	20	1	44
Control Delay (s)	2.4	0.2	120.6	18.3	33.7
Lane LOS	A	A	F	C	D
Approach Delay (s)	2.4	0.2	86.5		33.7
Approach LOS			F		D

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	113.3%	ICU Level of Service	H	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	985	795	5	5	5
Future Volume (Veh/h)	5	985	795	5	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	985	795	5	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	800				1792	798
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	800				1792	798
tC, single (s)	4.1				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	99				94	99
cM capacity (veh/h)	832				89	370

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	990	800	10
Volume Left	5	0	5
Volume Right	0	5	5
cSH	832	1700	144
Volume to Capacity	0.01	0.47	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.2	0.0	31.9
Lane LOS	A		D
Approach Delay (s)	0.2	0.0	31.9
Approach LOS			D

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	0	485	25	0	410
Future Volume (Veh/h)	5	0	485	25	0	410
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	0	485	25	0	410
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	908	498			510	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	908	498			510	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	308	577			1065	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	5	510	410
Volume Left	5	0	0
Volume Right	0	25	0
cSH	308	1700	1065
Volume to Capacity	0.02	0.30	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	16.9	0.0	0.0
Lane LOS	C		
Approach Delay (s)	16.9	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	95	130	395	80	125	290
Future Volume (Veh/h)	95	130	395	80	125	290
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	95	130	395	80	125	290
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	935	395			475	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	935	395			475	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	64	80			89	
cM capacity (veh/h)	263	635			1098	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	225	395	80	125	290
Volume Left	95	0	0	125	0
Volume Right	130	0	80	0	0
cSH	623	1700	1700	1098	1700
Volume to Capacity	0.36	0.23	0.05	0.11	0.17
Queue Length 95th (ft)	41	0	0	10	0
Control Delay (s)	18.1	0.0	0.0	8.7	0.0
Lane LOS	C			A	
Approach Delay (s)	18.1	0.0		2.6	
Approach LOS	C				

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	43.0%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Sign Control		Stop			Stop	Stop	
Traffic Volume (vph)	5	65	675	5	100	355	5
Future Volume (vph)	5	65	675	5	100	355	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	65	675	5	100	355	5

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total (vph)	65	675	105	360
Volume Left (vph)	0	0	5	355
Volume Right (vph)	0	675	0	5
Hadj (s)	0.05	-0.55	0.16	0.24
Departure Headway (s)	5.0	3.2	5.0	4.6
Degree Utilization, x	0.09	0.60	0.15	0.46
Capacity (veh/h)	662	1118	664	765
Control Delay (s)	8.5	10.9	8.9	11.4
Approach Delay (s)	10.7		8.9	11.4
Approach LOS	B		A	B

Intersection Summary			
Delay	10.7		
Level of Service	B		
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

Attachment C

McTrans Highway Capacity Software Reports

HCS Two-Lane Highway Report

Project Information

Analyst		Date	1/22/2024
Agency	Parametrix	Analysis Year	2023
Jurisdiction	SW George Millican Rd SO Tom McCall Rd - Northbound	Time Analyzed	PM Peak
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	86	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.73	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38802	PF Power Coefficient (p)	0.71639
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	45.0

Vehicle Results

Average Speed, mi/h	45.0	Percent Followers, %	21.3
Segment Travel Time, minutes	1.33	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	16	0.00	0.4	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	1/22/2024
Agency	Parametrix	Analysis Year	2023
Jurisdiction	SW George Millican Rd SO Tom McCall Rd - Southbound	Time Analyzed	PM Peak
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	96	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.76	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38802	PF Power Coefficient (p)	0.71639
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	45.0

Vehicle Results

Average Speed, mi/h	45.0	Percent Followers, %	22.8
Segment Travel Time, minutes	1.33	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	18	0.00	0.5	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	1/22/2024
Agency	Parametrix	Analysis Year	2023
Jurisdiction	SW Powell Butte Hwy NO SW Bussett Rd-Northbound	Time Analyzed	PM Peak
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	403	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	4.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33607	PF Power Coefficient (p)	0.74762
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	52.2

Vehicle Results

Average Speed, mi/h	52.2	Percent Followers, %	49.2
Segment Travel Time, minutes	1.15	Follower Density (FD), followers/mi/ln	3.8
Vehicle LOS	B		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	91	0.09	3.8	B

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	1/22/2024
Agency	Parametrix	Analysis Year	2023
Jurisdiction	SW Powell Butte Hwy NO SW Bussett Rd-Southbound	Time Analyzed	PM Peak
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	291	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	0.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33655	PF Power Coefficient (p)	0.74704
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	52.7

Vehicle Results

Average Speed, mi/h	52.7	Percent Followers, %	41.2
Segment Travel Time, minutes	1.14	Follower Density (FD), followers/mi/ln	2.3
Vehicle LOS	B		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	66	0.05	2.3	B

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	1/22/2024
Agency	Parametrix	Analysis Year	2023
Jurisdiction	S Powell Butte Hwy N/O Alfalfa Rd-Northbound	Time Analyzed	PM Peak
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	345	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	4.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38777	PF Power Coefficient (p)	0.71668
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	42.4

Vehicle Results

Average Speed, mi/h	42.4	Percent Followers, %	47.7
Segment Travel Time, minutes	1.41	Follower Density (FD), followers/mi/ln	3.9
Vehicle LOS	B		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	76	0.10	3.9	B

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	1/22/2024
Agency	Parametrix	Analysis Year	2023
Jurisdiction	S Powell Butte Hwy N/O Alfalfa Rd-Southbound	Time Analyzed	PM Peak
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	225	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.89	Total Trucks, %	0.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38828	PF Power Coefficient (p)	0.71611
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	43.1

Vehicle Results

Average Speed, mi/h	43.1	Percent Followers, %	37.9
Segment Travel Time, minutes	1.39	Follower Density (FD), followers/mi/ln	2.0
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	50	0.05	2.0	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	1/22/2024
Agency	Parametrix	Analysis Year	2023
Jurisdiction	SE Juniper Canyon Rd S/O SE Paulina Hwy - Northbound	Time Analyzed	PM Peak
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	270	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.87	Total Trucks, %	9.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38713	PF Power Coefficient (p)	0.71739
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	42.8

Vehicle Results

Average Speed, mi/h	42.8	Percent Followers, %	41.9
Segment Travel Time, minutes	1.40	Follower Density (FD), followers/mi/ln	2.6
Vehicle LOS	B		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	59	0.07	2.6	B

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	1/22/2024
Agency	Parametrix	Analysis Year	2023
Jurisdiction	SE Juniper Canyon Rd S/O SE Paulina Hwy - Southbound	Time Analyzed	PM Peak
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	428	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.97	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38790	PF Power Coefficient (p)	0.71654
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	42.1

Vehicle Results

Average Speed, mi/h	42.1	Percent Followers, %	53.0
Segment Travel Time, minutes	1.43	Follower Density (FD), followers/mi/ln	5.4
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	104	0.16	5.4	C

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	SW George Millican Rd SO Tom McCall Rd - Northbound	Time Analyzed	PM Peak - No Build
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	162	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38802	PF Power Coefficient (p)	0.71639
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	43.5

Vehicle Results

Average Speed, mi/h	43.5	Percent Followers, %	31.4
Segment Travel Time, minutes	1.38	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	41	0.03	1.2	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	SW George Millican Rd SO Tom McCall Rd - Southbound	Time Analyzed	PM Peak - No Build
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	185	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38802	PF Power Coefficient (p)	0.71639
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	43.3

Vehicle Results

Average Speed, mi/h	43.3	Percent Followers, %	33.9
Segment Travel Time, minutes	1.38	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	46	0.04	1.4	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	SW Powell Butte Hwy NO SW Bussett Rd-Northbound	Time Analyzed	PM Peak - No Build
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	617	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	4.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.36

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33607	PF Power Coefficient (p)	0.74762
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	51.5

Vehicle Results

Average Speed, mi/h	51.5	Percent Followers, %	60.6
Segment Travel Time, minutes	1.17	Follower Density (FD), followers/mi/ln	7.3
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	154	0.19	7.3	C

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	SW Powell Butte Hwy NO SW Bussett Rd-Southbound	Time Analyzed	PM Peak - No Build
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	445	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	0.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33655	PF Power Coefficient (p)	0.74704
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	52.0

Vehicle Results

Average Speed, mi/h	52.0	Percent Followers, %	51.8
Segment Travel Time, minutes	1.15	Follower Density (FD), followers/mi/ln	4.4
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	111	0.12	4.4	C

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	S Powell Butte Hwy N/O Alfalfa Rd-Northbound	Time Analyzed	PM Peak - No Build
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	545	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	4.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38777	PF Power Coefficient (p)	0.71668
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	41.7

Vehicle Results

Average Speed, mi/h	41.7	Percent Followers, %	59.3
Segment Travel Time, minutes	1.44	Follower Density (FD), followers/mi/ln	7.7
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	136	0.24	7.7	C

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	S Powell Butte Hwy N/O Alfalfa Rd-Southbound	Time Analyzed	PM Peak - No Build
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	358	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	0.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38828	PF Power Coefficient (p)	0.71611
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	42.4

Vehicle Results

Average Speed, mi/h	42.4	Percent Followers, %	48.6
Segment Travel Time, minutes	1.42	Follower Density (FD), followers/mi/ln	4.1
Vehicle LOS	B		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	90	0.12	4.1	C

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	SE Juniper Canyon Rd S/O SE Paulina Hwy - Northbound	Time Analyzed	PM Peak - No Build
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	387	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	9.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.23

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38713	PF Power Coefficient (p)	0.71739
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	42.3

Vehicle Results

Average Speed, mi/h	42.3	Percent Followers, %	50.4
Segment Travel Time, minutes	1.42	Follower Density (FD), followers/mi/ln	4.6
Vehicle LOS	B		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	97	0.14	4.6	C

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	SE Juniper Canyon Rd S/O SE Paulina Hwy - Southbound	Time Analyzed	PM Peak - No Build
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	684	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.40

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38790	PF Power Coefficient (p)	0.71654
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	41.3

Vehicle Results

Average Speed, mi/h	41.3	Percent Followers, %	65.3
Segment Travel Time, minutes	1.45	Follower Density (FD), followers/mi/ln	10.8
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	171	0.34	10.8	D

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	SW George Millican Rd SO Tom McCall Rd - Northbound	Time Analyzed	PM Peak - No Build (Juniper Canyon Higher Growth)
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	162	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38802	PF Power Coefficient (p)	0.71639
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	43.5

Vehicle Results

Average Speed, mi/h	43.5	Percent Followers, %	31.4
Segment Travel Time, minutes	1.38	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	41	0.03	1.2	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	SW George Millican Rd SO Tom McCall Rd - Southbound	Time Analyzed	PM Peak - No Build (Juniper Canyon Higher Growth)
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	185	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38802	PF Power Coefficient (p)	0.71639
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	43.3

Vehicle Results

Average Speed, mi/h	43.3	Percent Followers, %	33.9
Segment Travel Time, minutes	1.38	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	46	0.04	1.4	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	SW Powell Butte Hwy NO SW Bussett Rd-Northbound	Time Analyzed	PM Peak - No Build (Juniper Canyon Higher Growth)
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	865	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	4.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.51

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33607	PF Power Coefficient (p)	0.74762
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	50.9

Vehicle Results

Average Speed, mi/h	50.9	Percent Followers, %	69.8
Segment Travel Time, minutes	1.18	Follower Density (FD), followers/mi/ln	11.9
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	216	0.32	11.9	D

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	SW Powell Butte Hwy NO SW Bussett Rd-Southbound	Time Analyzed	PM Peak - No Build (Juniper Canyon Higher Growth)
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	625	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	0.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.37

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33655	PF Power Coefficient (p)	0.74704
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	51.5

Vehicle Results

Average Speed, mi/h	51.5	Percent Followers, %	61.0
Segment Travel Time, minutes	1.17	Follower Density (FD), followers/mi/ln	7.4
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	156	0.20	7.4	C

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	S Powell Butte Hwy N/O Alfalfa Rd-Northbound	Time Analyzed	PM Peak - No Build (Juniper Canyon Higher Growth)
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	803	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	4.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.47

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38777	PF Power Coefficient (p)	0.71668
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	41.0

Vehicle Results

Average Speed, mi/h	41.0	Percent Followers, %	69.5
Segment Travel Time, minutes	1.46	Follower Density (FD), followers/mi/ln	13.6
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	201	0.43	13.6	E

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	S Powell Butte Hwy N/O Alfalfa Rd-Southbound	Time Analyzed	PM Peak - No Build (Juniper Canyon Higher Growth)
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	528	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	0.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.31

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38828	PF Power Coefficient (p)	0.71611
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	41.8

Vehicle Results

Average Speed, mi/h	41.8	Percent Followers, %	58.5
Segment Travel Time, minutes	1.44	Follower Density (FD), followers/mi/ln	7.4
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	132	0.23	7.4	C

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	SE Juniper Canyon Rd S/O SE Paulina Hwy - Northbound	Time Analyzed	PM Peak - No Build (Juniper Canyon Higher Growth)
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	751	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	9.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.44

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38713	PF Power Coefficient (p)	0.71739
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	41.1

Vehicle Results

Average Speed, mi/h	41.1	Percent Followers, %	67.7
Segment Travel Time, minutes	1.46	Follower Density (FD), followers/mi/ln	12.4
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	188	0.39	12.4	E

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/4/2024
Agency	Parametrix	Analysis Year	2045
Jurisdiction	SE Juniper Canyon Rd S/O SE Paulina Hwy - Southbound	Time Analyzed	PM Peak - No Build (Juniper Canyon Higher Growth)
Project Description	Crook County TSP Update	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Measured FFS	Measured	Free-Flow Speed, mi/h	45.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1326	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.78

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	45.0
Speed Slope Coefficient (m)	4.62517	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38790	PF Power Coefficient (p)	0.71654
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	27.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	40.0

Vehicle Results

Average Speed, mi/h	40.0	Percent Followers, %	81.7
Segment Travel Time, minutes	1.50	Follower Density (FD), followers/mi/ln	27.1
Vehicle LOS	E		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	332	0.93	27.1	E

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Appendix B

Goals, Objectives, and Evaluation Criteria

700 NE MULTNOMAH, SUITE 1000 | PORTLAND, OR 97232 | P 503.233.2400

TECHNICAL MEMORANDUM

DATE: November 20, 2023
TO: Will VanVactor, Crook County
FROM: Erin David, Matthew Flodin, Parametrix
SUBJECT: Task 3.2: Draft Technical Memorandum 4: Goals, Objectives, and Evaluation Criteria
CC:

GOALS AND OBJECTIVES

The goals and objectives for the TSP represent desired project outcomes and transportation needs to support land use and growth envisioned for Crook County. Objectives outline the discrete elements that, taken as a whole, support and promote the goals.

Goals and objectives for Crook County reflect those established in the 2017 TSP; these were developed based on input from County staff, ODOT, and advisory committee members. However, several updates are recommended to better reflect shifting needs in the county. The recommended changes are included below, using ~~strikeout~~ text to identify deletions and <u>underline</u> text to identify additions.

Finally, this memorandum identifies updated evaluation criteria based on the revised goals and objectives. These criteria will inform future stages of the TSP process, including selection of priority projects.

GOAL 1: MOBILITY AND CONNECTIVITY

Promote a transportation system that links rural communities to key destinations in the County, Prineville, and adjacent counties, and serves existing and future needs for transporting goods and people.

Mobility and Connectivity Objectives

1.1 Identify ~~20-year~~ roadway system needs <u>through 2045</u> to accommodate developing or undeveloped areas, <u>including increasing roadway capacity where necessary.</u>

1.2 Promote transportation linkages that support local communities and regional connections by promoting an integrated system of principal highways that move people and goods throughout the county, a county road system that facilitates transportation between various areas of the county and between principal highways, and a local road system that provides access to commercial and residential areas.

1.3 Coordinate with ODOT and local communities to identify priority roadway <u>modernization</u> improvements and maintenance needs<u>, including bridge replacement.</u>

1.4 Update roadway performance standards <u>and specifications</u> to ensure efficient movement of people, goods, commodities, and commercial waste.

1.5 Update policies and standards that address street connectivity, spacing, and access management.

1.6 Balance local community and State goals for State highways that run through Crook County communities.

1.7 Support transit service to improve mobility within the county and connectivity to major destinations outside of it, including regional jobs and higher education opportunities in Bend, Prineville, and Redmond.

1.8 Prioritize ADA compliance for County facilities to increase mobility options for all persons.

GOAL 2: ECONOMIC DEVELOPMENT

Plan a transportation system that supports existing industry, ~~and~~ encourages economic development in the county, and responds to population growth in Crook County and adjacent communities.

Economic Development Objectives

2.1 Develop and promote a multimodal transportation network that supports the existing industrial, data storage, agricultural, and tourism industries and supports economic diversification in the future.

2.2 Promote railroad freight service when possible through integration of road and rail transportation and upgrade highways in areas where rail is not an option.

2.3 Prioritize improving and maintaining the key freight routes of OR 26, OR 126, and George Millican Road.

2.4 Identify roadway system needs through 2045 to accommodate developing or undeveloped areas.

2.5 Improve coordination between the private sector and the County to better integrate industrial areas with future transportation system improvements.

2.6 Encourage recreational tourism by developing connections and promoting access to major recreational locations and destinations and key services in the county, including the Ochoco National Forest, reservoirs, and trail systems.

2.7 Encourage bicycle tourism by prioritizing and improving recreational routes through the county.

2.8 Foster partnerships with government and community organizations to support economic development objectives in Crook County.

GOAL 3: SAFETY

Provide a transportation system that promotes the safety of current and future travel modes for all users.

Safety Objectives

3.1 Promote a transportation system that balances ~~the needs for~~ mobility and accessibility ~~to allow~~ while supporting ~~for~~ efficient travel on state highways and ~~that also~~ providing~~es~~ safe, livable, and vibrant multimodal corridors in the core of unincorporated communities.

3.2 Develop a multimodal transportation system that incorporates safety and operational improvements for bicyclists.

3.3 Ensure that roadways are designed, constructed, and maintained to an appropriate standard for their expected use, vehicle speeds, and vehicle traffic.

3.4 Reduce incidence and severity of crashes for all modes of travel.

3.5 Provide a transportation system that allows for adequate emergency vehicle access to all land uses.

3.6 Promote railway and highway safety at and near railway intersections.

3.7 Update County access management standards and County design standards for all county roads.

3.8 Evaluate opportunities for Intelligent Transportation Systems (ITS) to address traffic safety by providing real-time information to drivers and to enhance transportation efficiency for all modes.

3.9 Develop traffic calming guidelines to encourage appropriate rural traffic calming methods and locations.

3.10 ~~Evaluate increasing~~ Increase the number of options for reaching locations within the county to ensure a safe access point in case of natural disaster at locations where the small number of access points may present a safety hazard.

3.11 ~~especially in~~ Review the Juniper Canyon area and develop near term options for alternative emergency access.

3.12 Consider strategies to improve safe transport of farm equipment.

3.13 Consider traffic calming techniques to encourage appropriate use of local and residential roads and support the addition of pedestrian crossings along roads where appropriate.

3.14 Review Countywide safety needs with a Transportation Safety Action Plan (TSAP), including an emphasis on the Powell Butte area.

3.15 Include safety projects in Capital Improvement Plan that were identified from TSAP, community input, or staff consultation.

3.16 Review and update priorities for the OR 126 corridor, County-owned portion of the Powell Butte Highway, Millican Road, and other key parallel and connecting roads within Crook County between Redmond and Prineville to address safety, capacity, and accommodate planned tourism/recreation, population, and employment growth.

GOAL 4: MULTIMODAL USERS

Provide a multimodal transportation system that permits safe and efficient transport of people and goods through active modes, which may also provide a benefit in improved health and environment.

Multimodal Users Objectives

4.1 Promote ~~alternative~~ active modes, transit/dial-a-ride service, and rideshare/carpool programs through community awareness and education.

4.2 Promote an interconnected network of bicycle, pedestrian, and transit facilities throughout the county to facilitate access to and from schools, grocery stores, services, recreation, and tourism destinations.

~~4.3 Promote a transportation system that includes pedestrian and bicycle facilities within the unincorporated communities to promote active transportation to and from schools, grocery stores, and other services.~~

~~4.4 Promote a transportation system that includes pedestrian and bicycle connections to recreational and tourist destinations countywide.~~

4.5 Support development of regional public transit opportunities, including park-and-ride.

4.6 ~~Consider~~ Integrate bicycle and pedestrian facilities~~y needs~~ during the construction of new roads and ~~during~~ upgrades of existing roads consistent with local and state standards.

4.7 Develop ~~plan elements that guide pedestrian and bicycle pathways and facilities to achieve~~ a safe intermodal network that maximizes~~um~~ connectivity between ~~bicycle, pedestrian, transit, and vehicle~~ routes and facilities~~, securing an intermodal network of safety and access~~ for all modes of travel. ~~types of users.~~

4.8 Develop a plan that supports the Crook County Parks and Recreation Trail system plans and interfaces with the City of Prineville pedestrian and bicycle system.

4.9 Support widening shoulders for bicycle travel as part of roadway preservation and improvement projects or as separate projects.

4.10 Support efforts to improve connectivity to the Prineville and Redmond airports.

GOAL 5: ENVIRONMENT

Provide a transportation system that balances transportation services with the need to protect the environment.

Environment Objectives

5.1 Develop a multimodal transportation system that avoids reliance on single-occupancy vehicle trips ~~upon one form of transportation~~ as well as minimizes energy consumption and air quality impacts.

5.2 Promote design standards that support acquiring only the minimum ~~roadway~~ right-of-way width necessary for the roadway, including facilities for all users for the roadway classification.

5.3 Develop and upgrade transportation facilities to be consistent with the adopted Oregon Transportation Plan (OTP), the Oregon Highway Plan (OHP), and the Transportation Planning Rule (TPR) and ensure that valuable soil, water, scenic, historic, and cultural resources are preserved.

5.4 Comply with all applicable State and federal noise, air, water, and land quality regulations.

GOAL 6: PLANNING AND FUNDING

Maintain the safety, physical integrity, and function of the County's multimodal transportation network, consistent with Goal 6 of the OTP~~. Goal 6 of the OTP~~ ,which focuses on creating a transportation funding structure that serves both current and future needs.

Planning and Funding Objectives

6.1 Seek and maintain long-term funding stability for transportation maintenance projects.

6.2 Evaluate new, innovative funding sources for transportation improvements, including establishing System Development Charges (SDCs) to address development impacts to the transportation system.

6.3 Ensure that the existing transportation network is conserved and enhanced through maintenance and preservation.

6.4 Identify areas where refinement plans or interim measures would increase the life of a facility or delay the need for improvements.

6.5 Continue to enhance relationships and improve coordination among Crook County, the City of Prineville, ODOT, and the Federal Highway Administration (FHWA).

a. Cooperate with ODOT in the implementation of the Statewide Transportation Improvement Program (STIP);
b. Encourage the improvement of state highways;
c. Encourage planning coordination between the City of Prineville, Crook County, and the State by establishing cooperative road improvement programs, funding alternatives, and schedules;
d. Work with applicable jurisdictions to establish the right-of-way needed for new roads identified in the TSP;
e. Leverage federal and State highway funding programs, including the Federal Lands Access Program; and
f. Encourage ~~citizen~~ resident involvement in identifying and solving transportation issues.

6.6 Establish Capital Improvement Plan with a proposed project hierarchy, anticipated funding sources, and associated planning-level cost estimates that includes projects involving capacity adding, modernization and maintenance, safety, and bridge replacement.

6.7 Coordinate County plans with priorities and needs identified in the City of Prineville's TSP update.

GOAL 7: EQUITY

Provide access to the transportation system for all users.

Equity Objectives

7.1 Provide transportation mode choices to all users of the transportation system.

7.2 Consider the system's accessibility to those with sociodemographic characteristics that may make them less likely to rely on personal motor vehicles, including poverty status, race/ethnicity, youth populations, elderly populations, and persons with disabilities.

7.3 Consider impacts to low-income or minority populations when assessing the impacts of transportation infrastructure projects.

EVALUATION CRITERIA

Goal	Criterion	How will we measure?
Goal 1. Mobility and Connectivity	Project, policy, or program promotes a transportation system that links rural communities to key destinations in the county, Prineville, and adjacent counties and serves existing and future needs for transporting goods and people.	• Project, policy, or program improves or does not negatively impact Level of Service on County roadways (quantitative assessment). • Improvement contributes to roadway modernization or improves bridge quality. • Improvement is consistent with Crook County roadway standards and specifications. • Qualitative assessment of how improvement increases destinations served by transit, bicycle infrastructure, and pedestrian infrastructure within Crook County
Goal 2. Economic Development	Project, policy, or program contributes to a transportation system that supports existing industry, encourages economic development in the county, and addresses population growth in Crook County and adjacent communities.	• Qualitative assessment of how improvement supports existing industries and maintains resiliency for future changes. • Qualitative assessment of how improvement increases intermodal connections and fosters commerce. • Improvement aids in integration of prime industrial lots with improved roadway connections (quantitative assessment). • Improvement increases connections to recreation, tourism, and retail/business destinations (qualitative assessment).
Goal 3. Safety	Project, policy, or program contributes to a transportation system that promotes the safety of current and future travel modes for all users.	• Improvement addresses safety issues at location with safety and crash history (qualitative assessment). • Project, policy, or program improves or does not negatively impact emergency vehicle access to communities and community destinations (qualitative assessment).
Goal 4. Multimodal Users	Project, policy, or program contributes to a multimodal transportation system that enables safe and efficient transport of people and goods through active modes.	• Improvement contributes to pedestrian, bicycle, and transit network connectivity (qualitative assessment). • Improvement increases comfort and safety (actual and perceived) for people

Goal	Criterion	How will we measure?
		walking, using an assistive mobility device, or bicycling.
Goal 5. Environment	Project, policy, or program contributes to a transportation system that balances transportation services with the need to protect the environment.	• Improvement increases transportation options and decreases reliance on single occupancy vehicle trips (qualitative assessment). • Improvement contributes to a transportation system that minimizes energy consumption and negative air quality impacts. • Improvement contributes to a transportation system that aligns with State and federal noise, air, water, and land quality regulations.
Goal 6. Planning and Funding	Project, policy, or program maintains the safety, physical integrity, and function of the County's multimodal transportation network, consistent with Goal 6 of the OTP which focuses on creating a transportation funding structure that serves both current and future needs.	• Qualitative assessment of long-term funding stability for transportation maintenance and new infrastructure projects • Improvement provides high benefits relative to costs (cost/benefit assessment). • Improvement would likely be eligible for one or more grant programs, or other innovative funding sources for transportation improvements. • Improvement supports preservation or maintenance of the existing system.
Goal 7. Equity	Project, policy, or program increases mobility and access for all users.	• Improvement increases mobility or access for historically underserved people groups who are less likely to own a car. • Project, plan, or policy mitigates or avoids negative transportation impacts to low income and historically marginalized populations.

Appendix C

Solutions, Analysis, and Funding Program

Final TM#4: Solutions Analysis and Funding Program

Prepared for

Will VanVactor, Crook County
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December 2024

Citation

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ATTACHMENTS

A Traffic Analysis Results

1. Introduction

This report identifies and evaluates transportation alternatives for the Crook County Transportation System Plan (TSP) Update. Alternatives consist of transportation improvement projects, strategies, and potential programs to address transportation needs and opportunities in the County. Draft alternatives were evaluated against multiple criteria including TSP goals and objectives and a technical analysis of benefits and trade-offs. This memorandum has been prepared under the supervision of Emily Welter, registered Professional Engineer (PE) in Oregon.

The alternatives analysis considered options for all transportation modes in the county, including driving, biking, walking, transit, and freight. These alternatives include investments that can be made to the County's transportation system, such as physical improvements to roads and crossings, strategies for managing traffic, and boosting transit service. Where applicable, projects proposed in the 2017 TSP are brought forward and updated as needed to reflect needs and opportunities identified through this plan.

2. Needs and Issues Summary

A summary of the County's current transportation system and needs is provided below.

2.1 Streets

- **Roadway Ownership.** Multiple jurisdictions own and manage the public access roadway system within Crook County: the Oregon Department of Transportation (ODOT), the County, the U.S. Forest Service, the Bureau of Land Management, and private entities. State roadways include US Route 26 (US 26), Oregon Highway 126 (OR 126), OR 370, OR 380, and OR 27, which provide statewide and regional connections to Crook County.
- **Freight.** Freight is primarily moved by truck and rail. The Prineville Freight Depot and Prineville/Crook County Airport both support intermodal connections, and US 26 (west of Prineville) and OR 126 both serve as designated state freight routes. US 26 and OR 126 are also reduction review routes.
- **Additional Considerations.** Most routes throughout Crook County are two-lane roadways with limited shoulders. Public feedback indicated that in some locations, such as along OR 126, the constrained space increases safety concerns regarding turning movements and further limits options for people walking or biking.

2.2 Traffic Operations

- **Mobility Targets – Current Conditions.** The volume-to-capacity (V/C) ratio (a standard measure of congestion) under current conditions at SW Powell Butte Highway and Ochoco Highway/OR 126 exceeds the state's mobility target. The other study intersections do not exceed the mobility target.
- **Mobility Targets – Future Conditions.** Two growth scenarios were analyzed to evaluate future conditions. In the No Build scenario, two of the six study intersections exceed their mobility targets. However, in the higher growth scenario, five of the six intersections exceed their mobility targets:

Table 1. Year 2045 No Build (Juniper Canyon Higher Growth) Traffic Operations – V/C Ratio, Delay, and LOS

		Mainline				Side Street			
ID	Intersection	V/C ratio	Delay (sec)	LOS	Exceeds Mobility?	V/C ratio	Delay (sec)	LOS	Exceeds Mobility?
4	SW Powell Butte Highway & Ochoco Highway/OR 126	0.84	40	E	Yes	2.40*	> 600	F	Yes
5	SW Williams Road & Ochoco Highway/OR 126	0.95	13	B	Yes	2.11	> 600	F	Yes
6	SW Parrish Lane & Ochoco Highway/OR 126	0.85	11	B	Yes	0.21	101	F	No
9	S Powell Butte Highway & Alfalfa Road	0.14	10	A	No	0.67	72	F	Yes
10	SE Juniper Canyon Road & SE Paulina Highway/OR 380	2.27	534	F	Yes	1.67	163	F	Yes

LOS = level of service; sec = seconds; V/C = volume to capacity

* The volume along the northbound approach exceeds the capacity, resulting in an error for the northbound left-turn lane. The 2.40 v/c ratio is for the northbound right-turn lane.

- **Two-Lane Capacity Analysis.** Four state highway segments—all two-lane roadways—were analyzed for existing and future capacity. All four highway segments currently operate at LOS C or better. In the future No Build scenario, all segments, except for SW George Millican Road south of Tom McCall Road, are expected to operate at a reduced LOS. SW Powell Butte Highway both north of SW Bussett Road and north of Alfalfa Road operate at LOS C, while SE Juniper Canyon Road south of SE Paulina Highway is expected to operate at LOS E.
- **Public Feedback.** Public feedback received during the first engagement milestone reflected a desire for improved access to the Juniper Canyon area, including additional routes to alleviate reliance on SE Juniper Canyon Road. Public feedback also reflected a desire for improved operations at the intersection of SW Powell Butte Highway and OR 126.

2.3 Active Transportation

- **Pedestrian Facilities.** No sidewalks exist in unincorporated Crook County. Connections to pedestrian generators, such as Juniper Pantry, Powell Butte Elementary School, and Paulina Elementary School, require travel along the roadway or shoulder, if available.
- **Bicycle Facilities.** People traveling by bicycle ride in the travel lane or shoulders, when available, throughout the county. Strava data analyzed in the previous TSP revealed that OR 27, US 26 (east of Prineville), McKay Creek Road, OR 370, Lamonta Road, Alfalfa Road, Shumway Road, and parts of Houston Lake Road are all popular roadways for bicyclists. Many of these—including Alfalfa Road, Shumway Road, and OR 27—do not have paved shoulders.

2.4 Public Transportation

- **Public Transit.** Transit service is provided on weekdays through one fixed route that connects Prineville to Redmond; there is one stop in Powell Butte at a church that serves as a park and ride. Vehicles provide bike racks for multimodal integration. Dial-a-ride service is available on weekdays in some areas of the county.

2.5 Safety Concerns and Deficiencies

- **Crash Summary.** Between 2017 and 2021, 732 crashes resulted in 17 fatalities and 54 serious injuries. Approximately 1% of crashes involved someone walking or biking. General countywide crash trends indicate a high frequency of fixed-object and rear-end crashes. Speed and inattention are the top two contributing factors for crashes. Fatal and serious injury crashes occurred most frequently in the western portion of the county, clustered in North Prineville and along OR 126 and Juniper Canyon Road.
- **Segment Analysis.** A segment safety analysis was completed on six corridors: OR 126, Powell Butte Highway, US 26, OR 370, OR 380, and Juniper Canyon Road. None of these five corridors exceeded the statewide crash rate.
- **Locations for Further Review.** Ten intersections were studied as part of the safety analysis. One of the 10 intersections—SW Powell Butte Highway and SW Bussett Road—had a crash rate that exceeded the critical crash rate (90th percentile crash rate). Additionally, the intersection of Rimrock Acres Loop and NW O'Neil Highway is approaching the critical crash rate. Both intersections were flagged for further review based on this analysis.
- **Public Feedback.** Public feedback collected during the first public engagement milestone indicates that safety is a key concern.

3. Introduction to Alternatives

Alternatives for the Crook County transportation system have been developed to respond to needs identified in the Existing Conditions technical memo and to respond to community input. In February 2024, the planning team asked stakeholders, community members, and business owners to identify needs and describe issues with the current system, particularly in Powell Butte and Juniper Canyon. This input, in addition to past planning work, was used to inform and shape the alternatives presented in this memo.

3.1 Evaluation Framework

Table 2 shows the previously developed evaluation criteria from Technical Memorandum 4: Goals, Objectives, Evaluation Criteria. In some cases, there are multiple alternatives for addressing a given transportation issue. The evaluation criteria help determine which alternatives have the most merit for further consideration in the updated TSP. These evaluation criteria are based on the goals established for the TSP update.

Table 2. Evaluation Criteria

Goal	Criterion	How Will We Measure?
Goal 1. Mobility and Connectivity	Project, policy, or program promotes a transportation system that links rural communities to key destinations in the county, Prineville, and adjacent counties and serves existing and future needs for transporting goods and people.	• Project, policy, or program improves or does not negatively impact Level of Service on County roadways (quantitative assessment). • Improvement contributes to roadway modernization or improves bridge quality. • Improvement is consistent with Crook County roadway standards and specifications. • Qualitative assessment of how improvement increases destinations served by transit, bicycle infrastructure, and pedestrian infrastructure within Crook County
Goal 2. Economic Development	Project, policy, or program contributes to a transportation system that supports existing industry, encourages economic development in the county, and addresses population growth in Crook County and adjacent communities.	• Qualitative assessment of how improvement supports existing industries and maintains resiliency for future changes. • Qualitative assessment of how improvement increases intermodal connections and fosters commerce. • Improvement aids in integration of prime industrial lots with improved roadway connections (quantitative assessment). • Improvement increases connections to recreation, tourism, and retail/business destinations (qualitative assessment).
Goal 3. Safety	Project, policy, or program contributes to a transportation system that promotes the safety of current and future travel modes for all users.	• Improvement addresses safety issues at location with safety and crash history (qualitative assessment). • Project, policy, or program improves or does not negatively impact emergency vehicle access to communities and community destinations (qualitative assessment).
Goal 4. Multimodal Users	Project, policy, or program contributes to a multimodal transportation system that enables safe and efficient transport of people and goods through active modes.	• Improvement contributes to pedestrian, bicycle, and transit network connectivity (qualitative assessment). • Improvement increases comfort and safety (actual and perceived) for people walking, using an assistive mobility device, or bicycling.
Goal 5. Environment	Project, policy, or program contributes to a transportation system that balances transportation services with the need to protect the environment.	• Improvement increases transportation options and decreases reliance on single occupancy vehicle trips (qualitative assessment). • Improvement contributes to a transportation system that minimizes energy consumption and negative air quality impacts.

Goal	Criterion	How Will We Measure?
		Improvement contributes to a transportation system that aligns with State and federal noise, air, water, and land quality regulations.
Goal 6. Planning and Funding	Project, policy, or program maintains the safety, physical integrity, and function of the County's multimodal transportation network, consistent with Goal 6 of the OTP which focuses on creating a transportation funding structure that serves both current and future needs.	• Qualitative assessment of long-term funding stability for transportation maintenance and new infrastructure projects • Improvement provides high benefits relative to costs (cost/benefit assessment). • Improvement would likely be eligible for one or more grant programs, or other innovative funding sources for transportation improvements. • Improvement supports preservation or maintenance of the existing system.
Goal 7. Equity	Project, policy, or program increases mobility and access for all users.	• Improvement increases mobility or access for historically underserved people groups who are less likely to own a car. • Project, plan, or policy mitigates or avoids negative transportation impacts to low income and historically marginalized populations.

4. Roadway Alternatives

This section identifies alternatives for roadway projects, including intersection operations, access management, and new connections. The sections that follow detail the alternatives; they are also shown in Figure 1.

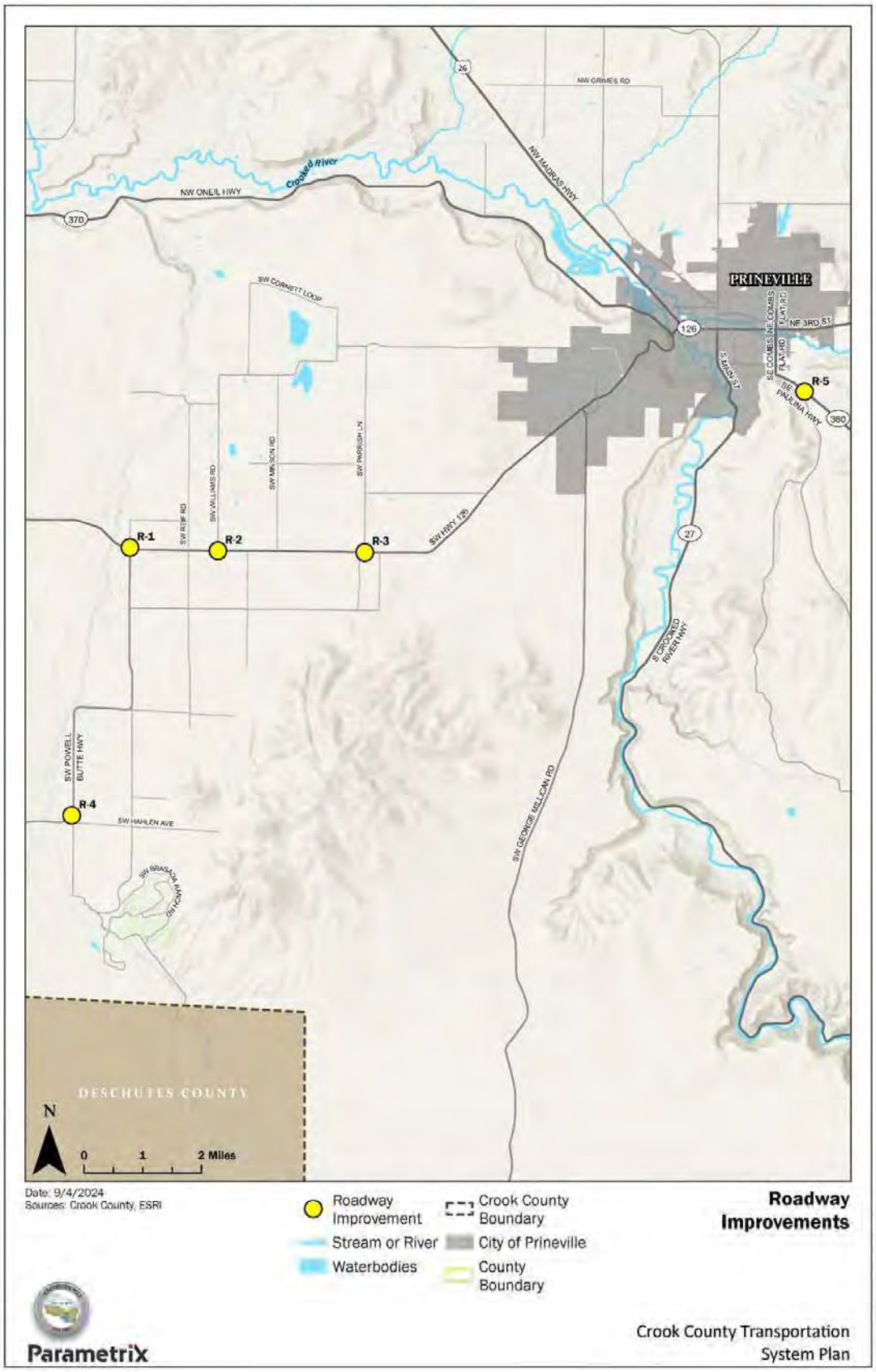


Figure 1: Roadway Improvements

4.1 Intersection Operations

The project team conducted traffic analysis to understand roadway system performance in Crook County both today and in the future. State highway mobility targets are based on volume-to-capacity (V/C) ratios and were used to evaluate Existing and Year 2045 Future No Build Conditions. The Year 2045 Future No Build assessment evaluates expected traffic patterns if no roadway improvements were implemented; for this plan, an adjusted growth rate was used to better understand the impacts of expected development.

Under Year 2023 Existing Conditions, the intersection of SW Powell Butte Highway and Ochoco Highway/OR 126 operates with a V/C ratio that exceeds the mobility target. In the Year 2045 Future No Build (Juniper Canyon Higher Growth) scenario, five of the six study intersections are expected to operate with a V/C ratio or LOS that exceeds the mobility target. The sections that follow explore alternatives for each location that respond to operational deficiencies and other area needs. These locations are depicted in Figure 1. As described below, operational improvements are not identified for the intersection of S Powell Bute Highway and Alfalfa Road.

The potential alternatives were evaluated for Year 2045 and were compared to mobility targets from Table 6 of the *Oregon Highway Plan* (ODOT 1999). These mobility targets are considered standards, but there is a design exception process to consider reduced targets. The individual intersection improvements and lane reconfiguration were analyzed using Synchro and Sidra. Volume to capacity ratios, delay, and LOS were reported using the same reports and post-processing methods as Existing Conditions and Year 2045 Future No Build Higher-Growth Scenario Conditions. Volume to capacity ratios, delay, and LOS are summarized in Table 3.Traffic reports are available in Attachment A, Synchro, SimTraffic, and Sidra Reports.

Table 3. Year 2045 Build Traffic Operations – V/C Ratio, Delay, and LOS

Intersection/Alternative	Control	Mainline				Side Street			
		V/C ratio	Delay (sec)	LOS	Exceeds Mobility?	V/C ratio	Delay (sec)	LOS	Exceeds Mobility?
R-1: SW Powell Butte Highway & Ochoco Highway/OR 126									
No Build (Higher Growth)	TWSC	0.84	40	E	**Yes**	2.40	673	F	**Yes**
R-1A: Single Lane Roundabout	RAB	1.50	247	F	Yes	1.48	245	F	Yes
R-1A: Roundabout, with Existing Volume	RAB	0.60	11	B	No	0.48	12	B	No
R-1B: Multi- Lane Roundabout with Northbound Slip Lane	RAB	0.75	18	C	No	0.55	10	B	No
R-1B: Multi- Lane Roundabout	RAB	0.75	18	C	No	1.74	361	F	**Yes**
SW Williams Road & Ochoco Highway/OR 126									
No Build (Higher Growth)	TWSC	0.95	13	B	**Yes**	2.11	1,786	F	**Yes**
R-2A: Left Turn Lane	TWSC	0.11	12	B	No	1.14	878	F	**Yes**
R-2B: Traffic Signal	Signal	1.16	30	C	**Yes**	-	-	-	-
R-2C: Pedestrian Refuge	TWSC	0.95	13	B	**Yes**	2.11	1786	F	**Yes**
R-2D: Single Lane Roundabout		1.14	88	F	**Yes**	0.21	13	B	No
R-2E: Highway Bypass		-	-	-	-	-	-	-	-
SW Parrish Lane & Ochoco Highway/OR 126									
No Build (Higher Growth)	TWSC	0.85	11	B	**Yes**	0.21	101	F	No
R-3A: OR 126 Widening (Center Two-Way Left-Turn Lane)	TWSC	0.01	11	B	No	0.21	99	F	No
S Powell Butte Highway & Alfalfa Road									
No Build (Higher Growth)	TWSC	0.14	10	A	No	0.67	72	F	**Yes**
SE Juniper Canyon Road & SE Paulina Highway/OR 380									
No Build (Higher Growth)	AWSC	2.27	534	F	**Yes**	1.67	163	F	**Yes**
R-4A: Acceleration Lane	TWSC	0.00	0	A	No	0.24	23	C	No
R-4B: Traffic Signal	Signal	1.06	8	A	**Yes**	-	-	-	-
R-4C: Roundabout	RAB	1.02	47	E	**Yes**	0.59	10	A	No
R-4C Roundabout with Eastbound Slip Lane		0.72	1	A	No	0.59	10	A	No

AWSC = all-way stop control; LOS = level of service; TWSC = two-way stop control; V/C = volume to capacity

4.1.1 OR 126 and Powell Butte Highway

The intersection of OR 126 and Powell Butte Highway is a long-standing traffic mobility and safety concern identified in the prior TSP and confirmed through updated traffic analysis and public feedback conducted as part of the TSP update. This location exceeds the established mobility target both today and in the future no-build conditions. Additionally, the community identified concerns regarding safety and visibility of the intersection, as well as desire to maintain the post office location. One alternative was evaluated at this location, as described in Table 4.

Table 4: OR 126 and Powell Butte Alternative

Proposed Alternatives	V/C	Benefits/Limitations
No Build	2023: Major: <0.70 Minor: <0.80 2045: Major: 0.34 **Minor: 1.30**	No Build does not meet mobility standards. Existing safety issues would worsen.
R-1A: Construct a single lane roundabout.	**Major: 1.50** **Minor: 1.48**	Benefits: • This approach will maintain all turning movements while reducing turning movement conflicts. • Based on existing traffic volumes, this alternative would improve traffic operations, with both streets v/c ratio below the mobility target (Mainline: 0.60; Side Street: 0.48) in the near term. 82% reduction in all crashes at all severities (ODOT Crash Reduction Factor Manual, Countermeasure H18 – Convert Minor Road Stop Controlled Intersection into Roundabout) Limitations: • Potential reconfiguration of post office access and parking area circulation to maintain large truck access. This approach is also expected to have right-of-way impacts. • Traffic operations are expected to exceed mobility targets based on the future higher growth scenario (v/c ratio of 1.5 for the mainline, and 1.48 for the side street). Alternate mobility targets, or a multi-lane roundabout, may be needed.
R-1B: Construct a multi-lane roundabout	Dual lane roundabout with northbound slip lane to OR 126: Major: 0.75 Minor: 0.55 Dual lane roundabout: Major: 0.75 **Minor: 1.74**	Benefits: • Increases intersection capacity and is expected to improve operations. A dual lane roundabout with a northbound right-turn slip lane is expected to perform within mobility targets. • This approach will maintain all turning movements while reducing turning movement conflicts. • A dual lane roundabout could be phased, such that a single lane roundabout is constructed first, then expanded in the future. Limitations: • This alternative is expected to have significant property impacts, including impacts to post office access. • This alternative is expected to have significant costs. • Less safety benefits expected compared to a single lane roundabout.

R-1A: Install Single Lane Roundabout

R-1A has received previous support, identified both in the OR 126 Corridor Plan as well as the 2017 TSP. The proposed improvement is expected to improve traffic operations based on existing traffic volumes, as described in Table 4. However, the single lane configuration is not expected to meet mobility targets in the future higher growth scenario; alternative mobility targets should be considered at this location.

As shown in Figure 2 below, alignment of the roundabout is anticipated to have right-of-way impacts; the extent of impacts will depend on placement of the roundabout. Placement should consider post office access and impacts to circulation for required delivery vehicles at this location. Opportunities may be available to not only formalize post office access, but also relocate access to Powell Butte Highway. Final design should also consider all roadway users, such as farm equipment, bicycles, pedestrians, and freight.



Figure 2: OR 126 and Powell Butte Highway Roundabout

R-1B: Install Multi-Lane Roundabout

A multi-lane roundabout would provide greater intersection capacity to improve operations. However, a multi-lane would require additional right-of-way and would be expected to have greater property impacts as well as more significant costs for implementation.

4.1.2 OR 126 and SW Williams Road

The intersection of OR 126 and SW Williams Road is a key location for community destinations, including Powell Butte Charter School, Powell Butte Christian Church, and Powell Butte Country Store. The intersection exceeds mobility targets in the future no-build higher growth scenario and is a critical location for school pick up and drop off, student access to school, and access to community destinations. The area does not currently have sidewalks, has non-compliant or missing curb ramps, and limited delineation of the right-of-way. Three alternatives are identified to improve traffic operations, which are explored in more detail below in Table 5.

Table 5: OR 126 and SW William Road Alternatives

Proposed Alternatives	V/C	Benefits/Limitations
No Build	2023: Major: 0.49 Minor: 0.22 2045: **Major: 0.95** **Minor: 2.11**	Does not meet mobility standards in future year.
R-2A: Add left turn lanes on OR 126; add right turn lane on west leg of intersection.	Major: 0.11 **Minor: 1.14**	Benefits: • Future traffic conditions would meet turn lane warrants. Opportunity to manage access and formalize driveways • This alternative improves traffic operations on OR 126, resulting in a v/c ratio of 0.11, which is below the mobility target. • Potential consolidation of access to the Country Store located northeast of the intersection with traffic to and from the store using Williams Road Limitations: • Current intersection exceeds required offset (>4 feet); correcting offset will have right-of-way impacts. • Increases pedestrian crossing distance and exposure. An enhanced crossing is desired at this location; however, certain features, such as a median island, would be precluded. • Possible poor levels of service for NB approach during peak travel times (including school arrival/departure traffic) • Potential impacts to Country Store access, as noted above.
R-2B: Add left turn lanes on OR 126, add right turn lane on west leg of intersections, and install traffic signal	**Major: 1.16** **Minor: 1.16**	Benefits: • Future traffic conditions would meet turn lane warrants. Improves levels of service for NB approach during peak travel times. Increases future intersection traffic demand service if volumes grow in future • Increases crossing comfort through allowance of pedestrian phase with signal • 77% reduction in angle crashes (ODOT Crash Reduction Factor Manual, H24-Install Traffic Signal at Rural Intersection) • Potential consolidation of access to the Country Store located northeast of the intersection with traffic to and from the store using Williams Road Limitations: • 58% increase in rear-end crashes (ODOT Crash Reduction Factor Manual, H25-Install Traffic Signal at Rural Intersection)

Proposed Alternatives	V/C	Benefits/Limitations
		• Location does not meet signal warrants 1, 2, or 3. Pedestrian volumes unavailable for assessment. Has high cost and maintenance considerations • Extended queues may require increased widening to provide additional lanes for storage. • Correcting offset for SB and NB through vehicles will have ROW impacts; ROW impacts also expected from added SB left turn lane • Increases pedestrian crossing distance • Mainline does not meet mobility targets, resulting in a v/c ratio of 1.16. • Large queue lengths on EB and WB approaches (about 850 feet on the EB approach and 600 feet on the WB approach) • Potential impacts to Country Store access
R-2C: Install Pedestrian Refuges on OR 126; add right turn lane on west leg of intersection.	**Major: 0.95** **Minor: 2.11**	Benefits: • Increases comfort through use of two-stage pedestrian crossing • Medians encourage vehicles to slow and breaks up long, straight stretch of highway Limitations: • Intersections does not provide all warranted turn lanes • Mainline does not meet mobility targets, results in a v/c ratio of 0.95. • Likely to require widening to maintain horizontal clearances (potential reduction in vehicle carrying capacity per ORS 366.215)
R-2D: Install single lane roundabout	**Major: 1.14** **Minor: 0.21**	Benefits: • Improves safety and slows traffic at this intersection Limitations: • Worsens mainline performance compared to No Build. Does not meet ODOT mobility standards. • Significant right-of-way impacts
R-2E: Develop highway bypass to the north of OR 126, approximately ½ mile in length	**N/A**	Benefits: • Would potentially increase safety by separating highway traffic from local access traffic. Limitations: • Would require acquisition of new highway corridor on private property • Significant costs

The 2017 TSP proposed converting the existing intersection to two offset T intersections, as originally described in the OR 126 plan. This recommendation was based on traffic analysis completed for the horizon year 2030, which forecasts low volumes along the minor approaches. Traffic analysis completed as part of this TSP update not only identified significantly higher future volumes but also an increase traffic demand during times likely associated with school pick up. To address the expected travel volumes while also considering safety of a high-demand intersection, this TSP update proposes three new alternatives and does not recommend advancing the previous recommendation.

All alternatives identified at this location would include sidewalks and curb ramps to provide access to the school, church, and businesses, as well as lighting to improve visibility. Installation of sidewalk, especially just north of the school, will require additional coordination with the school to review and update circulation and parking. More information regarding pedestrian improvements can be found in Section 6.2.

In all alternatives, the offset for southbound and northbound through vehicles exceeds the maximum offset required in the ODOT Highway Design Manual, Section 506.4. Correcting this offset is expected to have right-of-way impacts.

R2-A: Add Left Turns Lanes on OR 126

This alternative, as shown in Figure 3, would upgrade the intersection to meet turn lane design standards, including the addition of left turn lanes on OR 126, as well as a right turn lane on the west leg of the intersection. Crosswalks will be marked on all four legs of the intersection would designate pedestrian crossing locations; crosswalks on OR 126 would feature high visibility continental crosswalk markings. This alternative is expected to meet mobility targets in the future build scenario for OR 126; however, the minor street does not meet mobility targets. Additionally, the pedestrian crossing would need to be further improved to meet ODOT guidelines.



Figure 3: OR 126 and SW Williams Rd Alternative 1

R-2B: Add Left Turns Lanes on OR 126; Install Signal

Alternative 2, as shown in Figure 4, would install a traffic signal and upgrade the intersection to meet turn lane warrants, including the addition of left turn lanes on OR 126, as well as a right turn lane on the west leg of the intersection. Crosswalks will be marked on all four legs of the intersection would designate pedestrian crossing locations; crosswalks on OR 126 could feature high visibility continental crosswalk markings. While this alternative also increases pedestrian crossing distance, it does provide a pedestrian phase for crossing to improve visibility and safety. A signal also offers the opportunity to have several timing plans to better accommodate peak school times.

Limitations of this alternative include the high cost for installation and ongoing maintenance and the potential for large queue lengths on the EB and WB approach. Additionally, this intersection does not meet signal warrants 2 or 3 (only 5 hours of data collected). This alternative is not expected to meet mobility targets in the future higher growth scenario. Additionally, the ODOT Crash Reduction Factor Manual indicates a signal could result in a decrease in angle crashes along with a significant increase in rear-end crashes.



Figure 4: OR 126 and SW Williams Rd Alternative 2

R-2C: Install Pedestrian Refuges on OR 126

The addition of pedestrian refuge islands creates a two-stage pedestrian crossing to increase pedestrian safety while crossing OR 126, as shown in Figure 5. The crossings would also feature high visibility crosswalk markings and signage to increase visibility and rapid flashing beacons. In addition to improving crossing comfort, the median refuge islands also encourage slower vehicle travel speeds. This alternative does not include left turn lanes on OR 126 but does include the addition of a right turn lane on the west leg. This configuration would not construct all turn lanes that meet turn lane warrants. Additionally, neither roadway is expected to meet mobility targets in the future higher

growth scenario.



Figure 5: OR 126 and SW Williams Rd Alternative 3

4.1.3 OR 126 and SW Parrish Lane

OR 126 and SW Parrish Lane is expected to exceed mobility targets in the future no build higher growth scenario. The existing roadway configuration does not include a dedicated left turn lane on the west leg of the intersection to facilitate turns onto SW Parrish Lane. Based on review of existing traffic volumes, this intersection meets turn lane warrants. One alternative was developed to address intersection operations, explored in Table 6 below.

Table 6: OR 126 and SW Parrish Lane Alternative

Proposed Alternatives	V/C	Benefits/Limitations
No Build	2023: Major: 0.44 Minor: 0.07 2045: **Major: 0.85** Minor: 0.21	Forecast to not meet mobility standards in the future.
R-3A: Widen OR 126 from SW Valley View Road to Stillman Road (Center Two-Way Left-Turn Lane)	Major: 0.01 Minor: 0.21	Benefits: • Future traffic conditions would meet turn lane warrants • Opportunity to add medians/physical markers on east leg to encourage vehicles to slow • Alternative would improve traffic operations, resulting in a v/c ratio of 0.01, which is below the mobility target • Widening avoids hourglass affect that would be present if only an eastbound left turn lane was constructed on OR 126 at SW Parrish Lane. Limitation: • May have ROW impacts

As shown in Figure 6, project recommendations include installation of a center two-way left-turn lane to address identified needs. The center lane would act as a turn lane onto SW Parrish Lane from OR 126. In addition to the center lane, there are opportunities to add medians or physical markers on the east leg of the intersection to encourage vehicles to slow. This project may have right-of-way impacts.

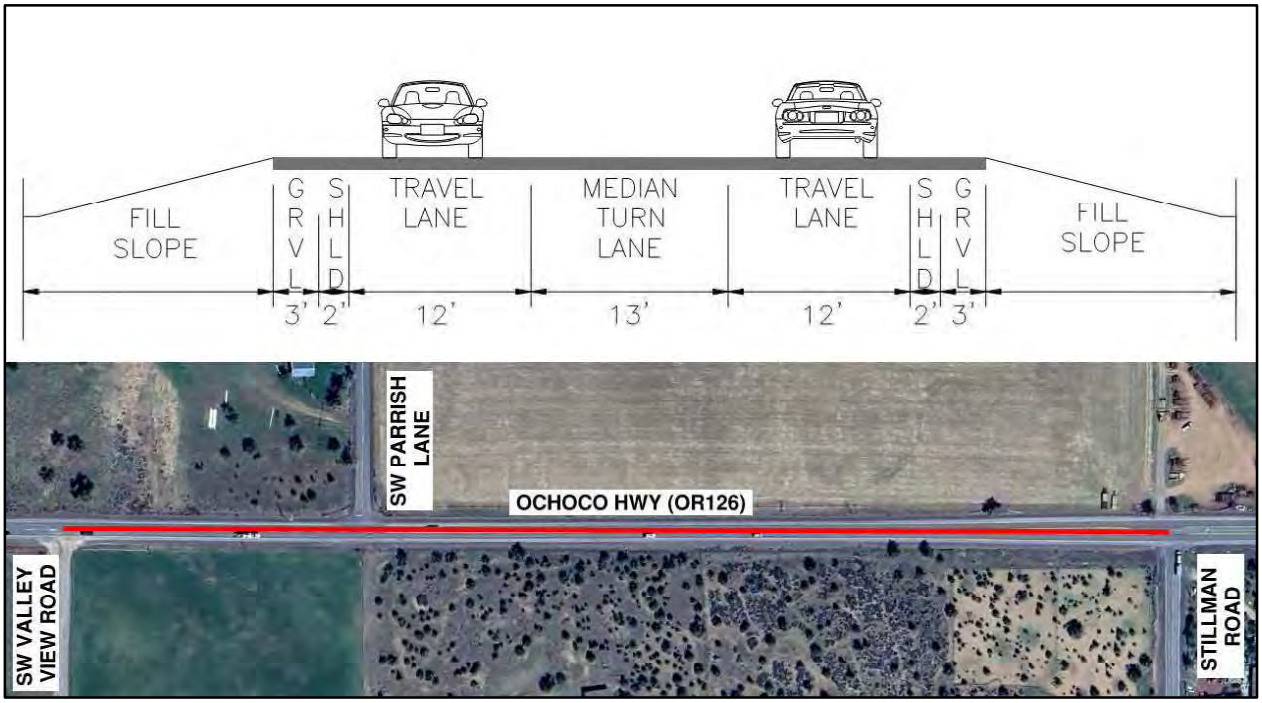


Figure 6: OR 126 Widening

4.1.4 SE Juniper Canyon Road and OR 380

The intersection of SE Juniper Canyon Road and OR 380 is a critical connection for the growing Juniper Canyon residential area. The current configuration is skewed, limiting sight distance and impacting turning movement from Juniper Canyon Road. This intersection is expected to exceed mobility targets in the 2045 no-build higher growth scenario. Three alternatives are explored to address intersection needs in Table 7.

Table 7: SE Juniper Canyon Rd and OR 380 Alternatives

Proposed Alternatives	Year 2045 Future Build V/C	Benefits/Limitations
No Build	2023: Major: 0.54 Minor: 0.34 2045: **Major: 2.27** **Minor: 1.67**	Exceeds mobility target in future year.
R-4A: Realign intersection with left acceleration lane	Major: 0.00 Minor: 0.24	Benefits: • Revises intersection to 90 degrees, improving sight distance and shortening vehicle time in intersection • Maintains eastbound right turning movement without requiring a stop • Allows westbound left turning vehicles to get up to speed before merging with SB traffic • Reduces conflict points, helping drivers avoid misjudging gaps in traffic • Maintains northbound left movement without requiring a stop • Alternative improve traffic operations, resulting in a 0.00 v/c ratio Limitations: • Expected to have ROW impacts • Uncontrolled conflict points between turning vehicles and vehicles maintaining highway speed • May not meet Highway Design Manual Standards for a left turn acceleration lane.
R-4B: Realign Intersection, Install Traffic Signal	**Major: 1.06** **Minor: 1.06**	Benefits: • Revises intersection to 90 degrees, improving sight distance and shortening vehicle time in intersection • Maintains EB right turning movement without requiring a stop • Signal warrant 2 (four hour) is met under existing condition volumes. Four hours of data were collected so warrant 1 was not evaluated. Limitations: • Expected to have ROW impacts; higher maintenance costs associated with traffic signal • Northbound left turn movements are not maintained without stopping. • Alternative does not meet mobility targets; mainline v/c ratio is expected to be 1.06

R-4C: Install single lane roundabout	**Major: 1.02** Minor: 0.59 With a slip lane for the eastbound right movement onto Juniper Canyon road: Major: 0.72 Minor: 0.59	Benefits: • All turning movements are maintained and yield controlled • With a slip lane as described, would meet mobility targets. • Reduces risk associated with right-angle, left-turn, and head-on crashes • Promoted lower travel speeds and helps reduce risk of injury crashes for all crash types Limitations: • Expected to have ROW impacts • Alternative does not meet mobility targets; mainline v/c ratio is expected to be 1.02

R-4A: Realign Intersection with Left Acceleration Lane

This alternative, as shown in Figure 7, realigns the intersection to a 90-degree angle, which helps to improve sight distances and reduces vehicle time in the intersection. This configuration also helps reduce potential conflict points. This alternative meets mobility targets for intersection performance.

Limitations of this alternative include expected right-of-way impacts as well as uncontrolled conflict points between turning vehicles and vehicles maintaining highway speed.



Figure 7: Juniper Canyon Rd and OR 380 Alternative 1

R-4B: Realign Intersection, Install Traffic Signal

This alternative, as shown in Figure 8, realigns the intersection to a 90-degree angle, which improves sight distance and reduces vehicle time in the intersection. Travel along eastbound OR 380 to southbound Juniper Canyon does not require vehicles to stop. However, this alternative is expected to have right-of-way impacts and the signal has a higher maintenance cost. Additionally, travel northbound on Juniper Canyon to westbound OR 380 requires vehicles to stop. This alternative does not meet mobility targets for intersection operations.

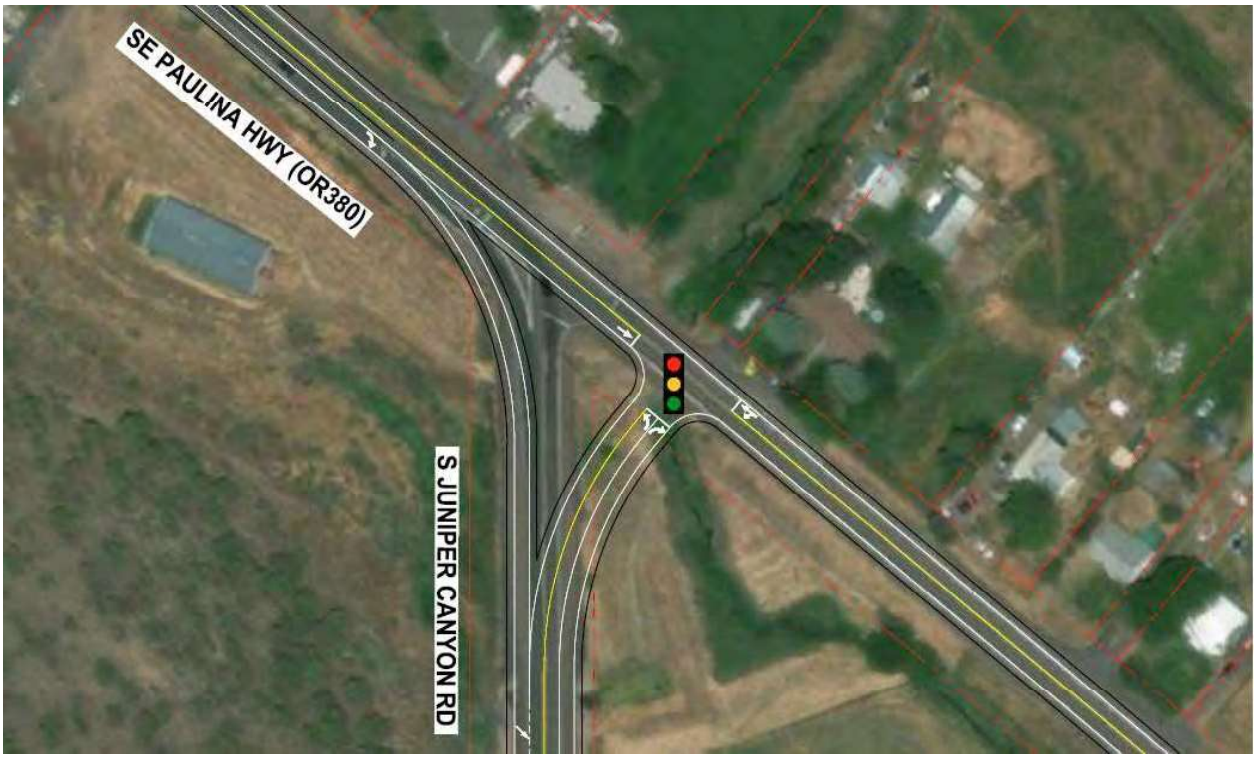


Figure 8: Juniper Canyon Rd and OR 380 Alternative 2

R-4C: Install Single Lane Roundabout

As shown in Figure 9, this alternative would install a single lane roundabout. This option maintains all turning movements and helps to reduce risk of right-angle, left-turn, and head-on crashes. Roundabouts encourage lower speeds, which can reduce risk of injury crashes for all crash types. Additional analysis and design is required to determine the appropriate size and placement of the roundabout, but it is expected to have right-of—way impacts. This alternative does not meet mobility targets for intersection operations. However, adding a slip lane for the eastbound right movement from OR 280 onto southbound Juniper Canyon Road would meet mobility targets. The slip lane concept is shown in Figure 10.



Figure 9: Juniper Canyon Rd and OR 380 Alternative 3



Figure 10: Juniper Canyon Rd and OR 380 Alternative 3 With Slip Lane

Highway 99E Corridor Plan (2012)

4.1.5 S Powell Butte Highway and Alfalfa Road

Alfalfa Road is a local roadway that intersects with S Powell Butte Highways in a T intersection, where Alfalfa Road is stop controlled. The side street will operate at LOS F; however, no traffic mobility improvements are recommended for this location due to the relatively low-volume of the side street and the high cost relative to benefit to address the problem. This location is also identified as a high-crash location; alternatives are outlined in the safety section.

4.2 Access Management

Providing adequate access to other public roadways, land uses, and destinations is a critical part of an effective transportation system. However, it is necessary to balance access with the need for mobility and safety on the system. Providing access via other public streets and driveways to land uses creates friction from a traffic operations perspective; it may reduce mobility and introduces points of conflict that can increase the potential for crashes.

The 2017 TSP identifies a series of access management improvements originally included in the OR 126 Corridor Plan. These locations are shown in **Figure 1** and include:

- **R-5:** OR 126 at Kissler Road
- **R-6:** OR 126 at Copley Road
- **R-7:** OR 126 at Minson Road
- **R-8:** OR 126 at Yates Road
- **R-9:** OR 126 at Wiley Road – close minor road access

4.2.1 Access Management Standards

The access management standards for Crook County facilities are summarized in the existing Crook County TSP and in Table 8. The spacing standards are intended to be applied to newly constructed or reconstructed roads and new driveways as development or redevelopment occurs rather than used to eliminate existing driveways.

Table 8. Access Management Spacing Standards for Crook County Facilities

Functional Classification	Minimum Posted Speed (mph)	Minimum Spacing Between Driveways/Streets (feet)	Minimum Spacing Between Intersections	Adjacent Land Use
Arterial	55	1,200	1 mile	Undeveloped or agricultural land between major population centers
Major Collector	35–55	500	0.5 miles	Undeveloped or agricultural land between and through cities or rural service centers
Minor Collector	25–55	300	0.25 miles	Undeveloped or agricultural land between and through cities or rural service centers

Functional Classification	Minimum Posted Speed (mph)	Minimum Spacing Between Driveways/Streets (feet)	Minimum Spacing Between Intersections	Adjacent Land Use
Local	25	Access to each lot permitted	150 feet	Residential

Source: Crook County TSP (2017).

Access management for state facilities is outlined in OAR 734-051, and spacing standards are dependent upon several variables including average annual daily traffic (AADT) volumes, posted speed, and functional classification. The access management standards for state facilities in Crook County are presented in the Plan and Policy Review (Technical Memorandum #1) for the TSP update and are summarized in Table 9.

Table 9. Access Spacing Standards for ODOT Facilities

Route Name	ODOT Highway Number	Facility Extents	ODOT Facility Designation	ODOT Functional Classification	Posted Speed Limit (mph)	AADT	Access Spacing Standard (feet)
US26	360	West of Prineville	Regional Highway	Rural Minor Arterial	55	> 5,000	1,320
	041	East of Prineville	Statewide Highway	Rural Other Principal Arterial	55	> 5,000	1,320
OR 370	370	Entire section within County limits, excluding Prineville	District Highway	Rural Minor Arterial	55	< or = 5,000	650
OR 126	041	Entire section within County limits, excluding Prineville	Statewide Highway	Rural Other Principal Arterial	55 [a]	> 5,000	1,320
OR 380	380	Entire section within County limits, excluding Prineville	District Highway	Rural Major Collector	55 [b]	< or = 5,000	650
OR 27	014	Entire section within County limits, excluding Prineville	District Highway	Rural Major Collector	55	< or = 5,000	650

Source: Oregon Highway Plan

a Speed limit on OR 126 drops to 50 mph and 40 mph through Powell Butte.

b Speed limit on OR 380 drops to 45 mph and 35 mph south of Prineville city limits.

AADT = average annual daily traffic; mph = miles per hour; ODOT = Oregon Department of Transportation

4.3 Functional Classification and New Connections

Figure 11 depicts the designated functional classification for roadways in Crook County. Functional classification characterizes the intended purpose of a roadway, including the amount and type of vehicular traffic expected, elements to support active and shared modes of travel, and the design of the roadway. Proposed minimum design standards for different roadway functional classifications are outlined in Table 10. While these represent the minimum design standards, conditions may require different elements and dimensions.

Table 10. Functional Classification

Road Type / Class	ROW Width (ft.)	Paved Width	Travel Lane Width	Paved Shoulder Width	Surface Type	Max. Grade	Minimum Intersection Spacing	Minimum Access Spacing	Design Speed / Min. Tang./ Min. Curve	Recommended AADT Range
Major Arterial	100	STATE HIGHWAY – SEE OREGON DEPARTMENT OF TRANSPORTATION								
Minor Arterial	80	28	12	5'-7''	6" HMAC	6%	0.5 miles	500 ft	AASHTO	>5000
Major Collector	80	28	12	4'-6'	4" HMAC	8%	0.5 miles	500 ft		1,500 – 5,000
Minor Collector	80	28	12	4'-6'	4" HMAC	8%	0.25 miles	300 ft		400 – 1,500
Local	60	24	12	N/A	4" HMAC	10%	150 feet	N/A		<400

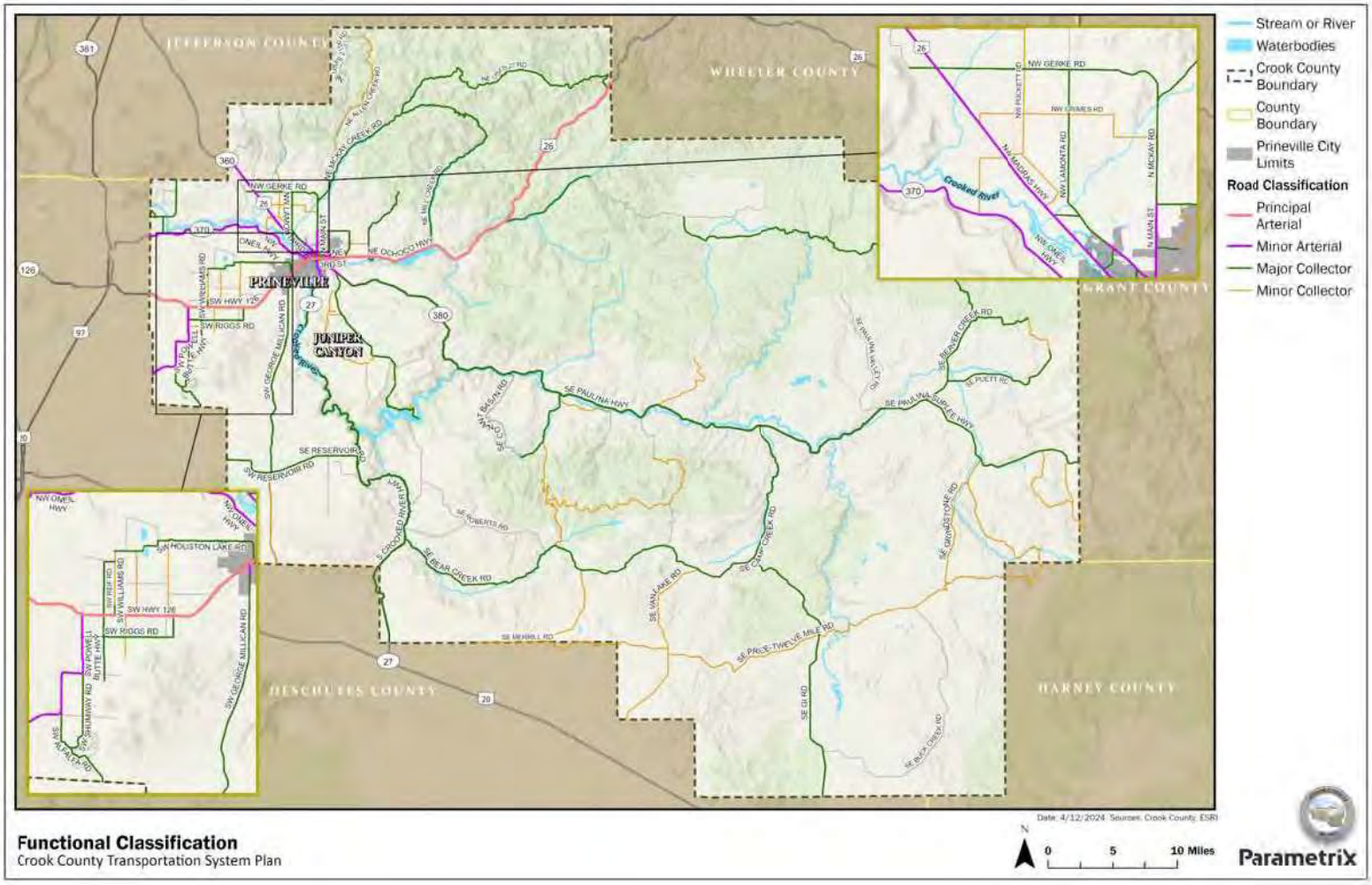


Figure 11: Functional Classification

4.3.1 New Connections

One new roadway connection is proposed to address the growing population in Juniper Canyon. Access along Juniper Canyon, including considerations for improved ingress and egress, is a primary concern for the community. As described in the Existing Conditions and Needs memorandum, residents have long desired the construction of an alternate route to enhance Juniper Canyon access. Specific concerns noted by the community include:

- Address excessive speeding on SE Juniper Canyon Road.
- Perform consistent winter maintenance to maintain a safe traveling environment.
- Create a new access route near the Crooked River or from the south of SE Juniper Canyon Road to OR 380.
- Ensure the new access route is south of SE Davis Loop to benefit the greatest number of residents.

Projects included in Section 5seek to respond to concerns regarding speeding and safety of traveling in winter conditions, including variable speed limits, raised pavement markers, edgeline rumble strips, and improved signage.

As part of the TSP update, the project team will evaluate new access opportunities. The findings of this study will inform the final TSP update project list and will be included as part of the final TSP. *A summary of the findings will be included in the final version of this memorandum.*

4.4 Bridge Improvements

The 2017 TSP evaluated bridge needs in the County and found many of the 111 bridges in Crook County are in need of replacement or repair. Bridges are classified by length; bridges over 20 feet in length are part of the National Bridge Inventory database and are eligible for federal funding for repair. Bridges 20 feet in length or shorter are not part of the NBI; the County is financially responsible for repairs and replacements for these bridges.

Based on historical data, the County has replaced one non-NBI bridge per year at a cost of approximately $150,000. This plan assumes that this trend will continue, with expectations that approximately $3,000,000 is needed over the next 20 years.

Additionally, Table 11 summarizes NBI bridges with either low sufficiency ratings or that are considered functionally obsolete. Since the 2017 TSP, one project was completed; the Weigan Road bridge replacement was completed with grant funding. The table summarizes the remaining projects.

Table 11. Bridge Recommendations

Project ID	Project Location	Project Description
BR-1	County Road 221 bridge over Paulina Creek (NBI Bridge 19083)	Conduct a study to evaluate the cost of replacing or repairing this bridge. The bridge is functionally obsolete.
BR-2	Powell Butte Highway bridge over Powell Butte Canal (NBI Bridge 03291)	Replace the Powell Butte Highway bridge over the Powell Butte Canal.
BR-3	Powell Butte Highway bridge over Powell Butte Wasteway (NBI Bridge 03293)	Replace the Powell Butte Highway bridge over the Powell Butte Wasteway.
BR-4	Johnson Creek Road NE bridge over Ochoco Main Canal (NBI Bridge 13C06A)	Replace the Johnson Creek Road NE Bridge over the Ochoco Main Canal.
BR-5	Non-NBI bridge replacement program	Continue to replace one non-NBI bridge per year at approximately $150,000 per bridge. When replaced, each bridge should be built at least 21 feet long when possible to be eligible for federal funding in the future.

4.5 Intelligent Transportation Systems (ITS) Recommendations

- ITS recommendations identify opportunities for technology to improve transportation system operations or safety. The 2017 TSP identified three locations where ITS improvements could improve operations and safety; these locations and elements include:
- OR 126 Parrish and Minson – Variable Messaging Signs in both directions.
- Powell Butte Highway and OR 126 –Road Weather Information System
- Juniper Canyon Road variable speed limit or other weather-related interventions.

5. Safety

The safety analysis analyzed 10 intersections and five highways to determine their crash rates and identify if the incidence of collision is greater than what would be expected for a location of that type in a typical community. The results of this analysis identified a series of safety issues and corresponding project alternatives. In addition to these projects, the 2017 TSP identified a series of safety improvements that are advanced as part of this TSP. These locations are all shown in Figure 12 and described in further detail in the sections that follow.

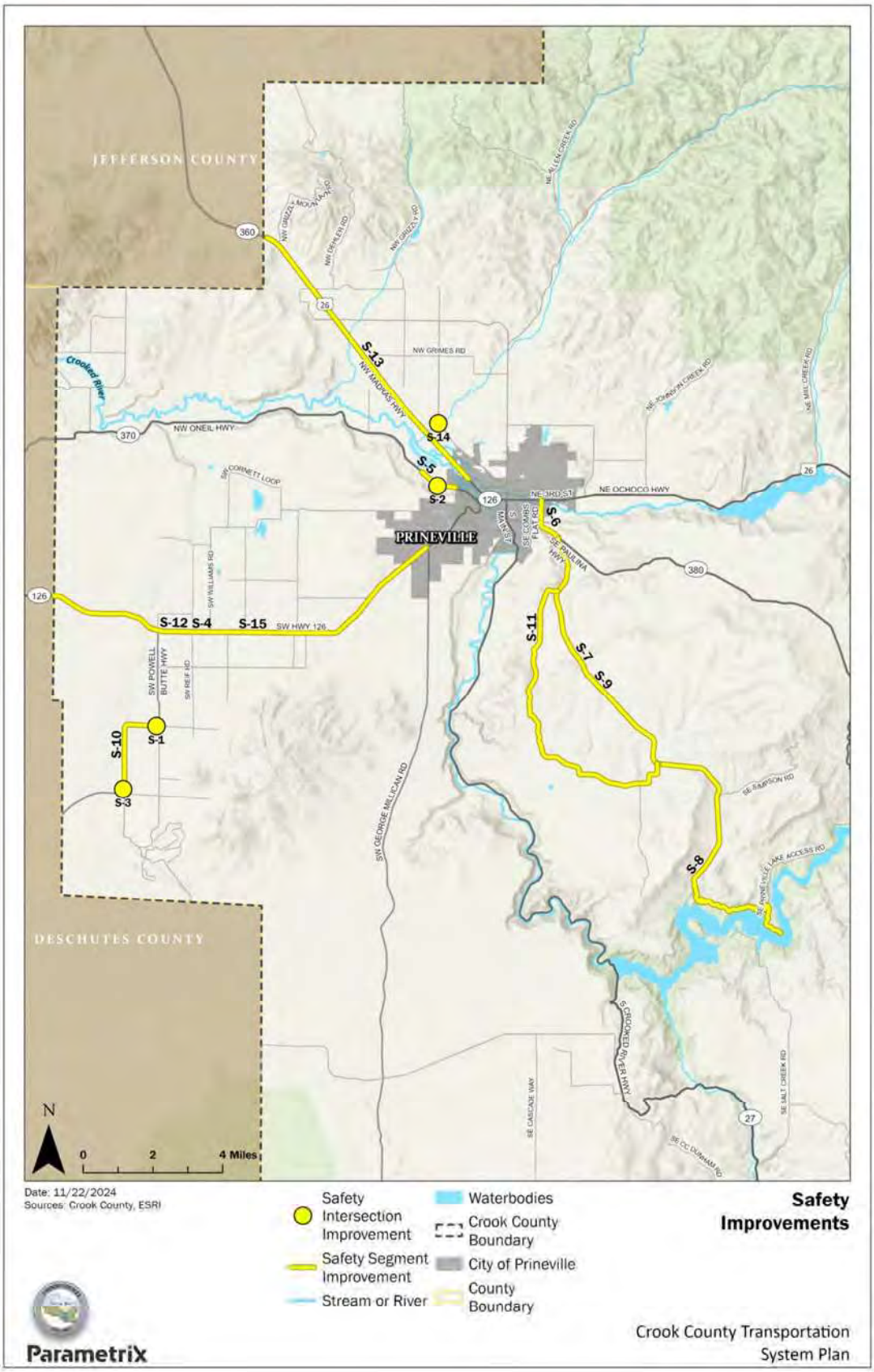


Figure 12: Safety Improvements

5.1 Intersection Safety

Of these 10 intersections analyzed, one was identified as exceeding the critical crash rate; a second intersection was identified as approaching the critical crash rate. Table 12 reviews those locations and includes proposed interventions to improve safety. Neither location is identified in the ODOT SPIS database. Error! Not a valid bookmark self-reference. also identifies the location of S Powell Butte Highway and Alfalfa Road, which was identified in the previous TSP.

Table 12: Intersection Safety Recommendations

Project ID	Intersection Location	Safety Issue	Potential Alternatives	Safety Benefit
S-1	S Powell Butte Highway & SW Bussett Road	• Exceeds critical crash rate • Complexity of intersection may be causing driver confusion.	• Reconstruct intersection to simplify circulation patterns and turning movements. • Install rumble strips along the curve. • Implement variable speed limits that lower in icy conditions • Install lighting. • Reassess curve warning signage and check sign spacing.	• Rumble strips help alert drivers who drift from their lane. • Variable speed limits help mitigate inclement weather conditions • Revised intersection alignment can simplify travel patterns and improves roadway visibility. This approach also aligns with AASHTO and ODOT standards. • Lighting and improved signage improves roadway visibility and increase driver awareness.
S-2	Rimrock Acres Loop & NW O'Neil Highway	• Intersection is approaching the critical crash rate. • Two reported crashes were curve related.	• Install lighting • Install raised pavement markings • Evaluate existing curve warning signage locations and warning speeds. • Install curve chevrons, guardrail, and rumble strips.	• Improves curve delineation and warnings may enhance driver awareness and navigation of the curve. • Improved lighting, pavement markings, and signage can help increase visibility at the intersection.
S-3	S Powell Butte Highway and Alfalfa Rd	• Identified as a high crash location in the 2017 TSP. • Roadway curve	S-3A: Install lighting; install curve chevrons along Powell Butte. Reassess curve warning signage and check for sign spacing	• Improves curve delineation and warning may enhance driver awareness and navigation of the curve. • Improved lighting, pavement markings, and signage can help increase visibility at the intersection.
			S-3B: Realign S Powell Butte Highway	• Reduces 90-degree curves/turns in roadway.

5.1.1 S Powell Butte Highway and SW Bussett Road

One alternative proposed will realign and simplify the intersections of S Powell Butte Highway, Shumway Road, and SW Bussett Highway. Based on feedback received, acceleration lanes on S Powell Butte Highway were included in this alternative. This approach reduces the number of potential points of conflict and realigns intersections to 90-degree angles. Right-of-way impact is expected to be minimal. This is shown in Figure 13.

Potential limitations of this approach include issues associated with sight distances and icy conditions. Icy conditions may increase as the intersection is shifted to the high side of the superelevated curve. Further, sight distance for drivers turning onto and off of Shumway Road may be limited due to the curve. This improvement should also include other countermeasures to help address remaining safety concerns. Examples include installation of rumble strips along the curve, implementation of variable speed limits that lower in icy conditions, and installation of lighting to improve visibility. Curve warning signs should also be reviewed for appropriate placement and spacing.



Figure 13: Proposed Realignment of S Powell Butte Highway and SW Bussett Road

5.1.2 S Powell Butte Highway and Alfalfa Road

The intersection of S Powell Butte Highway and Alfalfa Road was identified in the 2005 TSP's safety analysis and carried forward in the 2017 TSP. Existing curve markers and advance stop sign warning signage is in place on Alfalfa Road, while both directions of S Powell Butte Highway feature existing curve warning sign for 45 mph and signage denoting intersection ahead and destination information.

Two alternatives are described in the sections below, including the project identified in the previous TSP.

Alternative 1: Improve Intersection Safety

This alternative identifies several safety improvements that respond to observed crash types. The addition of curve chevrons along Powell Butte Highway can increase awareness of the roadway curve and should be accompanied by review of the warning signage and its spacing relative to the curve. Additionally, installation of lighting can improve visibility for all intersection legs.

Alternative 2: Realign S Powell Butte Highway Curves

The 2005 and 2017 TSPs recommended realigning the 90 degree turns at Alfalfa Road and Shumway Road. This project would continue Powell Butte Highway south along Shumway Road and use an appropriate 50 mph curve to connect back to the existing Powell Butte Highway alignment. This alternative is not expected to have impacts on the traffic operations of the S Powell Butte Highway and Alfalfa Road intersection. Potential limitations of this alternative include the high cost expected for a significant roadway realignment.

5.2 Segment Safety

Additionally, the safety analysis evaluated five highways and Juniper Canyon Road to determine their crash rates and whether the incidence of collisions is greater than what would be expected for a segment of that type in a typical community. Each of the study roadways was divided into segments, consistent with the guidance provided in the APM (see TM #3: Transportation System Inventory and Needs Analysis for more information). In total, more than 30 segments were analyzed as part of the safety analysis; four segments were identified as exceeding their critical crash rate. Table 13 reviews those locations and includes proposed interventions to improve safety.

Table 13: Segment Safety Recommendations

Project ID	Segment Location	Safety Issue	Recommendations	Location identified in ODOT SPIS?
S-4	OR 126 east of Powell Butte Hwy to Copley Rd	• Exceeds critical crash rate • Most frequent crash types included fixed object (70%) and turning movement crashes (23%)	• Wider edge line striping • Turning movements crashes may be reduced with intersection improvements at OR 126 and Powell Butte Hwy. and at OR 126 and SW Williams Road	Yes (2018: 85-90%)
S-5	OR 370 east of Happy Hollow Dr	• Exceeds critical crash rate	• Install rumble strips. • Wider edge line striping	No
S-6	OR 380 south of NE 3rd St	• Exceeds critical crash rate	• Evaluate access management along the corridor.	No

The 2017 Crook County TSP identified additional projects based on the safety analysis conducted as part of that plan. These projects are included as part of this TSP update and are described in Table 14 below.

Table 14: 2017 TSP Safety Recommendations

Project ID	Project	Project Description	Location identified in ODOT SPIS?
S-7	Juniper Canyon Road variable speed limit	Implement variable speed limit based on weather conditions.	Yes (2018: 95-100%, 2020: 90-95%, 2021: : 90-95%)
S-8	Juniper Canyon Road alignment delineation	Add raised pavement markers to delineate alignment of the roadway for night driving on Juniper Canyon Road; add edgeline rumble strips to Juniper Canyon Road to reduce roadway departure crashes.	Yes (2018: 95-100%, 2020: 90-95%, 2021: 90-95%)
S-9	Juniper Canyon Road horizontal curve signage and markings	Add or enhance curve warning signs and pavement markings per recommendation of ODOT's Roadway Departure Plan.	Yes (2018: 95-100%, 2020: 90-95%, 2021: 90-95%)

Project ID	Project	Project Description	Location identified in ODOT SPIS?
S-10	Powell Butte Road horizontal curves pavement markings	Add or enhance curve warning signs and pavement markings per recommendation of ODOT's Roadway Departure Plan.	No
S-11	Davis Loop Road tree removal	Remove trees within the clear zone on Davis Loop Road as appropriate to reduce fixed-object crashes with trees.	Yes (2018: 85-90%)
S-12	Powell Butte (OR 126) traffic calming	Install/maintain speed feedback signs	Yes (2018: 85-90%, 2019: 85-90%, 2020: 85-90%, 2021: 85-90%)
S-13	US 26 systemic safety treatments	Add edgeline rumble strips to reduce roadway departure crashes	No
S-14	Lamonta Road horizontal curve signage, speed feedback sign, and delineators	Install oversized advanced fluorescent yellow curve warning signs with advisory speed plates beneath the advanced warning signs on Lamonta Road near NW Rye Lane, at the curve in the road.	No
S-15	OR 126 systemic safety treatments	Install edgeline and centerline rumble strips on OR 126. Further study required to understand where placement would be non-disruptive to nearby residences.	Yes (2018: 85-90%, 2019: 85-90%, 2020: 85-90%, 2021: 85-90%)

5.3 Countywide Safety Recommendations

The safety analysis also evaluated overall crash trends in the county and identified common crash characteristics and contributing factors. These characteristics and contributing factors can inform countywide recommendations to improve safety. Table 15: Countywide Safety Recommendations, Table 15 below summarizes examples of these findings.

Additionally, in 2023, Crook County received a Safe Streets and Roads for All (SS4A) grant from FHWA to complete a county-wide Safety Action Plan. This plan will build on the analysis completed in the TSP update to identify systemic safety trends and strategies for reducing crashes on county roadways. While this section explores safety alternatives based on the TSP analysis, it should be used in conjunction with strategies identified in the forthcoming Safety Action Plan.

Table 15: Countywide Safety Recommendations

Treatment	Benefit or Impact	Example Location
Install Variable Speed Limit Signs	Adjust speed limit based on factors such as weather conditions.	Juniper Canyon Rd
Increase pavement friction by install high friction surface treatment	Improves pavement friction on curves in wet conditions.	S Powell Butte Hwy
Install a speed feedback sign *Requires region traffic engineer approval if installed along an ODOT facility according to ODOT's Traffic Manual.*	Encourages drivers to slow down by showing them if they are speeding.	OR 126 near S Powell Butte Highway

Treatment	Benefit or Impact	Example Location
Install lighting (roadway segment and/or intersection)	Improves visibility for all road users.	OR 126 through Powell Butte community
Enhanced Delineation for Horizontal Curves (examples include oversized chevron signs, in-lane curve warning pavement markings, upgrade existing curve signs to fluorescent sheeting)	Can make drivers more aware and alert of curves and the size/location of curves on the roadway	S Powell Butte Highway and SW Bussett Road
Rumble Strips	Rumble strips give drivers audible and physical feedback when they start to depart lanes and can help drivers correct course. Center Line Rumble Strips: Potential reduction in head-on fatal and injury crashes on two-lane rural roads. Shoulder Rumble Strips: Potential reduction in single vehicle, run-off-road fatal and injury crashes on two-lane rural roads.	OR 126 through Powell Butte community
Wider edge line striping (considered “wider” when the striping width is increased from the minimum normal line width of 4 inches to the maximum normal line width of 6 inches)	Can give a driver a better sense of the edge of the traveled way.	OR 126 through Powell Butte community

6. Bicycle and Pedestrian Alternatives

6.1 Bicycle Alternatives

Existing bicycle facilities in Crook County include designated bike lanes, wide shoulders, and shared-use trails. However, the network is not complete or connected, as many popular cycling routes do not have shoulders or other designated bicycle facilities.

In addition to providing access to community destinations, improved bicycling routes can improve recreational cycling conditions. Crook County is a popular destination for recreational cycling, with cyclists traveling not only along roadways but also on shared-use trails, soft surface paths, and gravel trails. Recent Strava heatmaps show that OR 26, OR 27, OR 380, and NE McKay Creek Rd are well-used bike routes today, in addition to other routes across the county. Local bicycle shops, bicycle organizations, and popular recreational route websites highlight several popular areas for travel, including along OR 27 between Prineville and the Bowman Dam, in the Ochoco National Forest along routes like Ochoco Creek Road, and along OR 26 toward Ochoco Reservoir, among others. Recommended bicycle projects should consider not only opportunities to improve safety for travel along the County's roadway network but also improve connectivity between destinations, including school, stores, services, and recreational areas and trailheads.

Table 16 that follows describes location-specific recommendations as well as programmatic approaches to better support bicycling across Crook County. These recommendations include new opportunities identified as part of the TSP update as well as projects originally identified in the 2017 TSP. Location-specific projects are shown in Figure 14.

Table 16: Bicycle Alternatives

Project ID	Project Location	Project Description	Benefits/Limitations
B-1	OR 126 from SW Powell Butte Hwy to Prineville UGB limits (tying into City path).	• Construct a shared use trail along the south side of OR 126.	• **Benefits:** Provides safer, more comfortable route of travel for people walking, rolling, and biking in Powell Butte to reach community destinations. Project would provide an alternate approach to sidewalks proposed in the vicinity of OR 126 and Williams Road. • **Limitations:** Right-of-way impacts are expected.
B-2	Barnes Butte Road	Add paved shoulders to Barnes Butte Road to increase roadway width from 22 ft to 36 ft, bringing it up to future bicycle network standards (7-ft shoulders). Barnes Butte Road is a standard rural road but is close to Prineville city limits and a new school, and has evidence of high existing ridership based on Strava data.	• **Benefits:** Improves safety and comfort for bicycle travel along Barnes Butte Road and provides connections to community destinations. • **Limitations:** Project will require replacements of bridge on Barnes Butte Road to accommodate widening.

Project ID	Project Location	Project Description	Benefits/Limitations
B-3	Barnes Butte Shared-Use Trail Connections	Construct a multiuse trail to connect Barnes Butte Road to the planned Iron Horse shared use trail in Prineville.	• **Benefits:** Expands multimodal connectivity from Barnes Butte residential area of Wainwright Road to the Prineville multimodal system, as well as improved access to Barnes Butte Elementary School.
B-4	OR 27 Scenic Bikeway Bicycle Hub	Construct a bicycle hub, or "rest stop," for hikers, bicyclists, recreationalists, and community members along the OR 27 scenic bikeway corridor; provide small shelter, information kiosk (map/community calendar), bicycle tool station, and bench/sitting area. This could be coordinated with sponsors as a potential project funding mechanism.	• **Benefits:** A bicycle hub can provide needed support for people traveling along the popular OR 27 route. In addition to connecting users to information, the addition of shelter, bicycle tool station, and benches can provide vital support for longer-distance travelers.
B-5	US 26 (Madras Highway) shared-use path	Extend existing shared-use path northwest to the County line parallel to US 26. This will provide multimodal connectivity between Prineville and Madras and will connect with the current Prineville shared-use path system that ends near Green Acres Mobile Park.	• **Benefits**: Improves connectivity of existing bikeways, facilitating connections between Prineville, the County, and destinations beyond the County boundary.
B-6	Houston Lake Road, Williams Road, and Reif Road shared-use path	Construct a multiuse trail to connect Houston Lake Road, Williams Road, and Reif Road in Powell Butte.	• **Benefits:** This network is important to providing connectivity to the Cascades East Transit (CET) bus stop in Powell Butte, Powell Butte Elementary School, Prineville City limits, and OR 126.
B-7	Juniper Canyon Road (south) paved shoulders	Widen Juniper Canyon Road from Davis Loop Road South to OR 380 to provide wide shoulders. This is important to providing multimodal connectivity between the City and the Juniper Canyon residential area, which has a higher population density than much of unincorporated Crook County.	• **Benefits:** Improves connectivity between Juniper Canyon community and Prineville. Improvement should consider new Juniper Canyon access and opportunities to improve multimodal connectivity
B-8	OR 27	Install a 10-ft-wide multiuse path parallel to OR 27 to connect with the planned path in Prineville (see Prineville TSP).	• **Benefits:** Improve safety and comfort of active mode travel along a popular cycling route that has high demand for both bicycle and motor vehicle travel. • **Limitations:** Connections to recreational areas and remainder of high-use route is dependent on options for southern segments of corridor, as explored in the feasibility study outlined below. Constrained corridor may limit improvement feasibility.

Project ID	Project Location	Project Description	Benefits/Limitations
B-9	Bicycle Signage	Install wayfinding signage to Prineville Reservoir, Ochoco Reservoir, Prineville, and other major destinations. Destinations can include community locations, such as schools or services, as well as recreational areas and trailheads. This project should include the identification of a bicycle route system that may include lower volume, low speed roadways. The bicycle route system should be signed to include "Bicycle Route" and/or "Bicycles on Roadway" signage, particularly on collector and arterial roads in the County without bicycle lanes. Bicycle route maps/ wayfinding maps should be placed at key locations within the network to inform bicyclists of their best route options.	• **Benefits:** Supports designation of priority bicycle routes as well as navigation for bicycle travel in Crook County. Wayfinding signage helps connect people to destinations, provides information about distance/time to destination, and can increase user comfort and confidence. • **Limitations:** Limited shoulders/bicycle facilities or connected local roadways may limit options for promoting lower stress routes to destinations.

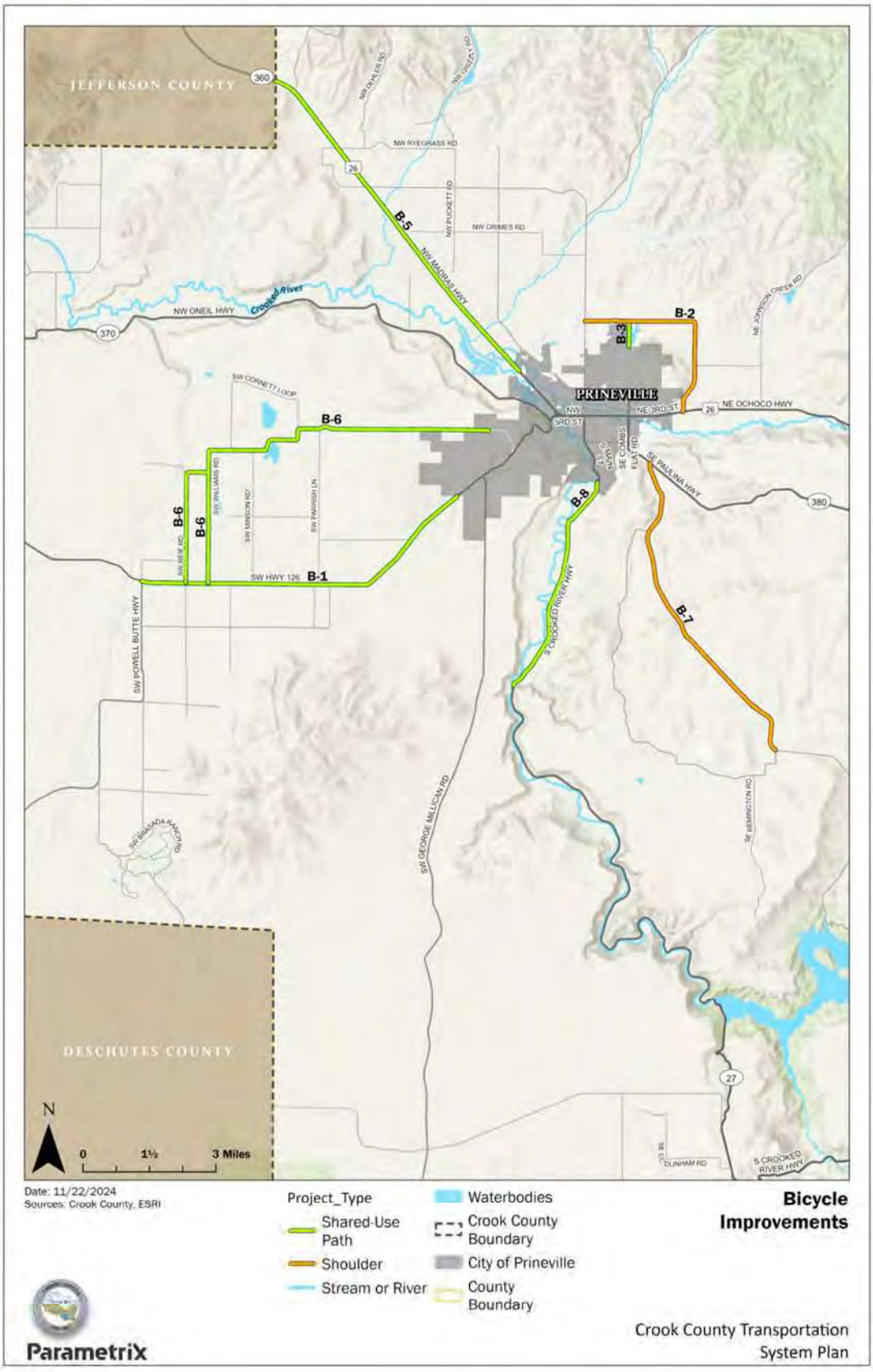


Figure 14: Bicycle Improvements

The 2017 TSP identified recommended shoulder widths for bicycle routes based on guidance adapted from the *Federal Highway Administration Small Towns and Rural Multimodal Network Guide*. As part of this TSP update, recommended shoulder widths are integrated into the functional class design recommendations identified in Table 10.

6.2 Pedestrian Alternatives

There are no existing sidewalks in unincorporated Crook County to serve people walking and rolling, including the area of OR 126 and Williams Road, which is one of few areas in the county with pedestrian-generating activities and destinations. Wide shoulders and shared use trails, where present, provide opportunities for pedestrian travel. Recommended improvements for Crook County's pedestrian system should consider opportunities to provide access and improve safety within community centers and near destinations.

The previous TSP identified pedestrian projects to improve lighting in Powell Butte along OR 126, as well as improving the crossing of OR 126 at Williams Road. These improvements seek to increase visibility, improve safety and comfort, and improve access to destinations, including a school, place of worship, and store located at the intersection of OR 126 and Williams Road. Additionally, shared use path recommendations summarized in Table 16 would also benefit pedestrian travel by providing a separated, low-stress route for active transportation travel. Proposed projects are summarized in Table 17 and described in more detail in the sections that follow.

Table 17. Pedestrian Alternatives

Project ID	Project Location	Issue	Project Description	Benefits/Limitations
P-1	OR 126 and Williams Road	• No existing sidewalks or curb ramps; limited detectable warning surfaces. • Marked crosswalk on one leg and no lighting, limiting visibility of pedestrian crossing	**P-1A:** Install sidewalk, curb and gutter, curb ramps, and lighting at the intersection with Williams Road and within the vicinity of the urban node. Install marked crosswalks on all four legs of the intersection.	**Benefits:** Improved safety and comfort for travel to community destinations; increased visibility at roadway crossings. **Limitations:** Proposed intersection improvements increase pedestrian crossing distance; no protected pedestrian crossing phase is present.
			P-1B: Install sidewalk, curb and gutter, curb ramps, and lighting at the intersection with Williams Road and within the vicinity of the urban node. Install marked crosswalks on all four legs of the intersection. Install traffic signal.	**Benefits:** Improved safety and comfort for travel to community destinations; increased visibility at roadway crossings. Signal provides dedicated pedestrian crossing phase. **Limitations:** Proposed intersection improvements increase pedestrian crossing distance.
			P-1C: Install sidewalk, curb and gutter, curb ramps, and lighting at the intersection with Williams Road and within the vicinity of the urban node. Install marked crosswalks on all four legs of the intersection. Install pedestrian refuge islands on east and west legs of intersection.	**Benefits:** Improved safety and comfort for travel to community destinations; increased visibility at roadway crossings. **Limitations:** Proposed intersection improvements increase pedestrian crossing distance.
P-2	Powell Butte Lighting and Streetscape Improvements	• Powell Butte is bisected by OR 126 and currently has no sidewalks or lighting to provide for more comfortable and safer travel in the community.	Extend pedestrian improvements along OR 126 through the Powell Butte community. Install lighting and street trees; this improvement should be completed in conjunction with B-1.	**Benefits:** Improved safety and comfort for pedestrian travel within the Powell Butte community.

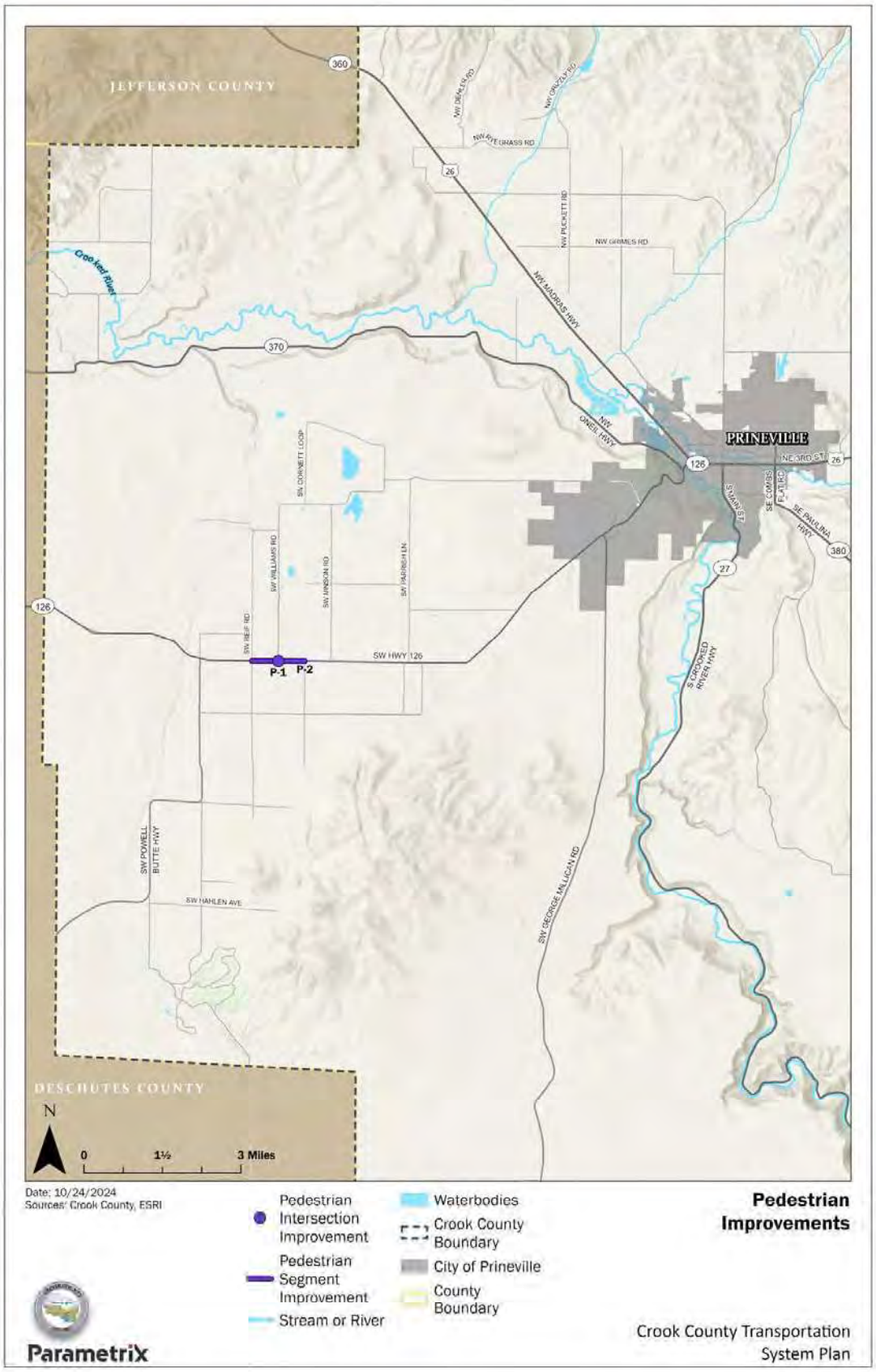


Figure 15: Pedestrian Improvements

6.2.1 OR 126 and Williams Road

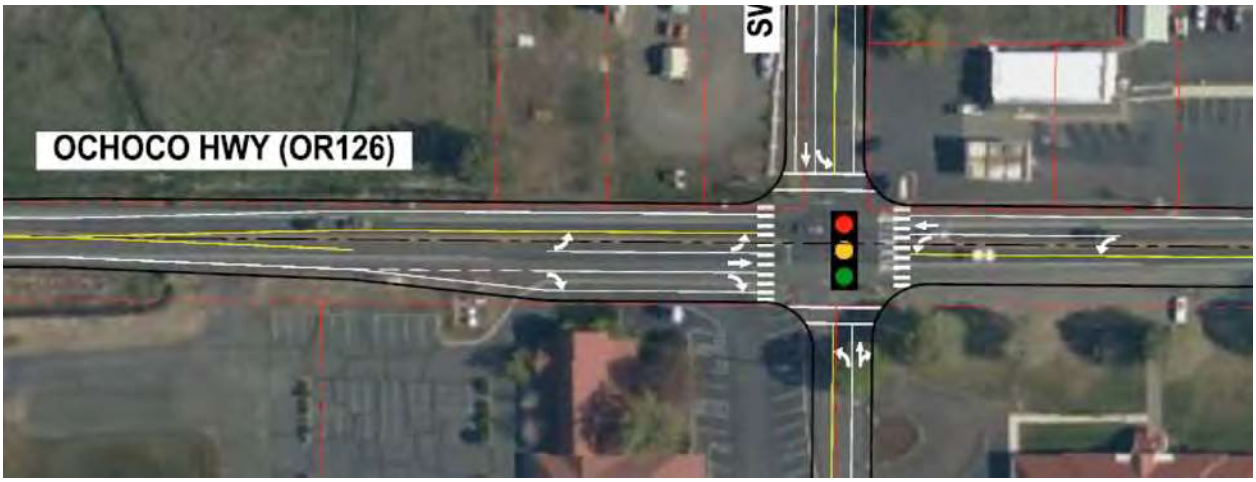
To address operational deficiencies at this intersection, three alternatives are identified in Section 4 . For each of these alternatives, pedestrian improvements aim to improve safety, improve access to adjacent destinations, and improve mobility options. All alternatives include opportunities to provide ADA-compliant curb ramps, install pedestrian scale lighting, and install sidewalk, curb, and gutter along OR 126. The addition of sidewalk will require further coordination with the school; for example, sidewalk along OR 126 just east of Williams Road is expected to impact current circulation patterns at the school. The alternatives are further described below.

P-1A: Add Left Turn Lanes on OR 126 and Stop Control on Williams Road



Alternative 1 includes marked crosswalks on all four legs of the intersection. High visibility continental crosswalk markings facilitate travel across OR 126, while standard parallel crosswalk markings delineate pedestrian travel across Williams Road. This alternative would include a flashing pedestrian-activated beacon and also formalizes driveways and provides opportunities to manage accesses, helping to increase predictability for travel in the area. This alternative, however, increase pedestrian crossing distances across OR 126.

P-1B: Add Left Turn Lanes on OR 126 and Install Traffic Signal



Alternative 2 includes crossing improvements similar to Alternative 1, as well as opportunities to formalize driveways and improve access management. However, a traffic signal provides designated crossing phases for pedestrian travel, improving safety for travel across OR 126. The signal can also have several timing plans to allow for improved circulation for all road users at school start and release. As in Alternative 1, this option also increases pedestrian crossing distance, increase exposure to motor vehicles.

P-1C: Install Pedestrian Refuge Islands on OR 126



Alternative 3 also includes crosswalk markings on all four legs, with continental markings designating travel across OR 126 and standard markings designating travel across Williams Road. In this alternative, the addition of pedestrian refuge islands on both the east and west legs of the intersection further improve pedestrian safety and comfort by creating a two-stage pedestrian crossing—creating the opportunity wait in the median area before crossing the next travel lane. Pedestrian refuge islands can also encourage slow travel speed by reducing the visual width of the roadway.

7. Public Transportation Recommendations

Public transportation services in Crook County are operated by Cascades East Transit. Existing service includes CET Dial-A-Ride in Prineville and limited locations in Crook County, as well as one fixed-service route (Route 26) with a stop in Powell Butte. CET's *2040 Transit Master Plan (*2020) identifies interest in increasing high levels of service in Crook County, including increased frequency of Route 26, expanded route coverage, and increased service for Dial-A-Ride service.

The County has stated they would support fixed route or flex route service in Prineville as needed (CET 2040 Transit Master Plan, 2020). Traditional fixed-route transit is not expected to work well in areas outside of Prineville due to the distance between locations and low-density development pattern in the unincorporated county. Public input on needs from this planning effort identified Dial-a-Ride services that include Juniper Canyon as well as a new Route 26 stop in Juniper Canyon. Expanded dial-a-ride service across the county increases opportunity for aging in place.

Table 18 below summarizes public transportation recommendations, including recommendations identified in CET's master plan as well as policies and programmatic recommendations identified in the 2017 TSP.

Table 18. Transit Recommendations

Project ID	Project Descriptions	Project Description
T-1	Crook County Service Enhancement Plan	Institute evening and Saturday limited circulation as part of Route 26 flex-route (short and mid-term) Institute evening, Saturday, and Sunday limited circulation as part of Route 26 flex-route (long-term)
T-2	Fixed route enhancements	Increase service in Prineville with eventual deviated fixed route or a purely fixed route to provide connections to more destinations.
T-3	Dial-A-Ride enhancements and Transportation Networking Company (TNC) encouragement	Improve accessibility for residents in rural Crook County through a larger service area for dial-a-ride service. Additionally, incorporate TNC elements into the current Dial-A-Ride system.
T-4	Transit community outreach	Educate the community about connections available within Redmond and Prineville to reach key destination such as Central Oregon Community College (COCC), the Redmond Airport, the hospital, and additional locations within Bend.

8. Freight Recommendations

Freight is most commonly moved by truck and by rail within the County. OR 126 and US 26 are designated ODOT freight routes, while other corridors, such as Millican Road, carry significant amounts of freight traffic within Crook County and connect to freight routes in neighboring counties. OR 126 and US 26 are both reduction review routes, meaning that the vehicle carrying capacity of the route cannot be reduced except in specific circumstances.

The 2017 TSP identified height constraints on US 26 due to the railroad trestle as the primary freight need. Due to the height constraint, traffic currently travels along Bus Evans Road and Elliot Lane, resulting in increased demand on these roads. The two projects described in Table 19 and shown in Figure 16 below aim to address these concerns.

Table 19. Freight Recommendations

Project ID	Project Location	Project Description
F-1	Bus Evans Road and Elliott Lane reconstruction to freight route standards	Reconstruct Bus Evans Road and Elliot Lane to freight route standards, with 12-ft lanes, 2-ft shoulders on each side, including 17.14 feet of rock shoulder, and the appropriate roadway base.
F-2	US 26 railroad bridge feasibility study	Conduct a feasibility study regarding the reconstruction of the US 26 railroad bridge or lowering of OR 126 to accommodate oversized loads on US 26.

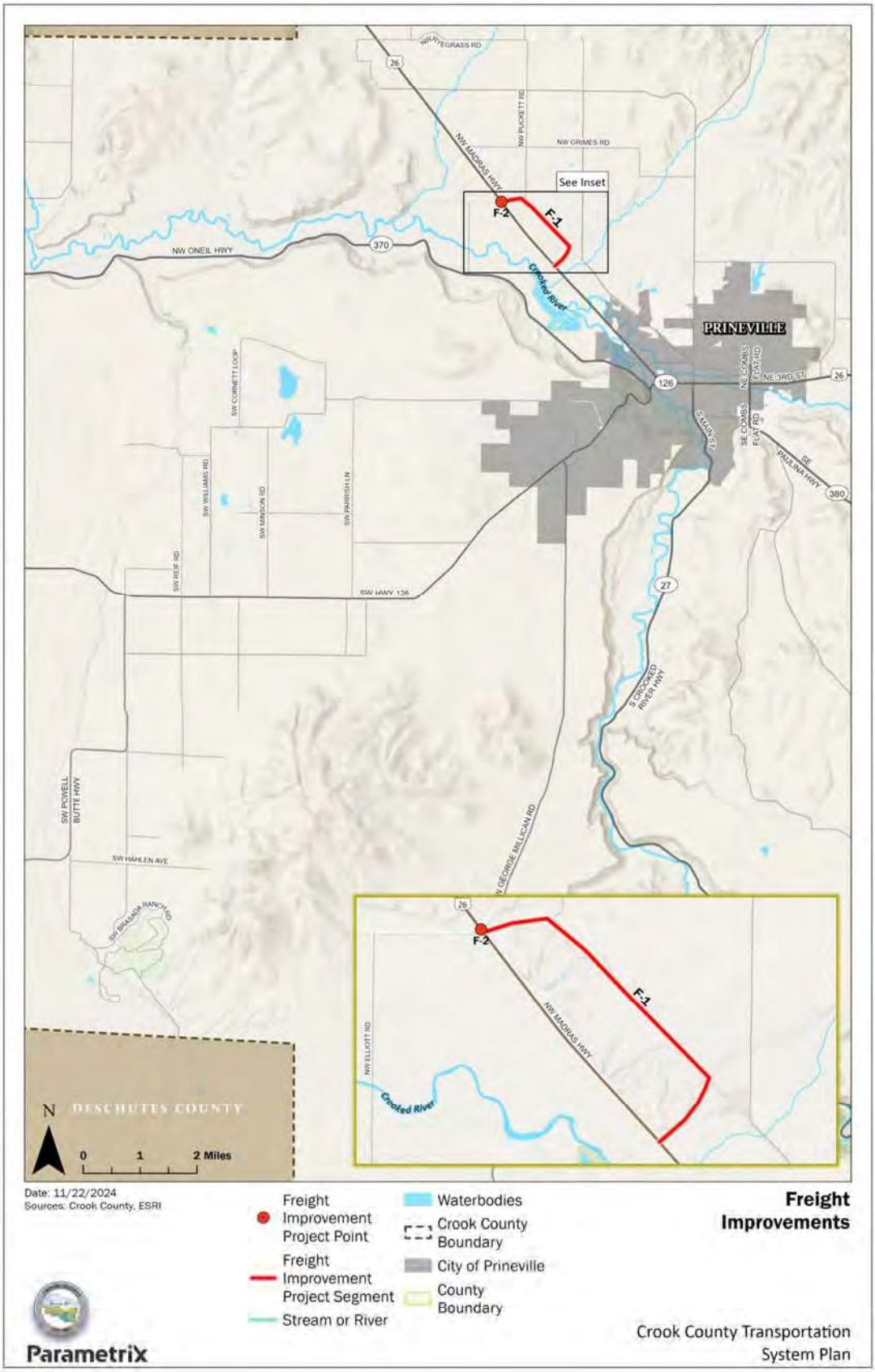


Figure 16: Freight Improvements

9. Underserved Populations

Notable demographic information from the 2022 American Community Survey's 5-Year Estimates (2023) includes:

- Crook County has a higher population of older adults (25%) compared to the state of Oregon (21%).
- Crook County has a slightly lower median household income ($74,969) compared to the state of Oregon ($76,632).
- Crook County has a slightly lower population of people who speak limited English (<1%) compared to the state of Oregon (2%).
- Crook County has a slightly higher population of people with disabilities (18%) compared to the state of Oregon (15%)

9.1 Significant Needs

Crook County's higher share of older adults and people with disabilities or mobility issues indicates a need for more robust transit services targeted at areas where older adults no longer have the desire or ability to drive. Transit routes that connect them to essential services such as grocery stores, medical care, places of worship, and community gathering places can restore a sense of mobility and independence that strengthens community relationships. Public engagement conducted as part of CET's 2020 plan update indicated that potential transit service in the form of a rural shopping and medical shuttle could be deployed in Powell Butte and Juniper Canyon.

Mobility options are highly limited within Crook County, with most travel requiring the use of a personal motor vehicle. Current ACS data indicates that 90% of workers commuted by driving alone or carpooling; however, this number does not reflect the populations who are not workers—typically the youngest and oldest of Crook County's residents, those without access to a motor vehicle, or those who desire other travel options. Expansion of transit service, construction of a connected bicycle network, and multimodal improvements within urban nodes could better serve people with multimodal travel desires as well as position Crook County as a bicycle-friendly community for bicycle tourism opportunities.

The projects recommended in the Crook County TSP Update focus primarily on improving safety for all modes of travel. Shared use paths, widened shoulders, improved lighting, and enhanced crosswalks can improve comfort and safety not only for people walking, rolling, or bicycling, but also for motor vehicle and freight travel. These improvements to increase visibility and awareness among road users and minimize potential conflict points, especially in denser areas, As Crook County invests in its transportation network, it can tailor improvements to benefit people with significant transportation needs, thereby raising the level of safety and comfort for all.

10. Evaluation

Table 20 evaluates the proposed alternatives based on the evaluation criteria developed earlier in the project process. In some cases, there are alternative approaches to addressing a given need. The recommendations made in this memorandum will be reviewed by the County, ODOT, stakeholders, and the public prior to selecting the preferred alternatives for inclusion in the updated TSP.

Note that those projects that are carried forward from other adopted plans are not evaluated further and assumed to be included as part of the updated TSP. For example, proposed transit improvements are carried forward from CET's master plan and are not evaluated further here.

Additionally, projects are assigned a preliminary timeframe for implementation: near-term (0 to 5 years), medium-term (5 to 10 years), and long-term (10+ years) based on an assessment of the relative difficulty of implementation and scale and timing of the underlying transportation needs being addressed.

Each project is evaluated and the results are indicated using the following symbols in **Table 20:**

- ● Project meets or fully addresses the criterion.
- ◖ Project partially meets or addresses the criterion.
- ○ Project does not meet or has negative impacts with respect to the criterion.
- N/A Not applicable.

In some cases, there are multiple alternatives for addressing a given transportation issue. The evaluation criteria help to determine which alternatives have the most merit for further consideration in the updated TSP.

Improvements are identified as near-term (0 to 5 years), medium-term (5 to 10 years), and long-term (10+ years) based on their perceived level of implementation difficulty, as well as on the timing and scale of the need a given project address.

Finally, costs are provided for many of the solutions listed in the table that follows. For those solutions that are clearly fatally flawed (e.g., where a solution would worsen traffic mobility compared to No Build or decrease safety), the project team did not generate a cost for those projects.

Table 20. Alternatives Evaluation

				Evaluation Criteria									
Project Number	Project Type	Project Name/Location	Project Description	Mobility / Connectivity	Economic Development	Safety	Multimodal Users	Environment	Planning / Funding	Equity	Cost	Recommended?	Implementation Time Frame
R-1	Roadway - Operations	SW Powell Butte Highways & Ochoco Highway/OR 126	Install a single-lane roundabout.	◖	●	◖	◖	○	●	◖	$3,400,000	Yes	Mid-Term
			Install a multi-lane roundabout.,	●	◖	◖	◖	○	◖	○	$4,000,000	Yes – when traffic warrants	Mid-Term
R-2	Roadway - Operations	SW Williams Road & Ochoco Highway/OR 126	Alternative 1: Add left turn lanes on OR 126; add right turn lane on west leg of intersection.	●	●	◖	◖	○	●	○	$1,700,000	Yes	Mid-Term
			Alternative 2: Add left turn lanes on OR 126, add right turn lane on west leg of intersections, and install traffic signal	◖	◖	●	●	○	○	●	N/A	No.	Mid-Term
			Alternative 3: Install Pedestrian Refuges on OR 126; add right turn lane on west leg of intersection.	◖	◖	●	●	○	●	●	N/A	No	Mid-Term
			Alternative 4: Bypass around the Powell Butte community. Right-of-way could significantly increase costs.								$5,800,000	No	
R-3	Roadway - Operations	SW Parrish Lane & Ochoco Highway/OR 126	Widen OR 126 from SW Valley View Road to Stillman Road (Center Two-Way Left-Turn Lane)	●	◖	◖	○	○	●	○	$900,000	Yes	Near-Term
R-4	Roadway - Operations	SE Juniper Canyon Road & SE Paulina Highway/OR 380	Alternative 1: Realign intersection with left acceleration lane	●	●	◖	○	○	◖	○	$2,100,000	No	Long-Term
			Alternative 2: Realign Intersection, Install Traffic Signal	◖	●	●	●	○	◖	○	N/A	No	Long-Term
			Alternative 3: Install roundabout with slip lane	◖	●	◖	◖	○	○	○	$3,200,000	Yes	Long-Term
R-5	Roadway - Access Improvements	OR 126 at Kissler Road	Access management	◖	◖	●	◖	N/A	◖	N/A	$20,000	Yes	Mid-Term
R-6	Roadway - Access Improvements	OR 126 at Copley Road	Access management	◖	◖	●	◖	N/A	◖	N/A	$20,000	Yes	Mid-Term
R-7	Roadway - Access Improvements	OR 126 at Minson Road	Access management	◖	◖	●	◖	N/A	◖	N/A	$20,000	Yes	Mid-Term
R-8	Roadway - Access Improvements	OR 126 at Yates Road	Access management	◖	◖	●	◖	N/A	◖	N/A	$20,000	Yes	Mid-Term
R-9	Roadway - Access Improvements	OR 126 at Wiley Road	Access management	◖	◖	●	◖	N/A	◖	N/A	$20,000	Yes	Mid-Term
BR-1	Bridge Replacement	County Road 221 bridge over Paulina Creek (NBI Bridge 19083)	Conduct a study to evaluate the cost of replacing or repairing this bridge. The bridge is functionally obsolete.	●	◖	◖	○	◖	◖	○	$30,000	Yes	Mid-Term
BR-2	Bridge Replacement	Powell Butte Highway bridge over Powell Butte	Replace the Powell Butte Highway bridge over the Powell Butte Canal.	●	◖	◖	○	◖	◖	○	$1,500,000	Yes	Mid-Term

				Evaluation Criteria									
Project Number	Project Type	Project Name/Location	Project Description	Mobility / Connectivity	Economic Development	Safety	Multimodal Users	Environment	Planning / Funding	Equity	Cost	Recommended?	Implementation Time Frame
		Canal (NBI Bridge 03291)											
BR-3	Bridge Replacement	Powell Butte Highway bridge over Powell Butte Wasteway (NBI Bridge 03293)	Replace the Powell Butte Highway bridge over the Powell Butte Wasteway.	●	◖	◖	○	◖	◖	○	$1,500,000	Yes	Mid-Term
BR-4	Bridge Replacement	Johnson Creek Road NE bridge over Ochoco Main Canal (NBI Bridge 13C06A)	Replace the Johnson Creek Road NE Bridge over the Ochoco Main Canal.	●	◖	◖	○	◖	◖	○	$1,500,000	Yes	Mid-Term
BR-5	Bridge Replacement	Non-NBI bridge replacement program	Continue to replace one non-NBI bridge per year at approximately $150,000 per bridge. When replaced, each bridge should be built at least 21 feet long when possible to be eligible for federal funding in the future.	●	◖	◖	○	◖	◖	○	$4,500,000	Yes	Mid-Term
ITS-1	ITS	OR 126 at Parrish and Minson	Variable Messaging Signs	◖	◖	◖	N/A	◖	◖	N/A	TBD based on future study	Yes	Near-Term
ITS-2	ITS	Powell Butte Highway and OR 126	Road Weather Information System	◖	◖	◖	◖	◖	◖	N/A	TBD based on future study	Yes	Near-Term
ITS-3	ITS	Juniper Canyon Road	Variable speed limit	◖	◖	●	◖	◖	◖	N/A	TBD based on future study	Yes	Near-Term
S-1	Safety	S Powell Butte Highway & SW Bussett Road	Reconstruct intersection to simplify circulation patterns and turning movements. Install rumble strips along the curve. Implement variable speed limits that lower in icy conditions. Install lighting. Reassess curve warning signage and check sign spacing. Install acceleration lanes on S Powell Butte Highway.	●	●	●	◖	○	●	◖	$870,000	Yes	Long-Term
S-2	Safety	Rimrock Acres Loop & NW O'Neil Highway	Install lighting. Install raised pavement markings. Evaluate existing curve warning signage locations and warning speeds. Install curve chevrons, guardrail, and rumble strips.	●	●	●	◖	○	●	◖	$180,000	Yes	Mid-Term
S-3	Safety	S Powell Butte Highway & Alfalfa Road	S-3A: Install lighting. Install curve chevrons along Powell Butte. Reassess curve warning signage and check for sign spacing.	●	●	●	◖	○	●	◖	$71,000	Yes	Near-Term
			S-3B: Realign S Powell Butte Highway	●	●	◖	◖	○	○	◖	N/A	No	Long-Term
S-4	Safety	OR 126 east of Powell Butte Hwy to Copley Rd	Widen edge line striping. Turning movements crashes may be reduced with intersection improvements at OR 126 and Powell Butte Hwy and at OR 126 and SW Williams Road.	●	●	●	◖	○	●	◖	$260,000	Yes	Near-Term
S-5	Safety	OR 370 east of Happy Hollow Dr	Install rumble strips and/or wider edge line striping .	●	●	●	◖	○	●	◖	$22,000	Yes	Near-Term
S-6	Safety	OR 380 south of NE 3rd St	Evaluate access management along the corridor.	●	●	●	◖	○	●	◖	N/A	Yes	Near-Term
S-7	Safety	Juniper Canyon Road variable speed limit	Implement variable speed limit based on weather conditions.	●	●	●	◖	○	●	◖	TBD based on future evaluation	Yes	Near-Term

				Evaluation Criteria									
Project Number	Project Type	Project Name/Location	Project Description	Mobility / Connectivity	Economic Development	Safety	Multimodal Users	Environment	Planning / Funding	Equity	Cost	Recommended?	Implementation Time Frame
S-8	Safety	Juniper Canyon Road alignment delineation	Add raised pavement markers to delineate alignment of the roadway for night driving on Juniper Canyon Road; add edgeline rumble strips to Juniper Canyon Road to reduce roadway departure crashes.	●	●	●	◖	○	●	◖	$94,000	Yes	Near-Term
S-9	Safety	Juniper Canyon Road horizontal curve signage and markings	Add or enhance curve warning signs and pavement markings per recommendation of ODOT's Roadway Departure Plan.	●	●	●	◖	◖	●	◖	$10,000	Yes	Near-Term
S-10	Safety	Powell Butte Road horizontal curves pavement markings	Add or enhance curve warning signs and pavement markings per recommendation of ODOT's Roadway Departure Plan.	●	●	●	◖	◖	●	◖	$10,000	Yes	Near-Term
S-11	Safety	Davis Loop Road tree removal	Remove trees within the clear zone on Davis Loop Road as appropriate to reduce fixed-object crashes with trees.		●	●	◖	◖	●	◖	TBD based on further study	Yes	Mid-Term
S-12	Safety	Powell Butte (OR 126) traffic calming/speed reductions	Install/maintain speed feedback signs.	●	●	●	◖	◖	●	◖	$50,000	Yes	Mid-Term
S-13	Safety	US 26 systemic safety treatments	Add edgeline rumble strips to reduce roadway departure crashes	●	●	●	◖	◖	●	◖	$50,000	Yes	Mid-Term
S-14	Safety	Lamonta Road horizontal curve signage, speed feedback sign, and delineators	Install oversized advanced fluorescent yellow curve warning signs with advisory speed plates beneath the advanced warning signs on Lamonta Road near NW Rye Lane, at the curve in the road.	●	●	●	◖	◖	●	◖	$50,000	Yes	Mid-Term
S-15	Safety	OR 126 systemic safety treatments	Install edgeline and centerline rumble strips on OR 126. Further study required to understand where placement would be non-disruptive to nearby residences.	●	●	●	◖	◖	●	◖	$50,000	Yes	Mid-Term
B-1	Bicycle - SUP	OR 126 from SW Powell Butte Hwy to Prineville UGB limits.	Construct a shared use trail along the south side of OR 126. Right-of-way acquisitions and/or environmental and wetland mitigation measures could significantly increase costs.	●	●	●	●	●	●	●	$6,600,000	Yes	Mid-Term
B-2	Bicycle - Shoulder	Barnes Butte Road	Add paved shoulders (minimum 6') to Barnes Butte Road.	●	◖	●	●	●	◖	●	$3,800,000	Yes	Long-Term
B-3	Bicycle - SUP	Barnes Butte Multi-Use Trail Connections	Construct a multiuse trail to connect Barnes Butte Road to the planned Iron Horse shared use trail in Prineville.	●	●	●	●	●	●	●	$4,900,000	Yes	Long-Term
B-4	Bicycle	OR 27 Scenic Bikeway Bicyle Hub	Construct a bicycle hub, or "rest stop," for hikers, bicyclists, recreationalists, and community members along the OR 27 scenic bikeway corridor.	●	●	●	●	●	◖	●	$30,000	Yes	Mid-Term
B-5	Bicycle - SUP	US 26 (Madras Highway)	Extend existing shared-use path northwest to the County line parallel to US 26.	●	●	●	●	●	●	●	$7,100,000	Yes	Mid-Term
B-6	Bicycle	Houston Lake Road, Williams Road, and Reif	Construct a multiuse trail to connect Houston Lake Road, Williams Road, and Reif Road in Powell Butte.	●	●	●	●	●	●	●	$10,500,000	Yes	Long-Term

				Evaluation Criteria									
Project Number	Project Type	Project Name/Location	Project Description	Mobility / Connectivity	Economic Development	Safety	Multimodal Users	Environment	Planning / Funding	Equity	Cost	Recommended?	Implementation Time Frame
		Road shared use paths											
B-7	Bicycle	Juniper Canyon Road (south) paved shoulders	Widen Juniper Canyon Road from Davis Loop South to OR 380 to provide wide shoulders.	●	◖	●	●	●	◖	●	$5,400,000	Yes	Long-Term
B-8	Bicycle - SUP	OR 27	Install a 10-ft-wide multiuse path parallel to OR 27 to connect with the planned path in Prineville.	●	●	●	●	●	●	●	$4,400,000	Yes	Mid-Term
B-9	Bicycle	Countywide	Install wayfinding signage to Prineville Reservoir, Ochoco Reservoir, Prineville, and other major destinations.	●	●		●	●	◖	●	$50,000	Yes	Mid-Term
P-1	Pedestrian	OR 126 and Williams Road	P-1A: Install sidewalk, curb and gutter, curb ramps, and lighting at the intersection with Williams Road and within the vicinity of the urban node. Install marked crosswalks on all four legs of the intersection and a flashing pedestrian-activated beacon.	●	●	●	●		◖	●	$2,900,000	Yes	Mid-Term
			P-1B: Install sidewalk, curb and gutter, curb ramps, and lighting at the intersection with Williams Road and within the vicinity of the urban node. Install marked crosswalks on all four legs of the intersection. Install traffic signal.	●	●		●	●	◖	●	N/A	No	Mid-Term
			P-1C: Install sidewalk, curb and gutter, curb ramps, and lighting at the intersection with Williams Road and within the vicinity of the urban node. Install marked crosswalks on all four legs of the intersection. Install pedestrian refuge islands on east and west legs of intersection.	●	●	●	●	●	◖	●	N/A	No	Mid-Term
T-1	Public Transportation	Crook County Service Enhancement Plan	Institute evening and Saturday limited circulation as part of Route 26 flex-route (short and mid-term). Institute evening, Saturday, and Sunday limited circulation as part of Route 26 flex-route (long-term)	●	●	●	●	●	○	●	N/A	Yes	Long-Term
T-2	Public Transportation	Fixed route enhancements	Increase service in Prineville with eventual deviated fixed route or a purely fixed route to provide connections to more destinations	●	●	●	●	●	○	●	N/A	Yes	Long-Term
T-3	Public Transportation	Dial-A-Ride enhancements and Transportation Networking Company (TNC) encouragement	Improve accessibility for residents in rural Crook County through a larger service area for dial-a-ride service. Additionally, incorporate TNC elements into the current Dial-A-Ride system.	●	●	●	●	●	○	●	N/A	Yes	Mid-Term
T-4	Public Transportation	Transit community outreach	Educate the community about connections available within Redmond and Prineville to reach key destination such as Central Oregon Community College (COCC), the Redmond Airport, the hospital, and additional locations within Bend.	●	●	●	●	●	○	●	N/A	Yes	Mid-Term
F-1	Freight	Bus Evans Road and Elliott Lane reconstruction to freight route standards	Reconstruct Bus Evans Road and Elliot Lane to freight route standards, with 12-ft lanes, 2-ft shoulders on each side, including 17.14 feet of rock shoulder, and the appropriate roadway base.	●	●	◖	◖	○	◖	◖	$15,000,000	Yes	Long-Term

				Evaluation Criteria									
Project Number	Project Type	Project Name/Location	Project Description	Mobility / Connectivity	Economic Development	Safety	Multimodal Users	Environment	Planning / Funding	Equity	Cost	Recommended?	Implementation Time Frame
F-2	Freight	US 26 railroad bridge feasibility study	Conduct a feasibility study regarding the reconstruction of the US 26 railroad bridge or lowering of OR 126 to accommodate oversized loads on US 26.	●	●	◖	◖	○	◖	◖	$35,000	Yes	Mid-Term

11. Funding

11.1 County Budget and Expenditures

Crook County's capital projects, operations, and maintenance of roadways are funded through the Crook County Transportation Budget, which relies on various sources. The Crook County Road Fund relies on fuel tax paid to the County based on the number of vehicles registered to the County, as well as Rural Schools (SRS) funding. For FY 2024, the County identified two improvement projects, including:

- Powell Butte South, chipseal
- Barnes Butte, estimate 2.1 miles overlay

Additionally, the Special Transportation Fund accounts for federal and state transportation programs, where Crook County typically enters into intergovernmental agreements with Central Oregon Intergovernmental Council (COIC) to perform these services.

The figures that follow outline the expenditures for 2021 and 2022, as well as the budgets for 2023 and 2024.

BUDGET (AMOUNTS IN THOUSANDS)

	2021 ACTUALS	2022 ACTUALS	2023 ADJ BUDGET	2023 YE ESTIMATE	2024 PROPOSED	2024 APPROVED	2024 ADOPTED
Resources							
Beginning Fund Balance	$ 16,283	$ 16,379	$ 15,970	$ 16,063	$ 15,050	$ 15,050	$ 15,050
Revenue							
Intergovernmental	3,781	3,963	4,997	4,350	4,459	4,459	4,459
Transfers and Interfund	105	-	-	-	-	-	-
Licenses, Permits & Fees	25	31	21	21	21	21	21
Charges for Services	24	213	6	49	36	36	36
Miscellaneous	147	83	150	313	500	500	500
Total Revenue	**4,083**	**4,290**	**5,174**	**4,733**	**5,016**	**5,016**	**5,016**
Total Resources	**20,366**	**20,669**	**21,144**	**20,796**	**20,066**	**20,066**	**20,066**
Requirements							
Appropriation							
Personnel	$ 1,731	$ 1,830	$ 1,902	$ 1,911	$ 2,066	$ 2,066	$ 2,066
Materials & Services	2,063	2,519	3,187	2,528	3,127	3,132	3,132
Capital Outlay	193	257	1,405	1,307	305	305	305
Transfers	-	-	-	-	155	150	150
Contingency	-	-	931	-	1,000	1,000	1,000
Total Appropriation	**3,987**	**4,606**	**7,425**	**5,746**	**6,653**	**6,653**	**6,653**
Other Requirements							
Reserved for Future Expenditure	-	-	13,719	-	13,413	13,413	13,413
Total Requirements	**$ 3,987**	**$ 4,606**	**$ 21,144**	**$ 5,746**	**$ 20,066**	**$ 20,066**	**$ 20,066**

Figure 17: FY 2024 Road Fund Adopted Budget

BUDGET (AMOUNTS IN THOUSANDS)

	2021 ACTUALS	2022 ACTUALS	2023 ADJ BUDGET	2023 YE ESTIMATE	2024 PROPOSED	2024 APPROVED	2024 ADOPTED
Resources							
Beginning Fund Balance	$ 286	$ 435	$ 603	$ 671	$ 754	$ 754	$ 754
Revenue							
Intergovernmental	324	390	393	368	431	431	431
Miscellaneous	4	2	4	15	15	15	15
Total Revenue	**328**	**392**	**397**	**383**	**446**	**446**	**446**
Total Resources	**614**	**828**	**1,000**	**1,054**	**1,200**	**1,200**	**1,200**
Requirements							
Appropriation							
Materials & Services	$ 179	$ 157	$ 402	$ 300	$ 800	$ 800	$ 800
Contingency	-	-	598	-	400	400	400
Total Appropriation	**179**	**157**	**1,000**	**300**	**1,200**	**1,200**	**1,200**
Total Requirements	$ 179	$ 157	$ 1,000	$ 300	$ 1,200	$ 1,200	$ 1,200

Figure 18: FY 2024 Special Transportation Fund Adopted Budget

The County's largest expenditure under the Road Fund is the maintenance of roads. When forecasting for future budgets, the adopted 2024 budget notes that "maintaining operations at the historical status quo continues to spend down fund balance." In particular, the forecast identifies a significant increase in maintenance expenditures compared to historical trends. The forecast through FY 2028 is shown in Figure 19. The Department is exploring more sustainable operations and funding, including seeking additional revenue and updating annual costs to maintain the County road system at or above the target 70 Pavement Condition Index rating.

	ADOPTED FY 2024	ESTIMATE FY 2024	FORECAST FY 2025	FORECAST FY 2026	FORECAST FY 2027	FORECAST FY 2028
Beginning Fund Balance	$ 15,050	$ 15,200	$ 14,740	$ 14,144	$ 13,334	$ 12,483
Revenue	5,016	5,016	4,897	4,898	4,969	4,978
Total Resources	20,066	20,216	19,637	19,042	18,303	17,460
Expenditures						
Personnel	$ 2,066	$ 2,015	$ 2,151	$ 2,259	$ 2,353	$ 2,451
Materials & Services	3,132	3,007	3,097	3,159	3,222	3,286
Capital Outlay	305	305	245	290	245	250
Transfers	150	150	-	-	-	-
Total Expenditures	5,653	5,476	5,493	5,708	5,820	5,988
ENDING FUND BALANCE	$ 14,413	$ 14,740	$ 14,144	$ 13,334	$ 12,483	$ 11,473
Ratio Fund Balance to Expenditures	255%	269%	257%	234%	214%	192%
FTE	**20.0**	**20.35**	**20.35**	**20.35**	**20.35**	**20.35**

Figure 19: Road Fund Forecast FY 2024 - FY 2028 (in thousands)

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11.2 Funding Options

A variety of established funding sources from federal, state, and regional sources are available to fund future transportation projects in Crook County. Table 21 provides an overview of potential grants, funding dollar amount, eligibility, and other considerations.
Table 22 summarizes potential local funding and financing options available to the County.

Table 21: Grant Opportunities

Source	Funding Available	Description	Eligibility and Considerations
Statewide Transportation Improvement Program (STIP) *Administered by ODOT*	Approximately $2 billion available statewide for the 2024-2027 STIP. Match requirements vary.	The STIP is the major statewide program for funding significant projects, usually of regional importance. The STIP programs both state and federal dollars.	Major projects on state roadways through Crook County are most likely eligible for funding, though the STIP process is extremely competitive. Projects included in the STIP are generally regionally significant and are prioritized by ODOT, metropolitan planning organizations, and area commissions on transportation.
Recreational Trails Program *Administered by OPRD*	Approximately $1.6M allocated each year. Minimum grant request: $10,000. Recommended grant request maximum: $150,000 for non-motorized proposals. Applicants must commit to at least 20% match. Match can include volunteer labor or other donations.	Funds to develop, improve, or expand motorized and non-motorized trails and their facilities. RTP funding is intended for recreational trail projects and can be used for construction of new trails, major rehabilitation of existing trails, development or improvement of trailhead or other support facilities, acquisition of land or easements for the purpose of trail development, and safety and education projects.	This funding source is very competitive, and funding is generally based on the needs identified in the Oregon Statewide Trails Plan.
Oregon Community Paths *Administered by ODOT*	Project Refinement funding: $150,000 to $750,000 per project. Construction funding: $500,000 to $6,000,000 per project. 10% to 30% depending on funding source (federal or state)	Supports multiuse path projects; including paths that pass through a park, along a greenway, to connect community centers, services, housing, employment, schools, and recreation. Types of community path projects: 1) Critical Links – walking and biking connections to schools, downtowns, shopping, employment, and other essential destinations 2) Regional Paths - connecting communities no more than 15 miles apart, or traverses one community with a path 10 miles long or greater	OCP projects must serve a transportation purpose (not recreational). TSP is likely to include projects that fall under the “Critical Links” project type.
Safe Routes to School (SRTS) *Administered by ODOT*	$60,000 to $2,000,000 New funding program guidance is under development by ODOT. 20% to 40% match required.	Projects that improve, educate, or encourage children safely walking or biking to school. Projects within a one-mile radius of a school, within a local roadway, and in a jurisdictional plan. Projects in smaller communities, for elementary and middle schools, and that can demonstrate substantial need are likely to fare best.	Because the Crook County TSP is likely to include projects that would have a direct impact on cycling and walking to school in Powell Butte, SRTS is likely a promising source of funding for projects.

Source	Funding Available	Description	Eligibility and Considerations
Sidewalk Improvement Program (SWIP) *Administered by ODOT*	$7.4 million annually for federal fiscal years 2022 to 2024. No match is required. State Pedestrian and Bicycle funds can be used as a match for federal dollars.	Allocates funds to improve walking and biking infrastructure (e.g., crossings, sidewalks, bike facilities) on or along state highways. Provides grants on a rotating regional basis to construct larger pedestrian and bicycle projects (or bundles of systemic improvements) needed to address priority needs identified in the Oregon Bicycle and Pedestrian Plan (OBPP) and Active Transportation Needs Inventory (ATNI).	Eligible for improvements on or along state highways. ATNI web map shows prioritization scores within Crook County ranging from the 60th to 80th percentile.
Statewide Transportation Improvement Fund (STIF) *Administered by ODOT*	Funding amount varies. There is no match for STIF formula, STIF Discretionary match is generally 20%. STIF formula funds may be used as the local match for state and federal funds which also provide Public Transportation. STIF discretionary funding is used for new or pilot projects and for capital purchases.	STIF formula funds may be used for public transportation purposes that support the effective planning, deployment, operation, and administration of public transportation programs. The STIF Discretionary fund supports a wide variety of project types but cannot be used to fund ongoing operations. The Intercommunity Discretionary fund supports maintaining, expanding, and improving public transportation services between two or more communities. The Oregon Transportation Commission finalizes award decisions using criteria derived from statute and the Oregon Public Transportation Plan.	STIF formula funding is awarded through the Qualified Entity (QE) which is a County or Transit District, based on population and taxes paid within their geographic area. STIF Discretionary and Intercommunity Discretionary funds are awarded to Public Transportation Service Providers to improve public transportation through a competitive grant process.
Rivers, Trails, and Conservation Assistance Program *Administered by National Park Service*	Funding amount varies.	Annual funding available for technical assistance for recreation and conservation projects, including shared-use paths. No local math is required.	This fund has advanced projects in Crook County in both 2020 and 2022, supporting both the Barnes Butte Recreational Complex and Crooked River National Grasslands Trails efforts. Projects related to recreational areas and access to recreational areas may qualify.
All-Roads Transportation Safety program *Administered by ODOT*	Funding amount varies.	Annual funding for project that address safety issues on highways and High Risk Rural Roads. A 10% local match is required.	Projects are typically identified through the state's Safety Priority Index System or systemic network screening. Projects are awarded based on benefit/cost ratio.

Source	Funding Available	Description	Eligibility and Considerations
Federal Lands Access Program *Administered by FHWA*		Projects that improve transportation facilities that provide access to, are adjacent to, or are located within federal lands.	Projects that improve access to federal lands, such as BLM, are eligible. Many proposed projects expand access to BLM land.
Transportation Growth Management Program (TGM) *Administered by ODOT*	Varies; annual grant cycles.	Projects that help local communities plan for streets and land use to create more livable communities. Category 1 TGM grants focus on meeting the requirements for the Transportation Planning Rule, while category 2 TGM grants focus on integrated land use and transportation planning , especially active transportation, transit, and multimodal facilities.	Category 2 TGM projects aim to encourage "livable, affordable, and accessible communities for all ages and incomes…" Advancing projects that aim to improve access to transit and community destinations may be eligible for funding.
Land and Water Conservation Fund *Administered by OPRD*	Approximately $5 million annually.	Acquiring land for public outdoor recreation or develop basic outdoor recreation facilities. Project types may include shared-use pathways, bikeways, and sidewalks. Requires a 50% local match.	Projects identified in the TSP include shared-use pathways, bikeways, and sidewalks that may be eligible.

Table 22. Potential Local Funding and Financing Mechanisms

Local Funding / Financing Option	Description	Considerations
User Fee	Fees added to a monthly utility bill or tied to the annual registration of a vehicle to pay for improvements, expansion, and maintenance on the street system.	This type of fee is becoming more common in cities but would require substantial investment in rate studies, administrative staffing, and software and computer systems to enable the County to collect the revenue. This source is generally better suited to funding operations than for capital improvements, but it may free up existing resources for capital projects.
System Development Charges (SDCs)	One-time fees obtained from new development and redevelopment intended to cover part of the cost of transportation facilities to support the new development.	Fees will increase the cost of development for developers. The County will determine the appropriate fee to cover transportation costs while also ensuring that development remains affordable for developers.
Local Gas Tax	A local tax assessed on the purchase of gas within the County. This tax is added to the cost of gasoline at the pump, along with the state and federal gas taxes. Many communities in Oregon assess local gas taxes, typically ranging from $0.01 to $0.10 per gallon.	A local-option fuel tax would be easy to collect because the infrastructure is already in place. Would generate revenue for the county from motorists passing through the county. This method could fund operations and capital programs.

Local Funding / Financing Option	Description	Considerations
Tax Increment Financing (TIF)	A tool counties use to create special districts (tax increment areas) where public improvements are made in order to generate private-sector development. During a defined period, the tax base is frozen at the pre-development level. Property taxes for that period can be waived or paid, but taxes derived from increases in assessed values (the tax increment) resulting from new development can go into a special fund created to retire bonds issued to originate the development or leverage future improvements.	A number of small-to-medium sized communities in Oregon have implemented, or are considering implementing, urban renewal districts that will result in a TIF revenue stream
Road/Local Improvement Districts (LID)	A local improvement district is a geographic area where local property owners are assessed a fee to cover the cost of a public improvement in that area.	This may be especially useful for non-state facilities that are ineligible for federal or state funding. This type of fee must be approved by the majority of property owners.
General Fund	Property taxes from the County's permanent tax rate.	Diverting general fund revenue to the Road Fund would have significant consequences for other County services.
Bonds or Levies	Voter approved measures to either acquire funds through an increased tax rate (levy) or through the sale of bonds.	Requires voter approval.
Motor Vehicle Title Fee	Requires all motor vehicles registered in the county to all have title recorded as personal property.	This would generate two sources of revenue: from the fee itself and from personal property taxes levied on motor vehicles. This could be problematic for renters and would increase taxable property that the assessor must account for.

Attachment A

Traffic Analysis Results

Intersection	
Int Delay, s/veh	10.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	1420	5	5	1200	5	5	5	5	5	5	70
Future Vol, veh/h	65	1420	5	5	1200	5	5	5	5	5	5	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	100	100	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	4	50	0	4	0	0	0	25	0	0	0
Mvmt Flow	65	1420	5	5	1200	5	5	5	5	5	5	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1205	0	0	1425	0	0	2800	2765	1420	2771	2768	1203
Stage 1	-	-	-	-	-	-	1550	1550	-	1213	1213	-
Stage 2	-	-	-	-	-	-	1250	1215	-	1558	1555	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.45	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	2.218	-	-	2.2	-	-	3.5	4	3.525	3.5	4	3.3
Pot Cap-1 Maneuver	579	-	-	484	-	-	12	20	148	13	20	227
Stage 1	-	-	-	-	-	-	144	177	-	224	257	-
Stage 2	-	-	-	-	-	-	214	256	-	143	176	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	579	-	-	484	-	-	6	18	148	9	18	227
Mov Cap-2 Maneuver	-	-	-	-	-	-	6	18	-	9	18	-
Stage 1	-	-	-	-	-	-	128	157	-	199	254	-
Stage 2	-	-	-	-	-	-	144	253	-	119	156	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	$ 595.3	254.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	9	148	579	-	-	484	-	-	70
HCM Lane V/C Ratio	1.111	0.034	0.112	-	-	0.01	-	-	1.143
HCM Control Delay (s)	$ 877.9	30.2	12	-	-	12.5	-	-	254.3
HCM Lane LOS	F	D	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2	0.1	0.4	-	-	0	-	-	6.1

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	1420	5	5	1200	5	5	5	5	5	5	70
Future Volume (veh/h)	65	1420	5	5	1200	5	5	5	5	5	5	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1159	1900	1841	1900	1900	1900	1530	1900	1900	1900
Adj Flow Rate, veh/h	65	1420	5	5	1200	5	5	5	5	5	5	70
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	4	50	0	4	0	0	0	25	0	0	0
Cap, veh/h	83	1307	697	10	1224	5	101	65	67	53	7	73
Arrive On Green	0.05	0.71	0.71	0.01	0.67	0.67	0.05	0.05	0.05	0.05	0.05	0.05
Sat Flow, veh/h	1781	1841	982	1810	1832	8	607	1248	1296	70	133	1419
Grp Volume(v), veh/h	65	1420	5	5	0	1205	10	0	5	80	0	0
Grp Sat Flow(s),veh/h/ln	1781	1841	982	1810	0	1839	1855	0	1296	1622	0	0
Q Serve(g_s), s	2.8	54.8	0.1	0.2	0.0	48.6	0.0	0.0	0.3	2.6	0.0	0.0
Cycle Q Clear(g_c), s	2.8	54.8	0.1	0.2	0.0	48.6	0.4	0.0	0.3	3.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.50		1.00	0.06		0.87
Lane Grp Cap(c), veh/h	83	1307	697	10	0	1230	166	0	67	134	0	0
V/C Ratio(X)	0.78	1.09	0.01	0.52	0.00	0.98	0.06	0.00	0.07	0.60	0.00	0.00
Avail Cap(c_a), veh/h	115	1307	697	94	0	1262	166	0	67	134	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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	36.4	11.2	3.3	38.3	0.0	12.3	34.9	0.0	34.9	36.5	0.0	0.0
Incr Delay (d2), s/veh	13.5	52.0	0.0	15.5	0.0	20.2	0.1	0.0	0.2	5.1	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	1.4	29.9	0.0	0.1	0.0	19.4	0.2	0.0	0.1	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	63.2	3.3	53.8	0.0	32.5	35.0	0.0	35.0	41.7	0.0	0.0
LnGrp LOS	D	F	A	D	A	C	C	A	D	D	A	A
Approach Vol, veh/h		1490			1210			15			80	
Approach Delay, s/veh		62.4			32.6			35.0			41.7	
Approach LOS		E			C			C			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		10.0	6.4	60.8		10.0	9.6	57.6				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0	6.0	6.0				
Max Green Setting (Gmax), s		4.0	4.0	54.0		4.0	5.0	53.0				
Max Q Clear Time (g_c+I1), s		2.4	2.2	56.8		5.8	4.8	50.6				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	1.0				

Intersection Summary												
HCM 6th Ctrl Delay			48.8									
HCM 6th LOS			D									

Intersection	
Int Delay, s/veh	27.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	1420	5	5	1200	5	5	5	5	5	5	70
Future Vol, veh/h	65	1420	5	5	1200	5	5	5	5	5	5	70
Conflicting Peds, #/hr	0	0	0	0	0	0	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	4	50	0	4	0	0	0	25	0	0	0
Mvmt Flow	65	1420	5	5	1200	5	5	5	5	5	5	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1205	0	0	1425	0	0	2805	2765	1425	2776	2768	1208
Stage 1	-	-	-	-	-	-	1550	1550	-	1213	1213	-
Stage 2	-	-	-	-	-	-	1255	1215	-	1563	1555	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.45	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	2.218	-	-	2.2	-	-	3.5	4	3.525	3.5	4	3.3
Pot Cap-1 Maneuver	579	-	-	484	-	-	12	20	147	12	20	225
Stage 1	-	-	-	-	-	-	144	177	-	224	257	-
Stage 2	-	-	-	-	-	-	212	256	-	142	176	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	579	-	-	484	-	-	~ 3	9	146	~ 4	9	224
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 3	9	-	~ 4	9	-
Stage 1	-	-	-	-	-	-	66	81	-	103	249	-
Stage 2	-	-	-	-	-	-	138	248	-	59	81	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	$ 1200.7	$ 737.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	5	146	579	-	-	484	-	-	38
HCM Lane V/C Ratio	2	0.034	0.112	-	-	0.01	-	-	2.105
HCM Control Delay (s)	$ 1785.8	30.5	12	0	-	12.5	0	-	$ 737.8
HCM Lane LOS	F	D	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	2.3	0.1	0.4	-	-	0	-	-	8.7

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	1430	1165	5	5	5
Future Vol, veh/h	5	1430	1165	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	4	4	0	0	13
Mvmt Flow	5	1430	1165	5	5	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1170	0	-	0	2608	1168
Stage 1	-	-	-	-	1168	-
Stage 2	-	-	-	-	1440	-
Critical Hdwy	4.1	-	-	-	6.4	6.33
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.417
Pot Cap-1 Maneuver	604	-	-	-	27	224
Stage 1	-	-	-	-	298	-
Stage 2	-	-	-	-	220	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	604	-	-	-	27	224
Mov Cap-2 Maneuver	-	-	-	-	27	-
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	220	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	98.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	604	-	-	-	48
HCM Lane V/C Ratio	0.008	-	-	-	0.208
HCM Control Delay (s)	11	-	-	-	98.8
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	5	60	745	5	5	40	1310
Future Vol, veh/h	5	60	745	5	5	40	1310
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	Stop
Storage Length	0	-	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	-	0
Grade, %	0	-	0	-	-	-	0
Peak Hour Factor	100	100	100	100	100	100	100
Heavy Vehicles, %	0	9	3	0	0	3	3
Mvmt Flow	5	60	745	5	5	40	1310

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	2138	748	0	0	-	750	0
Stage 1	748	-	-	-	-	-	-
Stage 2	1390	-	-	-	-	-	-
Critical Hdwy	6.4	6.29	-	-	-	4.13	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-	-
Follow-up Hdwy	3.5	3.381	-	-	-	2.227	-
Pot Cap-1 Maneuver	55	401	-	-	-	855	-
Stage 1	471	-	-	-	-	-	-
Stage 2	233	-	-	-	-	-	-
Platoon blocked, %			-	-			-
Mov Cap-1 Maneuver	55	401	-	-	~ -9	~ -9	-
Mov Cap-2 Maneuver	55	-	-	-	-	-	-
Stage 1	471	-	-	-	-	-	-
Stage 2	233	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.5	0	
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	270	+	-
HCM Lane V/C Ratio	-	-	0.241	-	-
HCM Control Delay (s)	-	-	22.5	-	-
HCM Lane LOS	-	-	C	-	-
HCM 95th %tile Q(veh)	-	-	0.9	-	-

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

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	5	40	1310	5	60	745	5
Future Volume (vph)	5	40	1310	5	60	745	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0		6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	1.00	0.85
Flt Protected		0.99	1.00		1.00	0.95	1.00
Satd. Flow (prot)		1840	1549		1748	1752	1615
Flt Permitted		0.95	1.00		0.97	0.95	1.00
Satd. Flow (perm)		1758	1549		1696	1752	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	40	1310	5	60	745	5
RTOR Reduction (vph)	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	45	1310	0	65	745	3
Confl. Bikes (#/hr)			1				
Heavy Vehicles (%)	0%	3%	3%	0%	9%	3%	0%
Turn Type	Perm	NA	Free	Perm	NA	Prot	Perm
Protected Phases		4			8	2	
Permitted Phases	4		Free	8			2
Actuated Green, G (s)		5.4	37.3		5.4	19.9	19.9
Effective Green, g (s)		5.4	37.3		5.4	19.9	19.9
Actuated g/C Ratio		0.14	1.00		0.14	0.53	0.53
Clearance Time (s)		6.0			6.0	6.0	6.0
Vehicle Extension (s)		1.0			1.0	1.0	1.0
Lane Grp Cap (vph)		254	1549		245	934	861
v/s Ratio Prot						0.43	
v/s Ratio Perm		0.03	c0.85		0.04		0.00
v/c Ratio		0.18	0.85		0.27	0.80	0.00
Uniform Delay, d1		14.0	0.0		14.2	7.1	4.1
Progression Factor		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.1	5.9		0.2	4.5	0.0
Delay (s)		14.1	5.9		14.4	11.6	4.1
Level of Service		B	A		B	B	A
Approach Delay (s)		6.1			14.4	11.5	
Approach LOS		A			B	B	

Intersection Summary			
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	37.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

MOVEMENT SUMMARY

Site: 4 [SW Powell Butte Hwy-OR 126 (Site Folder: General)]

2045 Future Build
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SW Powell Butte Hwy														
3	L2	285	1.0	285	1.0	1.481	244.6	LOS F	105.0	2717.5	1.00	4.86	12.89	7.4
8	T1	5	0.0	5	0.0	1.481	244.6	LOS F	105.0	2717.5	1.00	4.86	12.89	7.4
18	R2	595	6.0	595	6.0	1.481	244.9	LOS F	105.0	2717.5	1.00	4.86	12.89	7.3
Approach		885	4.4	885	4.4	1.481	244.8	LOS F	105.0	2717.5	1.00	4.86	12.89	7.4
East: OR 126														
1	L2	415	1.0	415	1.0	1.209	118.7	LOS F	128.8	3314.8	1.00	3.08	5.31	12.7
6	T1	895	5.0	895	5.0	1.209	118.8	LOS F	128.8	3314.8	1.00	3.08	5.31	12.7
16	R2	5	0.0	5	0.0	1.209	118.6	LOS F	128.8	3314.8	1.00	3.08	5.31	12.6
Approach		1315	3.7	1315	3.7	1.209	118.7	LOS F	128.8	3314.8	1.00	3.08	5.31	12.7
North: SW Bozarth Rd														
7	L2	5	0.0	5	0.0	0.042	10.7	LOS B	0.1	3.6	0.75	0.75	0.75	31.7
4	T1	5	0.0	5	0.0	0.042	10.7	LOS B	0.1	3.6	0.75	0.75	0.75	31.6
14	R2	5	0.0	5	0.0	0.042	10.7	LOS B	0.1	3.6	0.75	0.75	0.75	30.7
Approach		15	0.0	15	0.0	0.042	10.7	LOS B	0.1	3.6	0.75	0.75	0.75	31.3
West: OR 126														
5	L2	5	0.0	5	0.0	1.504	246.5	LOS F	179.8	4595.9	1.00	5.19	10.88	7.4
2	T1	1115	3.0	1115	3.0	1.504	246.7	LOS F	179.8	4595.9	1.00	5.19	10.88	7.4
12	R2	280	2.0	280	2.0	1.504	246.6	LOS F	179.8	4595.9	1.00	5.19	10.88	7.4
Approach		1400	2.8	1400	2.8	1.504	246.6	LOS F	179.8	4595.9	1.00	5.19	10.88	7.4
All Vehicles		3615	3.5	3615	3.5	1.504	198.7	LOS F	179.8	4595.9	1.00	4.32	9.30	8.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
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Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

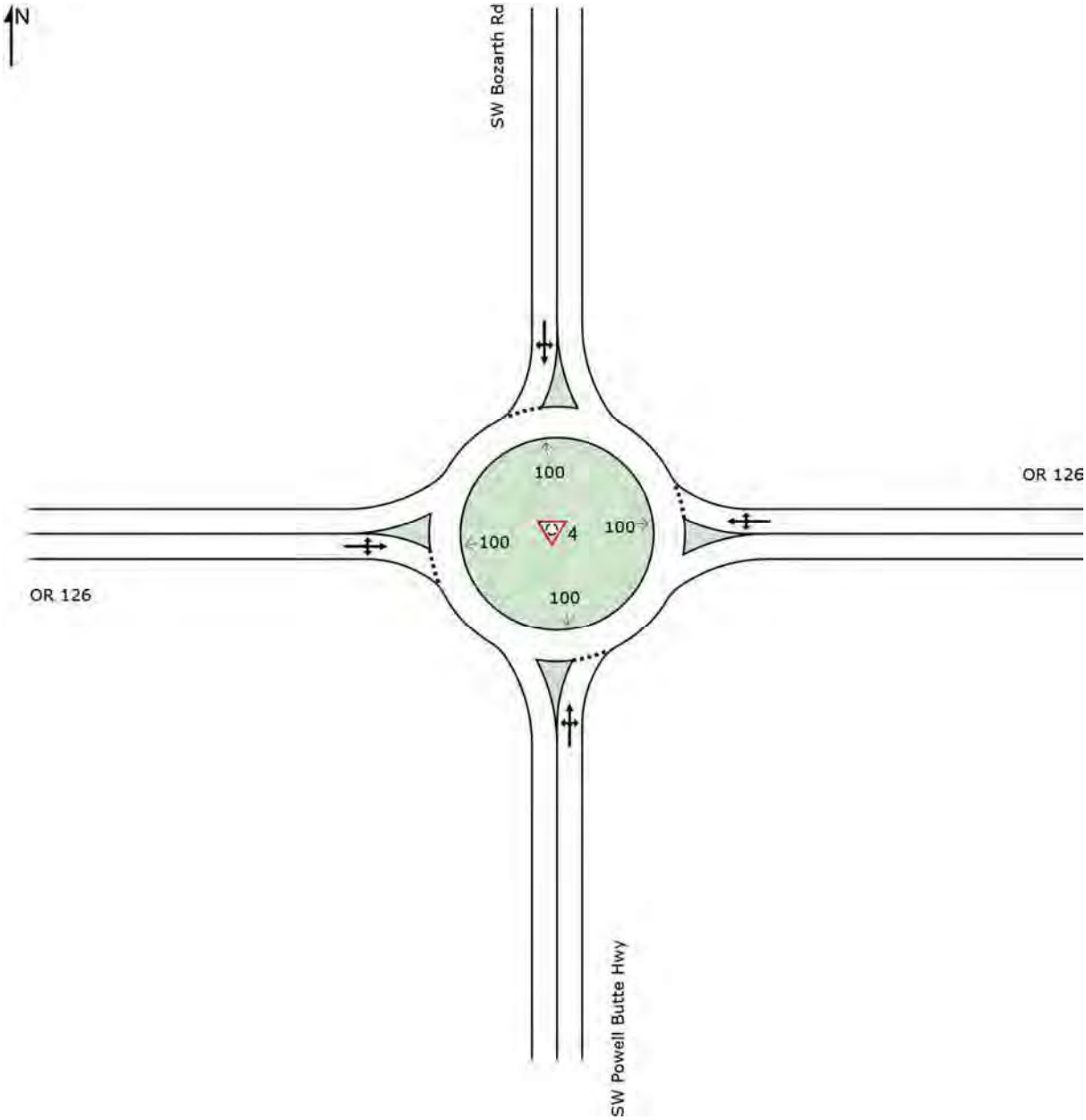
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SITE LAYOUT

Site: 4 [SW Powell Butte Hwy-OR 126 (Site Folder: General)]

2045 Future Build
Site Category: (None)
Roundabout

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



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MOVEMENT SUMMARY

Site: 4 [SW Powell Butte Hwy-OR 126 - Existing Volume (Site Folder: General)]

2045 Future Build with Existing Volume
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SW Powell Butte Hwy														
3	L2	90	1.0	90	1.0	0.481	11.8	LOS B	3.0	78.4	0.72	0.82	1.00	31.1
8	T1	5	0.0	5	0.0	0.481	11.8	LOS B	3.0	78.4	0.72	0.82	1.00	31.1
18	R2	250	6.0	250	6.0	0.481	12.1	LOS B	3.0	78.4	0.72	0.82	1.00	30.2
Approach		345	4.6	345	4.6	0.481	12.0	LOS B	3.0	78.4	0.72	0.82	1.00	30.4
East: OR 126														
1	L2	195	1.0	195	1.0	0.597	10.3	LOS B	4.9	127.0	0.46	0.26	0.46	32.0
6	T1	515	5.0	515	5.0	0.597	10.4	LOS B	4.9	127.0	0.46	0.26	0.46	31.8
16	R2	5	0.0	5	0.0	0.597	10.2	LOS B	4.9	127.0	0.46	0.26	0.46	31.1
Approach		715	3.9	715	3.9	0.597	10.3	LOS B	4.9	127.0	0.46	0.26	0.46	31.9
North: SW Bozarth Rd														
7	L2	5	0.0	5	0.0	0.025	6.4	LOS A	0.1	2.4	0.61	0.54	0.61	33.7
4	T1	5	0.0	5	0.0	0.025	6.4	LOS A	0.1	2.4	0.61	0.54	0.61	33.6
14	R2	5	0.0	5	0.0	0.025	6.4	LOS A	0.1	2.4	0.61	0.54	0.61	32.6
Approach		15	0.0	15	0.0	0.025	6.4	LOS A	0.1	2.4	0.61	0.54	0.61	33.3
West: OR 126														
5	L2	5	0.0	5	0.0	0.594	10.9	LOS B	4.6	118.1	0.61	0.46	0.63	32.4
2	T1	570	3.0	570	3.0	0.594	11.0	LOS B	4.6	118.1	0.61	0.46	0.63	32.2
12	R2	70	2.0	70	2.0	0.594	11.0	LOS B	4.6	118.1	0.61	0.46	0.63	31.4
Approach		645	2.9	645	2.9	0.594	11.0	LOS B	4.6	118.1	0.61	0.46	0.63	32.1
All Vehicles		1720	3.6	1720	3.6	0.597	10.9	LOS B	4.9	127.0	0.57	0.45	0.63	31.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
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Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

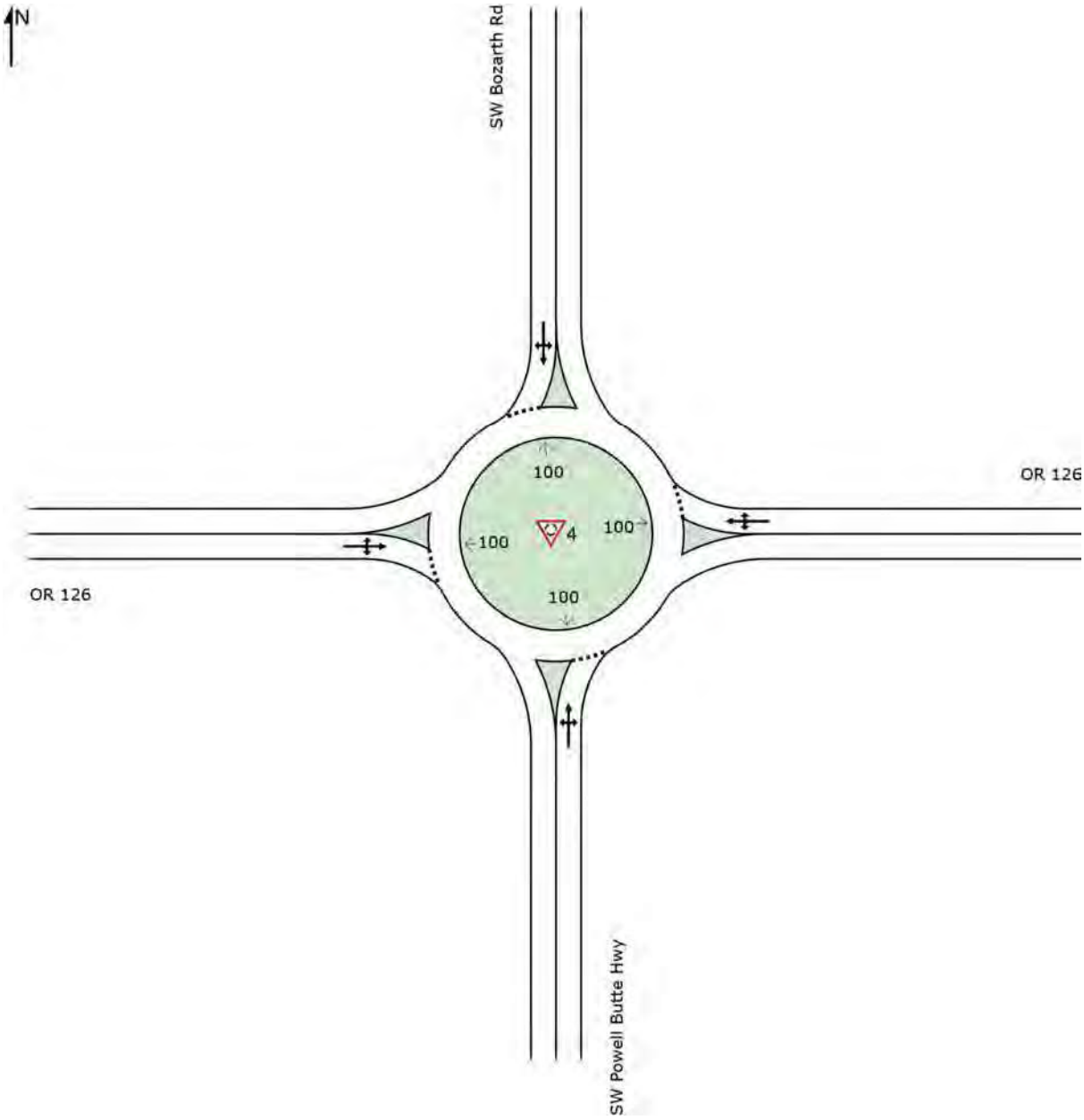
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SITE LAYOUT

Site: 4 [SW Powell Butte Hwy-OR 126 - Existing Volume (Site Folder: General)]

2045 Future Build with Existing Volume
Site Category: (None)
Roundabout

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



MOVEMENT SUMMARY

Site: 10 [SE Juniper Canyon Rd-OR 380 (Site Folder: General)]

2045 Future Build
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SE Juniper Canyon Road														
3u	U	0	0.0	0	0.0	0.587	9.6	LOS A	5.2	133.1	0.31	0.13	0.31	25.0
3a	L1	745	3.0	745	3.0	0.587	9.7	LOS A	5.2	133.1	0.31	0.13	0.31	30.6
18	R2	5	0.0	5	0.0	0.587	9.6	LOS A	5.2	133.1	0.31	0.13	0.31	30.1
Approach		750	3.0	750	3.0	0.587	9.7	LOS A	5.2	133.1	0.31	0.13	0.31	30.6
East: SE Paulina Highway														
1u	U	0	0.0	0	0.0	0.112	7.1	LOS A	0.4	10.8	0.62	0.62	0.62	28.7
1	L2	5	0.0	5	0.0	0.112	7.1	LOS A	0.4	10.8	0.62	0.62	0.62	33.9
16a	R1	60	9.0	60	9.0	0.112	7.6	LOS A	0.4	10.8	0.62	0.62	0.62	33.4
Approach		65	8.3	65	8.3	0.112	7.6	LOS A	0.4	10.8	0.62	0.62	0.62	33.4
NorthWest: SE Paulina Highway														
7ux	U	5	0.0	5	0.0	1.016	46.7	LOS F	469.0	12005.0	1.00	0.32	1.20	21.7
7ax	L1	40	3.0	40	3.0	1.016	46.7	LOS F	469.0	12005.0	1.00	0.32	1.20	21.2
14ax	R1	1310	3.0	1310	3.0	1.016	46.7	LOS F	469.0	12005.0	1.00	0.32	1.20	21.2
Approach		1355	3.0	1355	3.0	1.016	46.7	LOS E	469.0	12005.0	1.00	0.32	1.20	21.2
All Vehicles		2170	3.1	2170	3.1	1.016	32.8	LOS D	469.0	12005.0	0.75	0.26	0.87	24.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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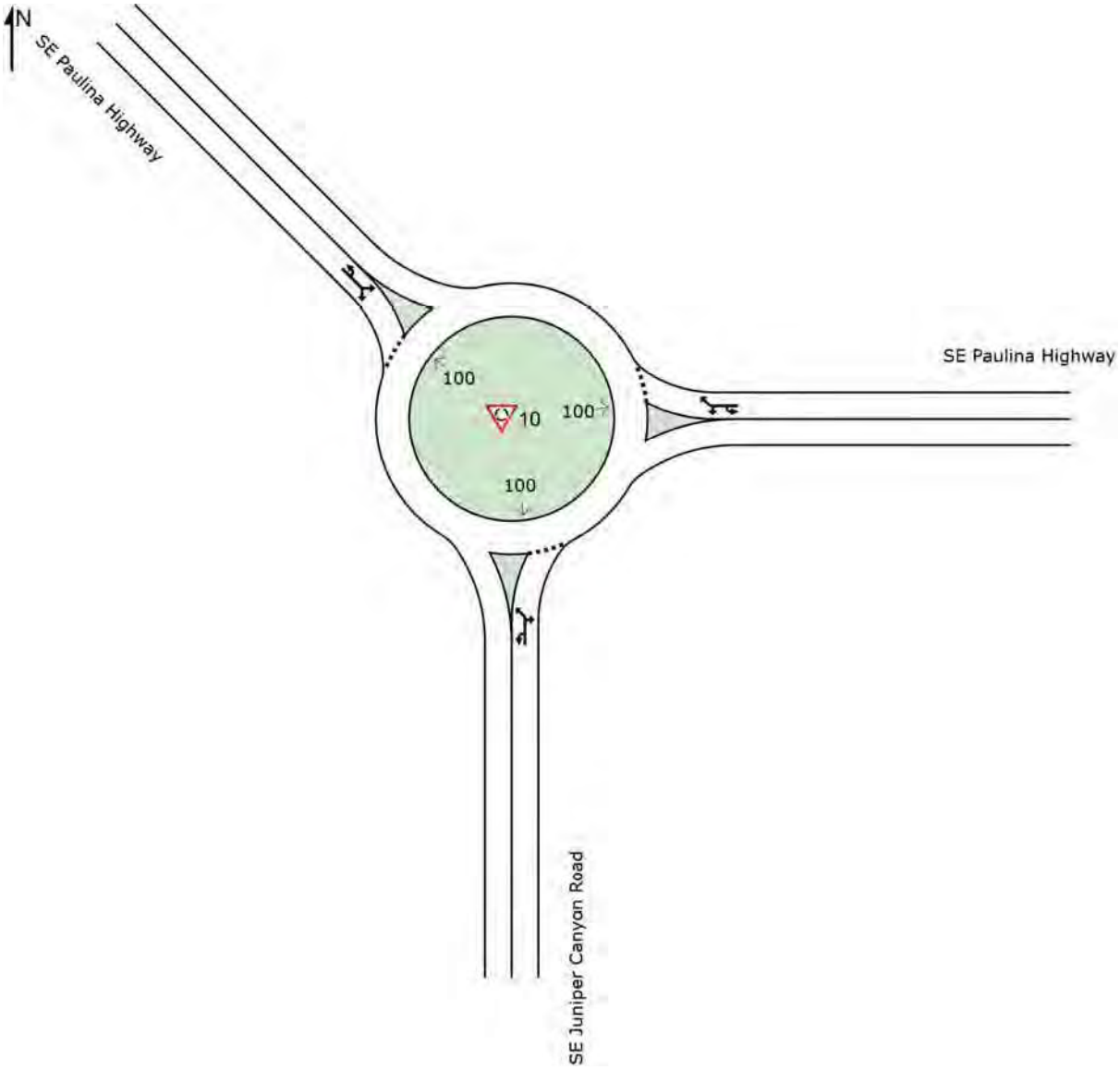
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SITE LAYOUT

Site: 10 [SE Juniper Canyon Rd-OR 380 (Site Folder: General)]

2045 Future Build
Site Category: (None)
Roundabout

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



Appendix D

Preferred Solutions

Crook County
Transportation System Plan Update
Preferred Solutions

Prepared for
Crook County

March 2025

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1. Introduction

This report identifies the preferred system improvements for the Crook County Transportation System Plan (TSP) Update. The preferred system improvements include projects, strategies, and potential programs to address transportation needs and opportunities in the county. The preferred improvements were determined through the following:

- An alternatives analysis was conducted and is described in TM #4: Crook County Solutions Analysis and Funding. The improvements were analyzed against evaluation criteria that were derived from the project goals and objectives.
- County and Oregon Department of Transportation (ODOT) staff feedback.
- Public feedback.
- Board of Commissioners' feedback.
- Project Advisory Committee feedback.

The preferred system improvements consider all transportation modes within the county: driving, cycling, walking or using a mobility device, public transit, and freight. These improvements consist of a range of investments in the County's transportation system, such as physical improvements to roads and crossings, strategies for improving bicycle and pedestrian connectivity, improvements to increase transportation safety, and improving connections to available transit services. This report also includes a discussion of available and potential funding sources including local and state revenue and state and federal grants that can be used to fund the preferred system improvements.

This report identifies projects based on priority and includes a financially constrained list of projects that can be reasonably achieved using estimated available transportation funds over the 20-year life of the TSP.

1.1 Evaluation Framework

Table 1 shows the evaluation criteria used to analyze project alternatives. Developed earlier in the TSP update process, the criteria are reiterated here to serve as a reminder about the overall goals of the TSP process. A complete evaluation of each alternative can be found in TM#4.

Table 1: Evaluation Criteria

Goal and Criterion	How Will We Measure?
Goal 1. Mobility and Connectivity Project, policy, or program promotes a transportation system that links rural communities to key destinations in the county, Prineville, and adjacent counties and serves existing and future needs for transporting goods and people.	▪ Project, policy, or program improves or does not negatively impact Level of Service on County roadways (quantitative assessment). ▪ Improvement contributes to roadway modernization or improves bridge quality. ▪ Improvement is consistent with Crook County roadway standards and specifications. ▪ Qualitative assessment of how improvement increases destinations served by transit, bicycle infrastructure, and pedestrian infrastructure within Crook County
Goal 2. Economic Development Project, policy, or program contributes to a transportation system that supports existing industry, encourages economic development in the county, and addresses population growth in Crook County and adjacent communities.	▪ Qualitative assessment of how improvement supports existing industries and maintains resiliency for future changes. ▪ Qualitative assessment of how improvement increases intermodal connections and fosters commerce. ▪ Improvement aids in integration of prime industrial lots with improved roadway connections (quantitative assessment). ▪ Improvement increases connections to recreation, tourism, and retail/business destinations (qualitative assessment).
Goal 3. Safety Project, policy, or program contributes to a transportation system that promotes the safety of current and future travel modes for all users.	▪ Improvement addresses safety issues at location with safety and crash history (qualitative assessment). ▪ Project, policy, or program improves or does not negatively impact emergency vehicle access to communities and community destinations (qualitative assessment).
Goal 4. Multimodal Users Project, policy, or program contributes to a multimodal transportation system that enables safe and efficient transport of people and goods through active modes.	▪ Improvement contributes to pedestrian, bicycle, and transit network connectivity (qualitative assessment). ▪ Improvement increases comfort and safety (actual and perceived) for people walking, using an assistive mobility device, or bicycling.
Goal 5. Environment Project, policy, or program contributes to a transportation system that balances transportation services with the need to protect the environment.	▪ Improvement increases transportation options and decreases reliance on single occupancy vehicle trips (qualitative assessment). ▪ Improvement contributes to a transportation system that minimizes energy consumption and negative air quality impacts. ▪ Improvement contributes to a transportation system that aligns with State and federal noise, air, water, and land quality regulations.
Goal 6. Planning and Funding Project, policy, or program maintains the safety, physical integrity, and function of the County's multimodal transportation network, consistent with Goal 6 of the OTP which focuses on creating a transportation funding structure that serves both current and future needs.	▪ Qualitative assessment of long-term funding stability for transportation maintenance and new infrastructure projects ▪ Improvement provides high benefits relative to costs (cost/benefit assessment). ▪ Improvement would likely be eligible for one or more grant programs, or other innovative funding sources for transportation improvements. ▪ Improvement supports preservation or maintenance of the existing system.

Goal and Criterion	How Will We Measure?
Goal 7. Equity Project, policy, or program increases mobility and access for all users.	▪ Improvement increases mobility or access for historically underserved people groups who are less likely to own a car. ▪ Project, plan, or policy mitigates or avoids negative transportation impacts to low income and historically marginalized populations.

2. Funding

Crook County's capital projects, operations, and maintenance of roadways are funded through the Crook County Transportation Budget, which relies on various sources. The Crook County Road Fund relies on fuel tax paid to the County based on the number of vehicles registered to the County; Secure Rural Schools (SRS), otherwise known as forest receipts, is the second major source of funding. Additionally, the Special Transportation Fund accounts for federal and state transportation programs, where Crook County typically enters into intergovernmental agreements with Central Oregon Intergovernmental Council (COIC) to perform these services.

The figures that follow outline the expenditures for 2021 and 2022, as well as the budgets for 2023 and 2024.

BUDGET (AMOUNTS IN THOUSANDS)

	2021 ACTUALS	2022 ACTUALS	2023 ADJ BUDGET	2023 YE ESTIMATE	2024 PROPOSED	2024 APPROVED	2024 ADOPTED
Resources							
Beginning Fund Balance	$ 16,283	$ 16,379	$ 15,970	$ 16,063	$ 15,050	$ 15,050	$ 15,050
Revenue							
Intergovernmental	3,781	3,963	4,997	4,350	4,459	4,459	4,459
Transfers and Interfund	105	-	-	-	-	-	-
Licenses, Permits & Fees	25	31	21	21	21	21	21
Charges for Services	24	213	6	49	36	36	36
Miscellaneous	147	83	150	313	500	500	500
Total Revenue	**4,083**	**4,290**	**5,174**	**4,733**	**5,016**	**5,016**	**5,016**
Total Resources	**20,366**	**20,669**	**21,144**	**20,796**	**20,066**	**20,066**	**20,066**
Requirements							
Appropriation							
Personnel	$ 1,731	$ 1,830	$ 1,902	$ 1,911	$ 2,066	$ 2,066	$ 2,066
Materials & Services	2,063	2,519	3,187	2,528	3,127	3,132	3,132
Capital Outlay	193	257	1,405	1,307	305	305	305
Transfers	-	-	-	-	155	150	150
Contingency	-	-	931	-	1,000	1,000	1,000
Total Appropriation	**3,987**	**4,606**	**7,425**	**5,746**	**6,653**	**6,653**	**6,653**
Other Requirements							
Reserved for Future Expenditure	-	-	13,719	-	13,413	13,413	13,413
Total Requirements	**$ 3,987**	**$ 4,606**	**$ 21,144**	**$ 5,746**	**$ 20,066**	**$ 20,066**	**$ 20,066**

Figure 1: FY 2024 Road Fund Adopted Budget

BUDGET (AMOUNTS IN THOUSANDS)

	2021 ACTUALS	2022 ACTUALS	2023 ADJ BUDGET	2023 YE ESTIMATE	2024 PROPOSED	2024 APPROVED	2024 ADOPTED
Resources							
Beginning Fund Balance	$ 286	$ 435	$ 603	$ 671	$ 754	$ 754	$ 754
Revenue							
Intergovernmental	324	390	393	368	431	431	431
Miscellaneous	4	2	4	15	15	15	15
Total Revenue	**328**	**392**	**397**	**383**	**446**	**446**	**446**
Total Resources	**614**	**828**	**1,000**	**1,054**	**1,200**	**1,200**	**1,200**
Requirements							
Appropriation							
Materials & Services	$ 179	$ 157	$ 402	$ 300	$ 800	$ 800	$ 800
Contingency	-	-	598	-	400	400	400
Total Appropriation	**179**	**157**	**1,000**	**300**	**1,200**	**1,200**	**1,200**
Total Requirements	**$ 179**	**$ 157**	**$ 1,000**	**$ 300**	**$ 1,200**	**$ 1,200**	**$ 1,200**

Figure 2: FY 2024 Special Transportation Fund Adopted Budget

The County's largest expenditure under the Road Fund is the maintenance of roads. When forecasting for future budgets, the adopted 2024 budget notes that "maintaining operations at the historical status quo continues to spend down fund balance." In particular, the forecast identifies a significant increase in maintenance expenditure compared to historical trends. The forecast through FY 2028 is shown in Figure 3: Road Fund Forecast FY 2024 - FY 2028 (in thousands) The Department is exploring more sustainable operations and funding, including seeking additional revenue and updating annual costs to maintain the County road system at or above the target 70 Pavement Condition Index rating. Crook County has allocated approximately $3.1 million for materials and services, which includes approximately $1.5 million for paving activities, $150,000 for snow control, and $200,000 for fuel.

Based on budget documentation and conversations with County staff, no local funding is expected for future transportation system capital improvements over the next 20 years.

	ADOPTED FY 2024	ESTIMATE FY 2024	FORECAST FY 2025	FORECAST FY 2026	FORECAST FY 2027	FORECAST FY 2028
Beginning Fund Balance	$ 15,050	$ 15,200	$ 14,740	$ 14,144	$ 13,334	$ 12,483
Revenue	5,016	5,016	4,897	4,898	4,969	4,978
Total Resources	20,066	20,216	19,637	19,042	18,303	17,460
Expenditures						
Personnel	$ 2,066	$ 2,015	$ 2,151	$ 2,259	$ 2,353	$ 2,451
Materials & Services	3,132	3,007	3,097	3,159	3,222	3,286
Capital Outlay	305	305	245	290	245	250
Transfers	150	150	-	-	-	-
Total Expenditures	5,653	5,476	5,493	5,708	5,820	5,988
ENDING FUND BALANCE	$ 14,413	$ 14,740	$ 14,144	$ 13,334	$ 12,483	$ 11,473
Ratio Fund Balance to Expenditures	255%	269%	257%	234%	214%	192%
FTE	**20.0**	**20.35**	**20.35**	**20.35**	**20.35**	**20.35**

Figure 3: Road Fund Forecast FY 2024 - FY 2028 (in thousands)

2.1 Potential Grants and Revenue Sources

Grants provide an important source of funds for projects, supplementing local funds. Grants are often targeted toward specific types of transportation projects. Table 2 describes potential grant funding sources and their applicability to TSP projects in Crook County.

Table 2. Grant Opportunities

Source	Funding Available	Description	Eligibility and Considerations
Statewide Transportation Improvement Program (STIP) Administered by ODOT	Approximately $2 billion available statewide for the 2024-2027 STIP. Match requirements vary.	The STIP is the major statewide program for funding significant projects, usually of regional importance. The STIP programs both state and federal dollars.	Major projects on state roadways through Crook County are most likely eligible for funding, though the STIP process is extremely competitive. Projects included in the STIP are generally regionally significant and are prioritized by ODOT, metropolitan planning organizations, and area commissions on transportation.
Recreational Trails Program Administered by OPRD	Approximately $1.6M allocated each year. Minimum grant request: $10,000. Recommended grant request maximum: $150,000 for non-motorized proposals.	Funds to develop, improve, or expand motorized and non-motorized trails and their facilities. RTP funding is intended for recreational trail projects and can be used for construction of new trails, major rehabilitation of existing trails, development or improvement of trailhead or other support facilities, acquisition of land or easements for	This funding source is very competitive, and funding is generally based on the needs identified in the Oregon Statewide Trails Plan.

Source	Funding Available	Description	Eligibility and Considerations
	Applicants must commit to at least 20% match. Match can include volunteer labor or other donations.	the purpose of trail development, and safety and education projects.	
Oregon Community Paths Administered by ODOT	Project Refinement funding: $150,000 to $750,000 per project. Construction funding: $500,000 to $6,000,000 per project. 10% to 30% depending on funding source (federal or state)	Supports multiuse path projects; including paths that pass through a park, along a greenway, to connect community centers, services, housing, employment, schools, and recreation. Types of community path projects: 1) Critical Links – walking and biking connections to schools, downtowns, shopping, employment, and other essential destinations 2) Regional Paths - connecting communities no more than 15 miles apart, or traverses one community with a path 10 miles long or greater	OCP projects must serve a transportation purpose (not recreational). TSP is likely to include projects that fall under the "Critical Links" project type.
Safe Routes to School (SRTS) Administered by ODOT	$60,000 to $2,000,000 New funding program guidance is under development by ODOT. 20% to 40% match required.	Projects that improve, educate, or encourage children safely walking or biking to school. Projects within a one-mile radius of a school, within a local roadway, and in a jurisdictional plan. Projects in smaller communities, for elementary and middle schools, and that can demonstrate substantial need are likely to fare best.	Because the Crook County TSP is likely to include projects that would have a direct impact on cycling and walking to school in Powell Butte, SRTS is likely a promising source of funding for projects.
Sidewalk Improvement Program (SWIP) Administered by ODOT	$7.4 million annually for federal fiscal years 2022 to 2024. No match is required. State Pedestrian and Bicycle funds can be used as a match for federal dollars.	Allocates funds to improve walking and biking infrastructure (e.g., crossings, sidewalks, bike facilities) on or along state highways. Provides grants on a rotating regional basis to construct larger pedestrian and bicycle projects (or bundles of systemic improvements) needed to address priority needs identified in the Oregon Bicycle and Pedestrian Plan (OBPP) and Active Transportation Needs Inventory (ATNI).	Eligible for improvements on or along state highways. ATNI web map shows prioritization scores within Crook County ranging from the 60th to 80th percentile.
Statewide Transportation Improvement Fund (STIF) Administered by ODOT	Funding amount varies. There is no match for STIF formula, STIF Discretionary match is generally 20%. STIF formula funds may be used as the local match for state and federal funds which also provide Public Transportation. STIF discretionary funding is used for new or pilot projects and for capital purchases.	STIF formula funds may be used for public transportation purposes that support the effective planning, deployment, operation, and administration of public transportation programs. The STIF Discretionary fund supports a wide variety of project types but cannot be used to fund ongoing operations. The Intercommunity Discretionary fund supports maintaining, expanding, and improving public transportation services between two or more communities.	STIF formula funding is awarded through the Qualified Entity (QE) which is a County or Transit District, based on population and taxes paid within their geographic area. STIF Discretionary and Intercommunity Discretionary funds are awarded to Public Transportation Service Providers to improve public transportation through a competitive grant process.

Source	Funding Available	Description	Eligibility and Considerations
		The Oregon Transportation Commission finalizes award decisions using criteria derived from statute and the Oregon Public Transportation Plan.	
Rivers, Trails, and Conservation Assistance Program Administered by National Park Service	Funding amount varies.	Annual funding available for technical assistance for recreation and conservation projects, including shared-use paths. No local match is required.	This fund has advanced projects in Crook County in both 2020 and 2022, supporting both the Barnes Butte Recreational Complex and Crooked River National Grasslands Trails efforts. Projects related to recreational areas and access to recreational areas may qualify.
All-Roads Transportation Safety program Administered by ODOT	Funding amount varies.	Annual funding for project that address safety issues on highways and High Risk Rural Roads. A 10% local match is required.	Projects are typically identified through the state's Safety Priority Index System or systemic network screening. Projects are awarded based on benefit/cost ratio.
Federal Lands Access Program (FLAP) Administered by FHWA		Projects that improve transportation facilities that provide access to, are adjacent to, or are located within federal lands.	Projects that improve access to federal lands, such as BLM, are eligible. Many proposed projects expand access to BLM land.
Transportation Growth Management Program (TGM) Administered by ODOT	Varies; annual grant cycles.	Projects that help local communities plan for streets and land use to create more livable communities. Category 1 TGM grants focus on meeting the requirements for the Transportation Planning Rule, while category 2 TGM grants focus on integrated land use and transportation planning , especially active transportation, transit, and multimodal facilities.	Category 2 TGM projects aim to encourage "livable, affordable, and accessible communities for all ages and incomes…" Advancing projects that aim to improve access to transit and community destinations may be eligible for funding.
Land and Water Conservation Fund Administered by OPRD	Approximately $5 million annually.	Acquiring land for public outdoor recreation or develop basic outdoor recreation facilities. Project types may include shared-use pathways, bikeways, and sidewalks. Requires a 50% local match.	Projects identified in the TSP include shared-use pathways, bikeways, and sidewalks that may be eligible.

2.2 Local Funding Sources and Financing Mechanisms

Local revenue is another important source of funds for transportation projects and programs. Table 3 describes sources and considerations of local funding for TSP projects identified during the prior TSP process and potential new sources of local funding.

Table 3. Potential Local Funding and Financing Mechanisms

Local Funding / Financing Option	Description	Considerations
User Fee	Fees added to a monthly utility bill or tied to the annual registration of a vehicle to pay for improvements, expansion, and maintenance on the street system.	This type of fee is becoming more common in cities but would require substantial investment in rate studies, administrative staffing, and software and computer systems to enable the County to collect the revenue. This source is generally better suited to funding operations than for capital improvements, but it may free up existing resources for capital projects.
System Development Charges (SDCs)	One-time fees obtained from new development and redevelopment intended to cover part of the cost of transportation facilities to support the new development.	Fees will increase the cost of development for developers. The County will determine the appropriate fee to cover transportation costs while also ensuring that development remains affordable for developers.
Local Gas Tax	A local tax assessed on the purchase of gas within the County. This tax is added to the cost of gasoline at the pump, along with the state and federal gas taxes. Many communities in Oregon assess local gas taxes, typically ranging from $0.01 to $0.10 per gallon.	A local-option fuel tax would be easy to collect because the infrastructure is already in place. Would generate revenue for the county from motorists passing through the county. This method could fund operations and capital programs.
Road/Local Improvement Districts (LID)	A local improvement district is a geographic area where local property owners are assessed a fee to cover the cost of a public improvement in that area.	This may be especially useful for non-state facilities that are ineligible for federal or state funding. This type of fee must be approved by the majority of property owners.
General Fund	Property taxes from the County's permanent tax rate.	Diverting general fund revenue to the Road Fund would have significant consequences for other County services.
Bonds or Levies	Voter approved measures to either acquire funds through an increased tax rate (levy) or through the sale of bonds.	Requires voter approval.
Motor Vehicle Title Fee	Requires all motor vehicles registered in the county to all have title recorded as personal property.	This would generate two sources of revenue: from the fee itself and from personal property taxes levied on motor vehicles. This could be problematic for renters and would increase taxable property that the assessor must account for.

3. Preferred Solutions

The list of preferred solutions is summarized based on key locations identified through previous analysis as well as specific modal improvements. This section describes the solutions and the potential outcomes and benefits.

3.1 Roadway Solutions

3.1.1 SW Powell Butte Highway and Ochoco Highway/OR 126

A single-lane roundabout is the preferred solution at the intersection of SW Powell Butte Highway and OR 126. This project would maintain all turning movements while reducing turning movement conflicts. This project would also improve traffic operations in the near term, resulting in the state highways performing within mobility targets. Analysis of future conditions shows that this improvement is not expected to meet mobility targets in the future, requiring consideration of alternate mobility targets. While a dual-lane roundabout was evaluated as part of TM#3, public feedback strongly supported a single-lane roundabout, both due to the expected lower cost as well as ease of navigation.



Figure 4: S Powell Butte Highway and OR 126 Preferred Solution

3.1.2 SW Williams Road and Ochoco Highway/OR 126

The preferred near term solution for the intersection of SW Williams Road and OR 126 adds left turn lanes on OR 126 in both directions, as shown in Figure 5. This location meets turn lane warrants based on existing and future projected volumes. Crosswalks will be marked on all four legs of the intersection and would designate pedestrian crossing locations. Crosswalks would be improved at this intersection to ODOT standards, which may include crosswalk striping, flashing beacons, signage, lighting, or other improvements that would be determined in collaboration with ODOT. This alternative is expected to meet mobility targets in the future build scenario for OR 126; however, the minor street does not meet mobility targets. In the long term, an Intersection Control Evaluation should be completed to determine the appropriate intersection control change, such as a roundabout.



Figure 5: OR 126 and SW Williams Rd Preferred Alternative

3.1.3 SE Juniper Canyon Road and SE Paulina Highway/OR 380

The preferred solution for the intersection of SE Juniper Canyon Road and OR 380 is to realign the intersection and add a left acceleration lane, as shown in Figure 6. By realigning the intersection to a 90-degree angle, this project will improve sight distances, reduce vehicle time in the intersection, and reduce potential conflict points. This project is expected to meet mobility targets for intersection performance.



Figure 6: Juniper Canyon Road and OR 380 Preferred Solution

3.1.4 SW Parrish Lane and OR 126

The preferred solution for this location is to widen OR 126 from SW Valley View Road to Stillman Road to include a center two-way left turn lane, as shown in Figure 7. Analysis of future traffic conditions shows that this location would meet turn lane warrants. A center two-way left turn lane would improve traffic operations and meet mobility targets; marking and other physical elements could also be included to help visually narrow the roadway and delineate travel lanes, which would encourage vehicles to slow.

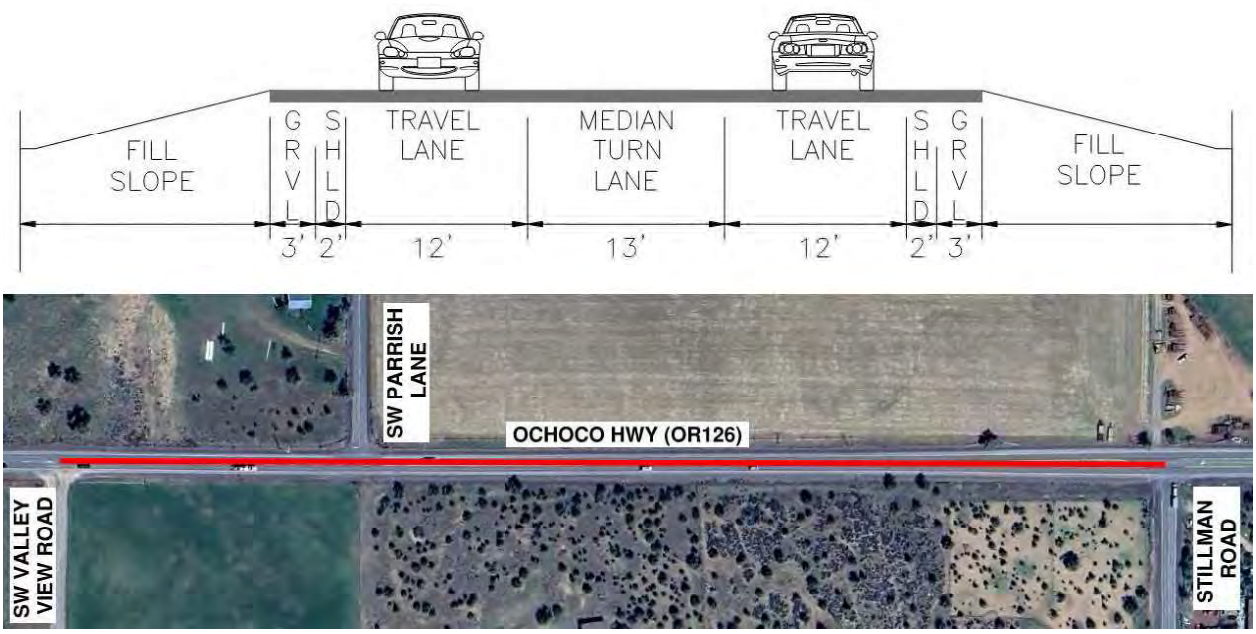


Figure 7: OR 126 Widening

3.1.5 S Powell Butte Highway and Alfalfa Road

Alfalfa Road is a local roadway that intersects with S Powell Butte Highway in a T intersection, where Alfalfa Road is stop controlled. The side street will operate at LOS F; however, no traffic mobility improvements are recommended for this location due to the relatively low-volume of the side street and the high cost relative to benefit to address the problem. This location is also identified as a high-crash location; alternatives are outlined in the safety section.

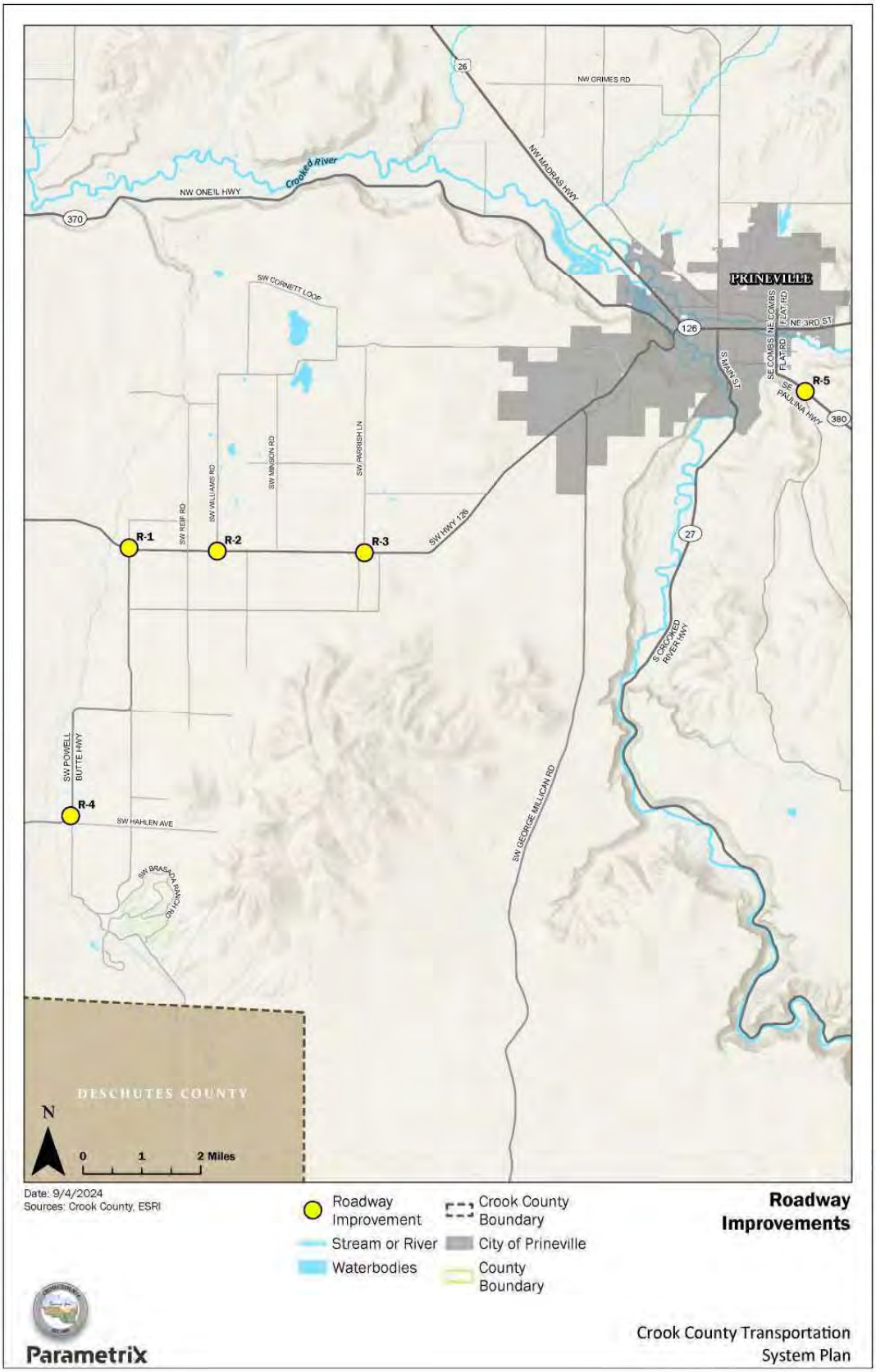


Figure 8: Roadway Improvements

3.2 Functional Classification and New Roadway Connections

3.2.1 New Roadway Connections

A new roadway connection or connections may be proposed to address the growing population in Juniper Canyon. Access along Juniper Canyon Road, including considerations for improved ingress and egress, is a primary concern for the community. As described in the Existing Conditions and Needs memorandum, residents have long desired the construction of an alternate route to augment Juniper Canyon access. A concurrent process is underway to identify the community's preferred connection. *A summary of the preferred alignment will be included as part of the final TSP.*

3.3 Access Management

The 2017 TSP identified five locations for access management improvements along OR 126 to balance access to destinations with overall safety and mobility of the transportation system. These projects were also identified in the OR 126 Corridor Plan. The locations are summarized in Table 4.

3.4 Bridge Improvements

The 2017 TSP identified National Bridge Inventory bridges with either low sufficiency ratings or that were considered functionally obsolete. Of this list, five locations remain in need of improvement. These locations are summarized in Table 4.

3.5 Safety

A number of improvements to increase multimodal safety are described in the preferred solutions summary (Table 4). The identified improvements respond to safety issues identified through data analysis and public feedback and include both intersections and segments. Generally, improvements seek to improve safety for people driving. The intersection of S Powell Butte Highway and SW Busset Road exceeds the critical crash rate, while the intersection of Rimrock Acres Loop and NW O'Neil Highway is approaching the critical crash rate. The intersection of S Powell Butte Highway and Alfalfa Road is also identified for safety improvements based on its inclusion in the previous TSP. Generally, improvements aim to improve visibility and encourage slower speeds, especially at curved roadway locations.

As shown in Figure 8 below, the proposed improvements at S Powell Butte Highway and SW Busset Road realign the intersection to simplify circulation patterns; additionally, an acceleration lane along S Powell Butte Highway helps accommodate agricultural vehicles.



Figure 9: S Powell Butte Highway and SW Busset Road Safety Improvements

Three roadway segments exceed the critical crash rate, including: OR 126 east of Powell Butte Highway to Copley Road; OR 370 east of Happy Hollow Drive; and OR 380 south of NE 3rd Street. Improvements aim to improve delineation of the roadway through improved striping and rumble strips and evaluation of access management.

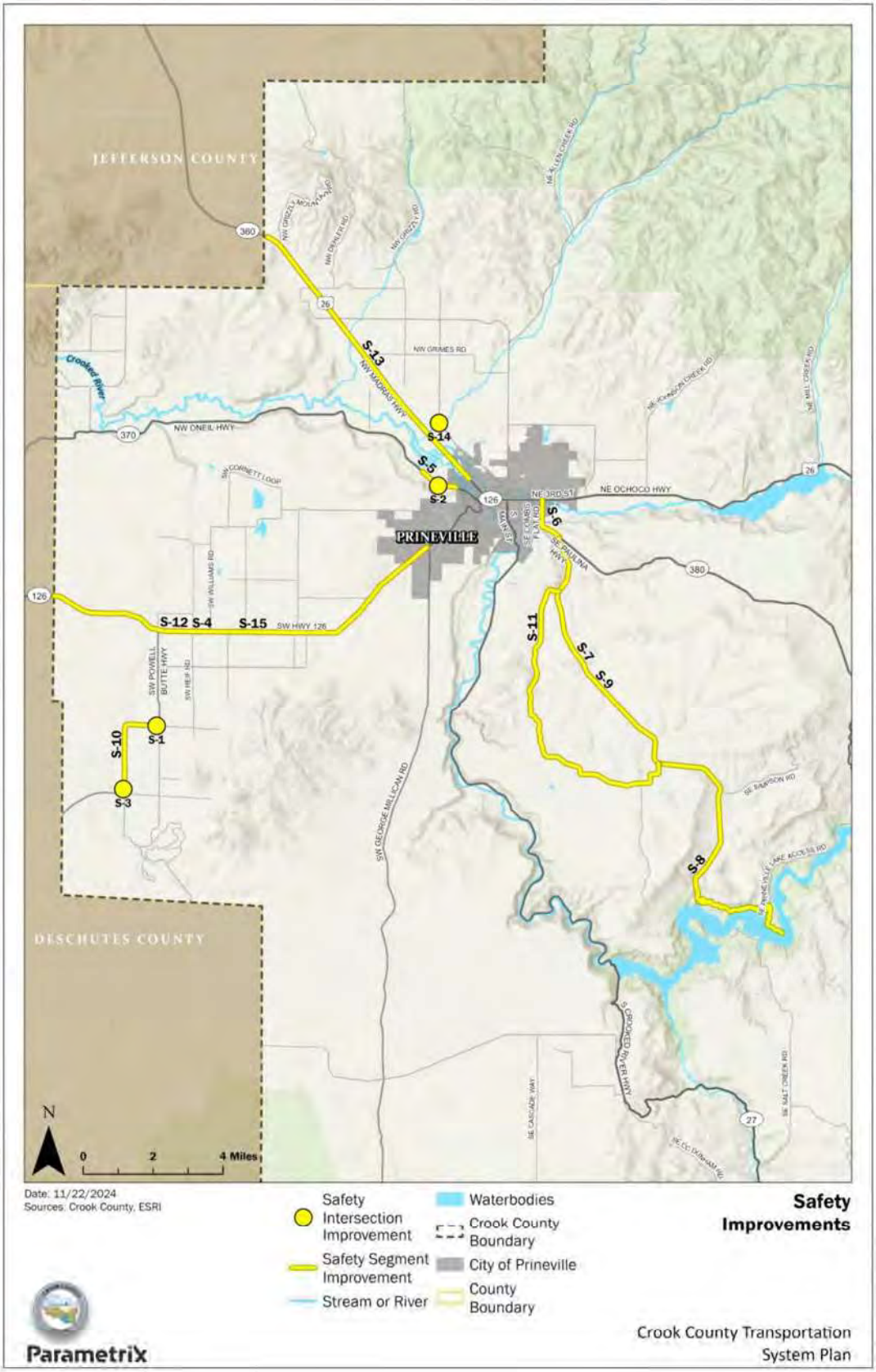


Figure 10: Safety Improvements

3.6 Bicycle and Pedestrian System

3.6.1 Pedestrian System

The preferred solutions to enhance pedestrian safety and connectivity include improvements along OR 126 within the Powell Butte Community. These solutions will improve safety, increase connectivity to key destinations such as the school, and enhance overall street context to improve travel conditions in the community. These improvements will complement the preferred solution for the intersection of OR 126 and Williams Street shown in previous sections (See Figure 5).

3.6.2 Bicycle System

The list of preferred bicycle system improvements carries forward several projects from the 2017 TSP that still meet the identified need, although modifications have been made to better align the project with the current goals and cost constraints. New projects were identified based on evaluation by the project team. They focus on new shared use trails, paved shoulders in strategic locations, and programmatic improvements, such as wayfinding and travel information to improve awareness of bicycle facilities and route opportunities.

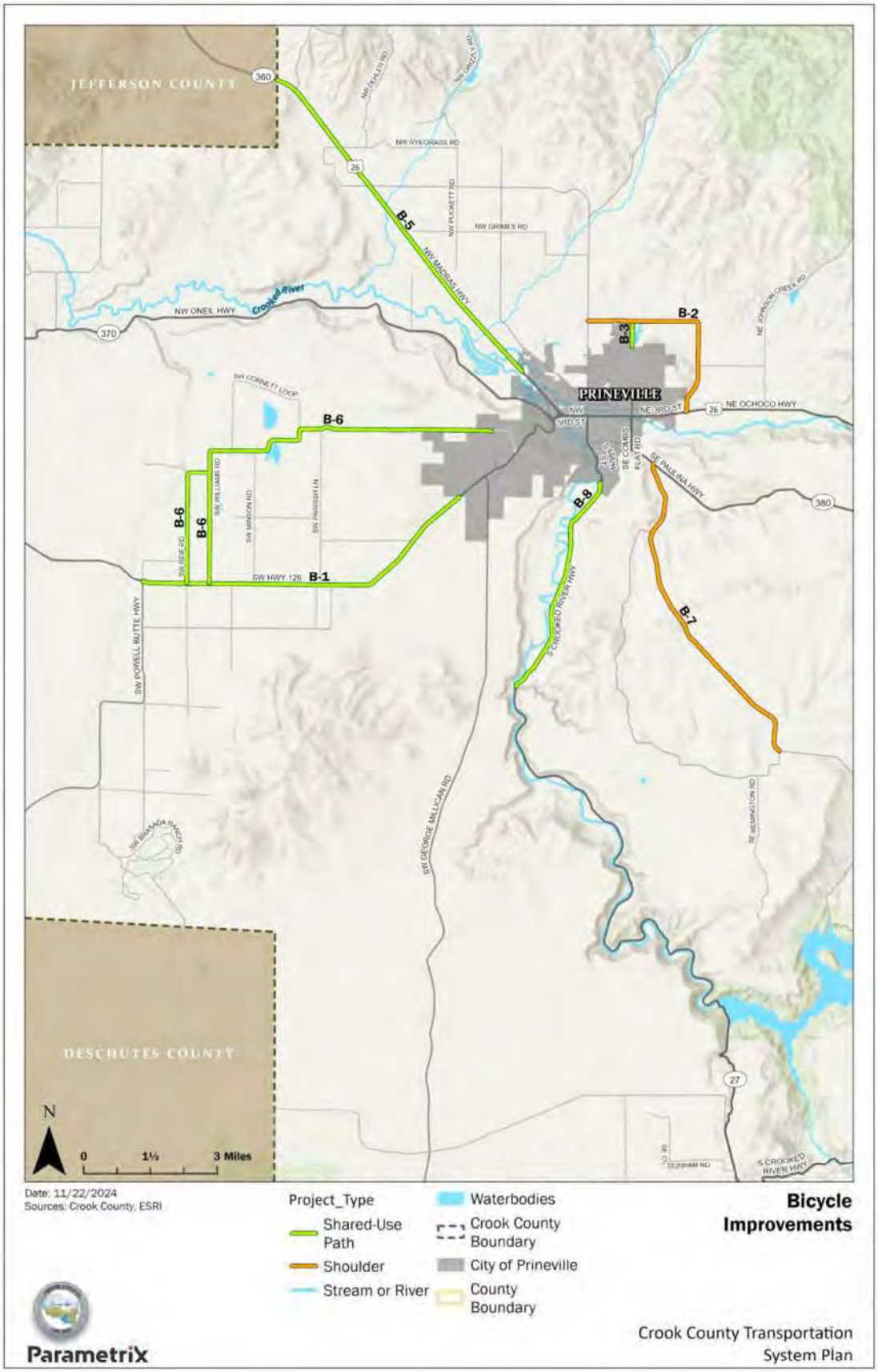


Figure 11: Bicycle Improvements

3.7 Public Transportation

The preferred solutions list includes projects and enhancements identified in the Cascades East Transit 2040 Transit Master Plan, including service enhancements to Route 26 connecting Prineville to Redmond and expanding Dial-a-Ride service.

3.8 Freight System

Two improvements are identified for freight travel in Crook County, including reconstructing the intersection of Bus Evans Road and Elliot Lane to meet freight route standards, as well as assessing the feasibility of reconstructing the US 26 railroad bridge to accommodate oversized loads on US 26.

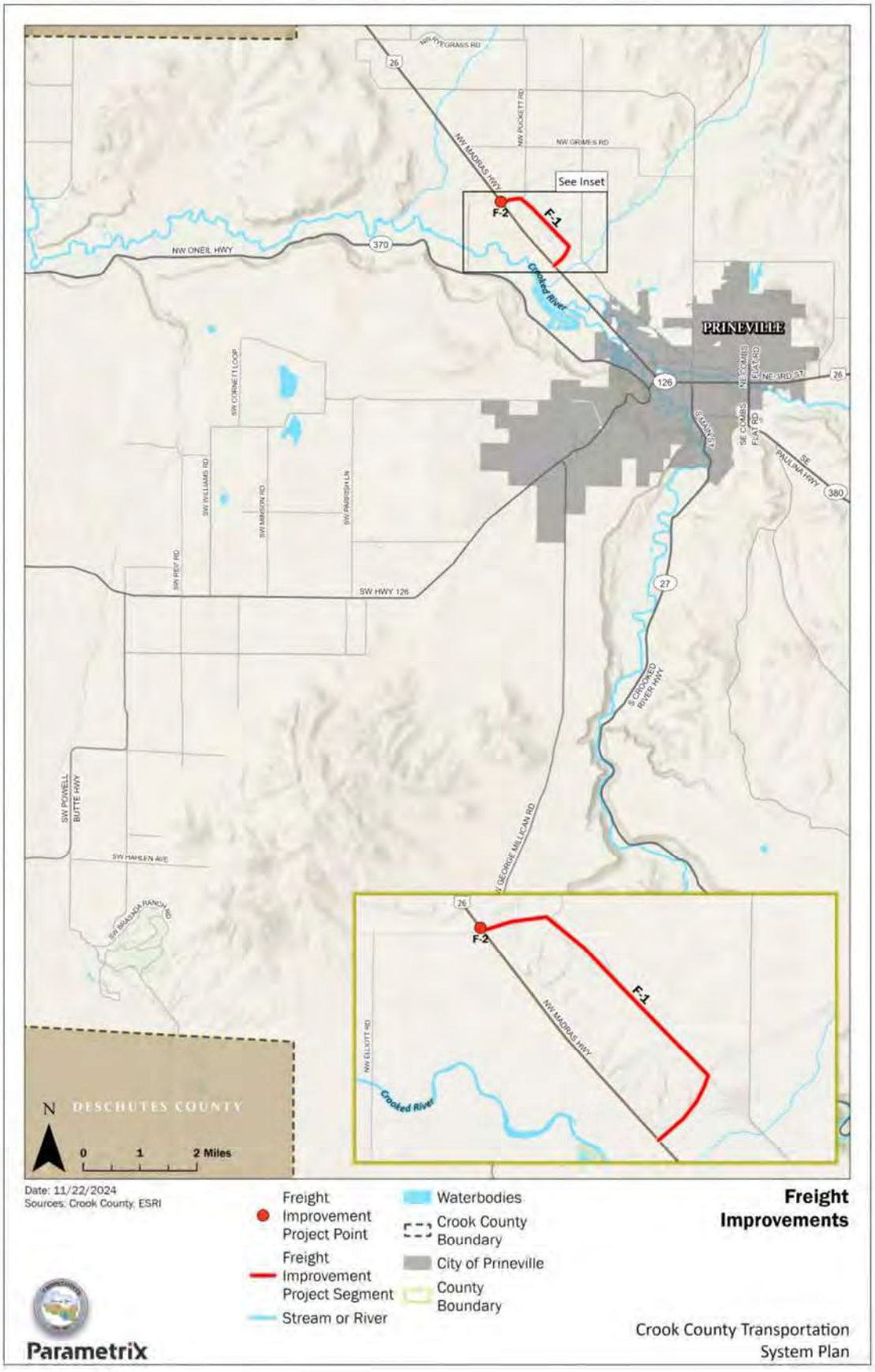


Figure 12: Freight Improvements

4. Preferred Solutions Summary

Table 4 summarizes the preferred solutions identified for the TSP. Cost estimates were developed for most of the improvements and represent planning-level costs based on average costs per unit for similar facilities. Solutions are categorized as near-term (0 to 5 years), medium-term (5 to 10 years), and long-term (>10 years) based on the perceived level of implementation difficulty and need for the improvement.. Projects labeled “partnership” are located on state-owned facilities or refer to transit operations improvements. These projects are funded and implemented through a combination of local and regional or state support.

The solutions in total, if built, would cost approximately $80 million based on the planning-level cost estimates, pending identification of the preferred Juniper Canyon Access solution and any additional future road connections. Of this total, $52.1 million is needed for solutions relying primarily on local funding or grant sources, while solutions in partnership with ODOT total $27.6 million. Based on recent annual transportation funding for Crook County and conversations with County officials, it is estimated that there is no available local funding for capital improvements over the next 20 years.

Table 4: Preferred Solutions Summary

Project ID	Project Name/Location	Needs Addressed	Possible Funding Source	Cost Estimate	Priority	Implementation Considerations
Roadway and Operations						
R-1A	OR 126/Powell Butte: Construct a single lane roundabout.	▪ Reduces traffic congestion and delays in the near term. ▪ Maintains all turning movements while reducing turning movement conflict. ▪ Increases safety.	ODOT, Development, Local Funds	$3,400,000	Medium	Partnership
R-2A	OR 126/SW Williams Rd: Add left tum lanes on OR 126 in the near term..	▪ Reduces traffic congestion and delays. ▪ Creates opportunities to improve access management and reduce conflicts. ▪ In the long term, complete an Intersection Control Evaluation to determine the appropriate intersection control change.	ODOT, SRTS, Local Funds	$1,700,000	Medium	Partnership
R-3A	OR 126/SW Parrish Lane: Widen OR 126 from SW Valley View Road to Stillman Road (Center Two-Way Left-Turn Lane)	▪ Reduces traffic congestion and delay. ▪ Opportunity to add medians/physical markers on east leg to encourage vehicles to slow	ODOT, Local Funds	$900,000	Near	Partnership
R-4A	SE Juniper Canyon Rd/OR 380: Realign intersection with left acceleration lane.	▪ Improves intersection safety while retaining existing movements. ▪ Reduces conflict points, helping drivers avoid misjudging gaps in traffic ▪ Reduces traffic congestion and delay.	Local Funds	$2,100,000	Long	
Functional Classification and New Connections						
JC-1	Juniper Canyon Access	▪ Improve emergency access in Juniper Canyon	Local Funds Grants	TBD	Near	
Access Management						
R-5	OR 126 at Kissler Rd	▪ Balance destination access with mobility and safety of the transportation system	ODOT	$20,000	Medium	Partnership
R-6	OR 126 at Copley Rd	▪ Balance destination access with mobility and safety of the transportation system	ODOT	$20,000	Medium	Partnership
R-7	OR 126 at Minson Rd	▪ Balance destination access with mobility and safety of the transportation system	ODOT	$20,000	Medium	Partnership
R-8	OR 126 at Yates Rd	▪ Balance destination access with mobility and safety of the transportation system	ODOT	$20,000	Medium	Partnership
R-9	OR 126 at Wiley Rd	▪ Balance destination access with mobility and safety of the transportation system	ODOT	$20,000	Medium	Partnership
Bridges						
BR-1	County Road 221 bridge over Paulina Creek (NBI Bridge 19083) – Study cost of repairing or replacing this functionally obsolete bridge.	▪ Identifies future bridge cost needs.	Local funds Grants	$30,000	Medium	
BR-2	Powell Butte Highway bridge over Powell Butte Canal (NBI Bridge 03291) – Replace bridge.	▪ Replaces low-sufficiency bridge.	Grants	$1,500,000	Medium	
BR-3	Powell Butte Highway bridge over Powell Butte Wasteway (NBI Bridge 03293) – Replace bridge.	▪ Replaces low-sufficiency bridge.	Grants	$1,500,000	Medium	
BR-4	Johnson Creek Road NE bridge over Ochoco Main Canal (NBI Bridge 13C06A) - Replace bridge.	▪ Replaces low-sufficiency bridge.	Grants	$1,500,000	Medium	

Project ID	Project Name/Location	Needs Addressed	Possible Funding Source	Cost Estimate	Priority	Implementation Considerations
BR-5	Non-NBI bridge replacement program – Replace one non-NBI bridge per year.	▪ Repairs or replaces non-NBI bridges.	Local funds	$4,500,000	Medium	Yes
Safety						
S-1	S Powell Butte Highway & SW Bussett Road: ▪ Install rumble strips along the curve. ▪ Implement variable speed limits that lower in icy conditions ▪ Install lighting. ▪ Reassess curve warning signage and check sign spacing. ▪ Install acceleration lanes on S Powell Butte Highway. ▪ Reconstruct intersection to simplify circulation patterns and turning movements.	▪ Improves visibility and awareness. ▪ Responds to inclement weather conditions and associated safety challenges. ▪ Reduces roadway departure crashes.	Local funds Grants	$870,000	Long	
S-2	Rimrock Acres Loop & NW O'Neil Highway: ▪ Install lighting ▪ Install raised pavement markings ▪ Evaluate existing curve warning signage locations and warning speeds. ▪ Install curve chevrons, guardrail, and rumble strips.	▪ Improves visibility and awareness.	Local funds Grants	$180,000	Medium	
S-3A	S Powell Butte Highway & Alfalfa Road: ▪ Install lighting and curve chevrons along Powell Butte. ▪ Reassess curve warning signage and check for sign spacing.	▪ Improves visibility and awareness.	Local funds Grants	$71,000	Near-	
S-4	OR 126 east of Powell Butte Hwy to Copley Rd: ▪ Widen edge line striping	▪ Improves visibility and awareness.	ODOT	$260,000	Near	Partnership
S-5	OR 370 east of Happy Hollow Dr ▪ Install rumble strips and/or wider edge line striping.	▪ Improves visibility and awareness. ▪ Reduces roadway departure crashes.	ODOT	$22,000	Near	Partnership
S-6	OR 380 south of NE 3rd St ▪ Evaluate access management along the corridor.	▪ Improved access management can reduce potential conflicts.	ODOT	N/A	Near	Partnership
S-7	Juniper Canyon Road variable speed limit ▪ Implement variable speed limit based on weather conditions.	▪ Responds to inclement weather conditions and associated safety challenges.	Local Funds	TBD based on future evaluation	Near	
S-8	Juniper Canyon Road alignment delineation: Add raised pavement markers on Juniper Canyon Road. Add edgeline rumble strips to Juniper Canyon Road	▪ Delineates alignment of the roadway for night driving. ▪ Reduces roadway departure crashes.	Local Funds	$94,000	Near	
S-9	Juniper Canyon Road horizontal curve signage and markings	▪ Improves awareness.	Local Funds	$10,000	Near	
S-10	Powell Butte Road horizontal curves pavement markings	▪ Improves awareness.	Local Funds	$10,000	Near	
S-11	Davis Loop Road tree removal	▪ Reduces fixed-object crashes with trees.	Local Funds	TBD based on future study	Medium	
S-12	Powell Butte (OR 126) Speed Feedback Signs	▪ Improves awareness.	ODOT	$50,000	Medium	Partnership
S-13	US 26 systemic safety Treatments, including edgeline rumble strips.	▪ Reduces roadway departure crashes.	ODOT	$50,000	Medium	Partnership

Project ID	Project Name/Location	Needs Addressed	Possible Funding Source	Cost Estimate	Priority	Implementation Considerations
S-14	Lamonta Road horizontal curve signage, speed feedback sign, and delineators	▪ Improves awareness.	Local Funds	$50,000	Medium	
S-15	OR 126 systemic safety treatments, including edgeline rumble strips.	▪ Reduces roadway departure crashes.	ODOT	$50,000	Medium	Partnership
Bicycle						
B-1	OR 126 from SW Powell Butte Hwy to Prineville UGB limits: ▪ Shared Use Trail along the south side of OR 126	▪ Improves safety and comfort for people walking, rolling, and biking. ▪ Improves multimodal connectivity.	ODOT, Local Funds	$6,600,000	Medium	Partnership
B-2	Barnes Butte Road: ▪ Add paved shoulder to Barnes Butte Road	▪ Improves safety and comfort for bicycle travel. ▪ Improves multimodal connectivity.	Local Funds	$3,800,000	Long	
B-3	Barnes Butte Shared-Use Trail Connections ▪ Shared Use Trail connecting Barnes Butte Road to Iron Horse Shared Use Trail in Prineville.	▪ Improves multimodal connectivity.	Local Funds	$4,900,000	Long	
B-4	OR 27 Scenic Bikeway Bicycle Hub	▪ Provides support and information for bicycle travelers.	Private partnership	$30,000	Long	Partnership
B-5	US 26 (Madras Highway) shared-use trail • Extend existing Shared Use Trail northwest to the County line parallel to US 26	▪ Improves multimodal connectivity	ODOT, Local Funds	$7,100,000	Long	Partnership
B-6	Houston Lake Road, Williams Road, and Reif Road shared use trails	▪ Improves multimodal connectivity	Local Funds	$10,500,000	Long	
B-7	Juniper Canyon Road (south) paved shoulders	▪ Improves multimodal connectivity	Local Funds	$5,400,000	Long	
B-8	OR 27 Shared Use Trail to connect to planned path in Prineville.	▪ Improves safety and comfort of active mode travel along a popular cycling route that has high demand for both bicycle and motor vehicle travel.	ODOT, Local Funds	$4,400,000	Medium	Partnership
B-9	Bicycle Signage	▪ Improves legibility of designated bicycle network in Crook County.	Local Funds	$50,000	Medium	
Pedestrian						
P-1A	OR 126 and Williams Road ▪ Install sidewalk, curb and gutter, curb ramps, and intersection lighting ▪ Install marked crosswalks on all four legs of the intersection	▪ Improved safety and comfort for travel to community destinations; increased visibility at roadway crossings.	ODOT Local Funds SWIP	$2,900,000	Medium	Partnership
Public Transportation						
T-1	Crook County Service Enhancement Plan: Institute evening and Saturday limited circulation as part of Route 26 flex-route	▪ Increases public transportation service frequency	Already adopted as part of other plans		Medium	Partnership
T-2	Fixed route enhancements to increase service in Prineville and expand connections to destinations.	▪ Provide transit access to key destinations in Prineville.	CET City of Prineville Local Funds	TBD	Long	Partnership
T-3	Dial-A-Ride enhancements and Transportation Networking Company (TNC) encouragement	▪ Increase on-demand transit service area	Already adopted as part of other plans		Near	Partnership
T-4	Transit community outreach	▪ Enhance ease of use of the bicycle, pedestrian, and transit system in Crook County.	ODOT City of Prineville Local Funds	Variable	Near	Partnership
Freight						
F-1	Bus Evans Road and Elliott Lane	▪ Reconstructs intersection to freight route standards.	Local Funds Grants	$15,000,000	Long	

Project ID	Project Name/Location	Needs Addressed	Possible Funding Source	Cost Estimate	Priority	Implementation Considerations
F-2	US 26 railroad bridge feasibility study	▪ Identifies feasibility of accommodating oversized loads on US 26.	ODOT	$35,000	Medium	Partnership

Appendix E

Juniper Canyon Alternatives Analysis

DATE: September 8, 2025
TO: John Eisler, Crook County
FROM: Erin David, Kendra Ely, PE and Ryan Farncomb, Parametrix
SUBJECT: Juniper Canyon Alternatives Analysis
PROJECT NUMBER: 274-2825-006
PROJECT NAME: Crook County Transportation System Plan Update

Introduction

This memorandum summarizes the results of the Juniper Canyon Alternatives Analysis completed as part of the Transportation System Plan (TSP) update. This effort builds on prior studies, community engagement efforts, and planning processes. Conducted in coordination with the TSP update, the Alternative Analysis gathered feedback from community members, consulted with project partners, and analyzed site conditions to identify a preferred alternative that improves access to and from Juniper Canyon. The results of this analysis will be incorporated into the 2025 TSP Update. The following memorandum documents the process used to identify and analyze route alternatives; it also identifies the preferred route for inclusion in the TSP.

Study Area and Context

Juniper Canyon is located south of Prineville in unincorporated Crook County. The area is home to more than 2,000 households and is growing quickly. In 2021, the County identified that available lands in the area could support an additional 2,000 households. There are limited services available in Juniper Canyon, requiring most residents to travel to Prineville or beyond for work, school, errands, and more. Currently, Juniper Canyon Road is the only route that connects area residents to the places they need to go. Prineville Lake Access Road, at the south end of the Juniper Canyon study area, also provides access to the area, but the road is closed seasonally and does not connect to any key destinations. This means that Juniper Canyon Road is effectively the only route of egress for the community and any blockages or closures not only limit residential access but can also negatively affect emergency response.

In the area surrounding Juniper Canyon, there are several factors that further affect connection opportunities, including:

- Steep slopes are present both east and west of Juniper Canyon communities.
- The Wild and Scenic designation on the Crooked River extends north along OR 27 from the Prineville Reservoir and Bowman Dam. This designation aims to preserve and protect the river, water quality, and the associated scenic resources from overuse, instream development, and other impacts. This designation restricts certain types of development both within the designated area and in locations within the area's viewshed.
- Significant portions of the area surrounding Juniper Canyon are owned and operated by the Bureau of Land Management (BLM); the agency's Resource Management Plan guides the allowable uses in these areas. The designations vary across the study area.

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- BLM has designated the Chimney Rock segment along the Crooked River as a part of the National Conservation Lands reserve. This segment encompasses the Crooked River and surrounding lands moving northwest from Bowman Dam at the Prineville Reservoir. This area is noted for its remarkable scenic quality and valuable natural resources, and supports critical flora and fauna habitats. These habitats and qualities include a unique stand of dogwood trees, standout basalt formations, uncommonly stable and diverse stream and riparian zones for the region, and a habitat that supports white mule deer and predatory raptors like bald eagles.

The study area and more information about these features are shown in Figure 1.

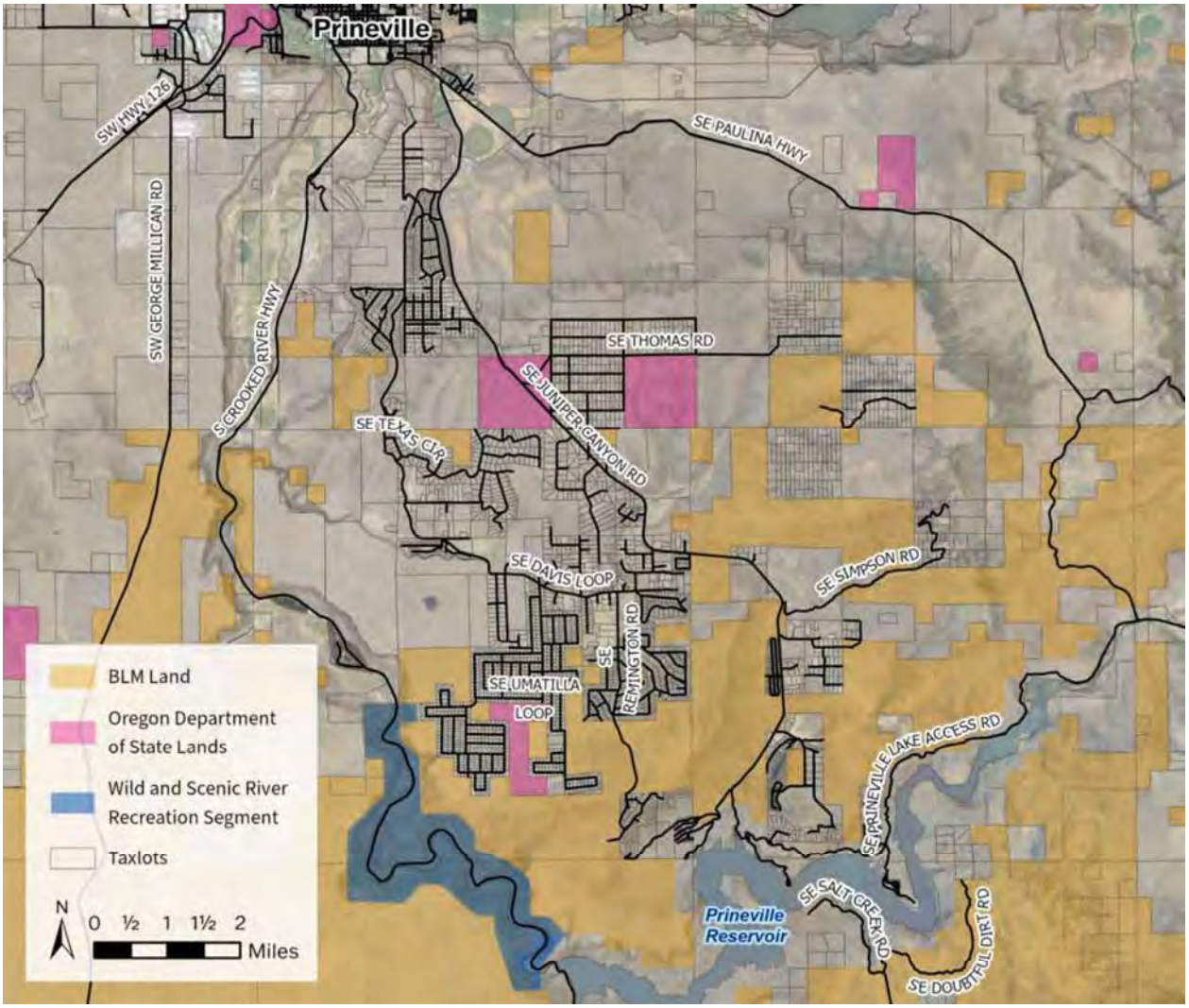


Figure 1. Juniper Canyon Study Area

Access Needs

A new access route has been a community priority for many years. The primary reasons for developing an additional access include:

- **Traffic Congestion:** As the Juniper Canyon community grows, there will be increasing demand on Juniper Canyon Road and its connections into Prineville. The TSP found that the

intersection of SE Juniper Canyon Road and OR 380 is expected to exceed mobility targets in the future higher growth scenario.[1] A new access route could help alleviate congestion at this intersection and on 3rd Street/US 26 through Prineville.

- **Emergency Services Response**: Juniper Canyon Road is a two-lane roadway and is the only route for emergency service response. In the event of a crash or other blockage, Juniper Canyon Road can be inaccessible to emergency services, limiting access both into and out of the community.
- **Evacuation Routes:** Community members have identified concerns about evacuation in the event of a fire or other natural disaster. This study only addresses access issues in the area, and other efforts are underway to holistically address the risk of fire to the Juniper Canyon area. Local fire officials have noted that an additional evacuation route is not necessary, given the expected behavior of fires in the region and the desired community response when a fire occurs. However, it is important to note the longstanding concerns of the community, which the project team considers in the development of alternatives and the recommended connection.

These needs may reflect competing priorities, with the need to balance improvements that respond to transportation system needs, such as traffic congestion and safety, with evacuation options for area residents. Prior planning and engagement efforts identified potential routes, explored public perception of funding mechanisms, and conducted limited property owner discussions for high priority routes. The most recent public survey was completed in 2021, with varied feedback from the community. A preliminary route with connections to the northern extent of Davis Loop was identified.

Study Process

The study was completed in several phases that incorporated information from previous studies, analysis of data that describes each route alternative, community and partner agency input, and early design considerations. The process is summarized in Table 1. The sections that follow describe each phase in more detail.

Table 1. Juniper Canyon Study Process

Study Phase	Description of Activities
Identify and Refine Route Alternatives	The project team compiled previously proposed routes and conducted preliminary analysis about each route's length, slope, percent of route on public land, and alignment with existing facilities. Additional route options were discussed with County staff. Based on feedback received and coordination with the County Board of Commissioners, three news route options were identified for further evaluation following the second engagement milestone. The project team analyzed these routes and developed cost assumptions, consistent with the approach used in earlier phases of the study.
Evaluate Alternatives	The project team evaluated the identified alternatives based on the factors listed above, as well as a relative cost opinion, the goals each route achieved, and if there were any fatal flaws, such as location within the Wild and Scenic River area.

[1] For more information on traffic operations and the growth scenarios evaluated, see the Transportation System Plan.

Study Phase	Description of Activities
	Based on this evaluation, a limited number of alternatives were advanced for a refined evaluation of cost. This process included assumptions about potential facility types, such as paved highway, gravel road, and any bridges or structures required.
Funding Options and Funding Scenarios	The project team developed example funding scenarios to support community engagement and coordination with the County Board of Commissioners. The funding scenarios describe potential funding mechanisms, conceptual costs for Juniper Canyon residents, and implementation timelines.
Community Feedback	Community members were invited to review the route evaluation and development findings and share feedback on preferred alternatives concurrent with the TSP Milestone 2 engagement events in October 2024. A public meeting was held in April 2025 to review the process to date, present the three new alternatives, and convene a community forum to discuss the route options. The County will convene a public meeting in August 2025 to present findings from the study and discuss additional measures related to public safety and fire prevention.
Partner Agency Coordination	The BLM was invited to review the proposed routes and provide feedback about the feasibility of each from the agency's perspective. BLM provided two memoranda documenting the opportunities and limitations of routes. These are included in Attachment C.

Develop and Refine Route Alternatives

The project team identified alternatives based on previous studies and collaboration with County staff (Figure 2). During the course of the study and as a result of outreach, some additional alternatives were added. The project team conducted more in-depth study on the following routes based on community and stakeholder feedback, as well as results of the initial technical evaluation:

- **Alternative W08:** This alternative was originally omitted in the preliminary screening process based on its location adjacent to the Wild and Scenic River area (see Alternatives Evaluation below for more information). However, community members requested additional information about this route, including possible costs.
- **Alternative E05-B:** This is a new alternative that connects to Prineville Lake Access Road from Golden Eagle Drive.
- **JC-2**: This alternative would widen only the northern most segment of Juniper Canyon Road, north of lower Davis Canyon Loop.

Following a fourth community presentation in August 2025, led by Crook County, and through continued discussions with project partners, the County identified an additional route for further consideration that was examined in-depth:

- **Alternative E10** This is a modified alternative that connects SE Simpson Road to OR 380 through BLM land. This alternative only considers a gravel roadway and represents a variation of the original E04.

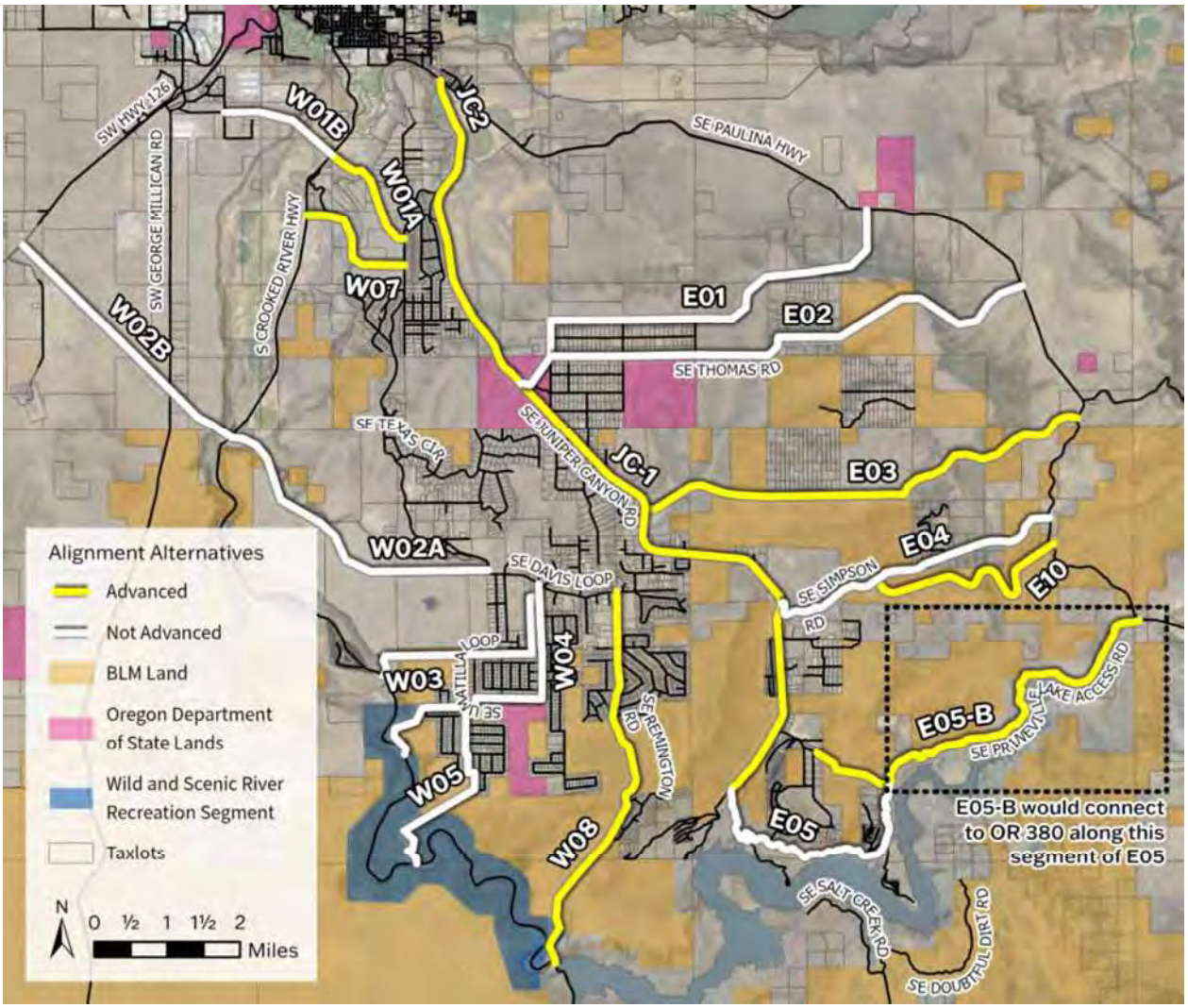


Figure 2. Juniper Canyon Milestone 3 Alternatives

Evaluate Alternatives

The project team evaluated route alternatives based on consistency with TSP goals, route feasibility, and community and partner agency feedback. A screening process was used to identify alternatives that were most likely to meet the study goals. This process also identified alternatives that had significant feasibility flaws. The screening criteria are summarized in Table 2.

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Table 2. Preliminary Alternative Screening

Criteria	Description	Measurement
Route Length and Steepest Slope	Steep slopes impact route feasibility and cost due to needed grading, structures such as bridges and retaining walls, and the type of roadway that could be supported.[2] In conjunction with overall route length, the project team developed an opinion of relative cost.	Relative cost, ranging from $ - $$$$
Route Utility/Consistency with TSP	A high level assessment was completed to identify what each route achieved and its consistency with the findings of the TSP and previous Juniper Canyon access studies: ▪ Alleviates Prineville through traffic and traffic congestion ▪ Creates connection to Highway 126 west of Prineville ▪ Provides egress for emergency evacuation ▪ Provides an alternative access route in case of Juniper Canyon closure	Yes/No for each factor
Public Lands	The project team calculated the percentage of each route located on public lands. This information provided insight into both opportunities to collaborate with BLM, as well as potential schedule impacts related to permitting and NEPA processes.	Percentage of Route on Public Lands
Existing Facilities	In some instances, route alternatives coincide with existing primitive roads.	Yes/No
Facility Type Assumptions	The project team identified the type of roadway expected for each route based on its purpose and grade. *This criterion did not result in removal of any alternative but informed discussion with community members in Milestone 2.*	Facility Type Description
Environmental Impacts	Routes that travelled through the Crooked Wild and Scenic River Area or through sensitive habitat areas were removed from consideration.	Yes/No

[2] Per ODOT highway design manual, table 200-17, rural arterial maximum grades for 45 mph shall be 7%. Alignments with grades exceeding this will need to be reviewed and/or structures added.

The project team identified eight alternatives that were advanced for further analysis, development, and public review. For each analysis, the project team:

- Identified a typical cross section and expected facility type for the roadway
- Refined the route to better account for topography and provide a more complete understanding of grading implications or the need for structures
- Establish an expected cost range based on the route concept

A summary of evaluation outcomes is shown in Table 3. The complete evaluation table is included in Attachment A, and public meeting exhibits are included in Attachment B.

Table 3: Summary of Alternatives Evaluation

Project	Considerations	Cost
Alternatives Advanced		
JC 1: Widen full length of Juniper Canyon (Paved)	▪ Widening is difficult in physically constrained areas of existing roadway, especially at intersections ▪ May have multimodal benefits ▪ Safety performance must be re-evaluated for current standards ▪ Not expected to improve traffic through Prineville	$57.7M to $123.6M
JC 2: Widen from 380 to Davis Loop (Paved)	▪ Phased implementation of Juniper Canyon Widening to reduce costs ▪ Responds to traffic congestion ▪ Improves emergency response access	$9M to $19.3M
W01A (Paved)	▪ Previously vetted alternative ▪ Limited emergency evacuation benefit due to northerly position relative to housing in Juniper Canyon ▪ Must negotiate steep canyon walls ▪ Provides some traffic reduction benefit on Juniper Canyon Rd	$9.3M to $20M
W07 (Paved)	▪ Limited emergency evacuation benefit due to northerly position relative to housing in Juniper Canyon ▪ Provides some traffic reduction benefit on Juniper Canyon Rd ▪ Alignment located partially along existing dirt road	$8.8M to $19M
E03 (Gravel)	▪ Gravel Road - provides emergency evacuation benefit only ▪ Adds significant out of direction travel to Prineville & OR126 ▪ Centralized location = greater evacuation benefit than other east emergency evacuation options ▪ Highest utilization of BLM land of east alternatives	$60M to $128.6M
E05B (Gravel)	▪ Would make a more direct connection to the existing gravel road ▪ Significant topography results in higher costs ▪ Crosses sensitive habitat and is closed seasonally ▪ Would provide seasonal access only ▪ Redundant access in case of evacuation or blockage of Juniper Canyon Road	$10.8M to $23.0M
W08 (Paved)	▪ Steep slopes require significant earthwork to maintain grades ▪ Impacts Crooked Wild and Scenic River area, sensitive habitat ▪ Crosses BLM land ▪ Would use existing connection across the dam ▪ Would provide a new connection out to Reservoir Road and destinations to the west ▪ Would require tribal consultation	$64.6M to $138.4M
E10 (Gravel)	▪ Gravel road – provides emergency evacuation benefit only ▪ Located primarily on BLM land ▪ Provides connection for areas further south in Juniper Canyon; route is located south of the fire station ▪ Significant slopes will require extensive excavation, resulting in higher project costs	$24M to $52M
Alternatives Not Advanced		
W01B	Bridge required to cross Crooked River and adjust grades	$$$
W02A	Feasibility issues, out of direction travel, limited benefit	$$
W02B	Requires 3,000’ long bridge across canyon. Infeasible costs.	$$$$
W03	Feasibility concerns, minimal traffic reduction, out-of-direction travel	$$

Project	Considerations	Cost
W04	Fatally Flawed - impacts Crooked River Wild & Scenic River recreation, minimal traffic reduction benefit, out-of-direction travel	$$
W05	Fatally Flawed - impacts Crooked River Wild & Scenic River recreation, minimal traffic reduction benefit, out-of-direction travel	$$
W06	Fatally Flawed - impacts Crooked River Wild & Scenic River recreation, minimal traffic reduction benefit, out-of-direction travel	$$$
E01	Emergency evacuation benefit only, significant out of direction travel to Prineville & OR126.	$$
E02	Emergency evacuation benefit only, significant out of direction travel, impacts more properties	$$
E04	Emergency evacuation benefit only, significant out of direction travel to Prineville & OR126.	$$
E05	Provides emergency evacuation benefit only. Connection exists today. Federally protected bird habitat and closed part of the year.	$

Funding Options and Funding Scenarios

To support community engagement activities, the project team identified potential funding sources and described possible scenarios to fund a new access route in Juniper Canyon. Project costs for a new route are expected to be significant and vary substantially based on route locations and desired roadway characteristics. New funding sources and likely a combination of funding sources will be needed. Example funding sources are summarized in Table 4 and Table 5.

Table 4: Potential Grant Funding Options

Grant	Funder	Description	Chance of success
BUILD (Better Utilizing Investments to Leverage Development)	Federal	Competitive grant that funds transportation projects with significant local/regional impact	Low – project may not rise to the level needed
Federal/State Earmark	Federal/ State	Requested funds for specific projects by members of Congress or the Legislature	Dependent on lobbying
STIP (Statewide Transportation Improvement Program)	State	Federal and state money directed to projects by Oregon Transportation Commission	Low – project is not regionally significant; competition is high for this source
FEMA BRIC (Building Resilient Infrastructure and Communities)	Federal	Competitive grants that aim to build preparedness and reduce disaster risk Note: As of April 2025, FEMA is looking at elimination of this grant	Low/Medium – evacuation benefits would need to be demonstrated and be higher than other projects competing for this grant
FLAP (Federal Lands Access Program)	Federal	Competitive grant that aims to improve transportation facilities in, near, or accessing federal land	Medium – would need to make case for improving access to BLM or Crook River Canyon area

Table 5: Potential Local Funding Options

Funding Option	Description	Feasibility
System Development Charge (SDC)	▪ One-time fees assessed at the time of development that contribute toward transportation projects. ▪ Average fee (statewide) is $2,500 per new home constructed.	County does not have SDCs today but is looking at them. May take longer to fund entire project since revenues are dependent on development
Developer-built	▪ Part or all of the road built with new housing development by private developers	Possible, dependent on private developer and County coordination. Timeline uncertain.
General fund	▪ County's general fund for many services. Revenues from property tax and other sources.	Many competing needs on general fund. Not feasible to use.
Local Improvement District (LID) or Special Road District (SRD)	▪ Local district that levies a property tax to support a specific project. ▪ Collects special property tax from everyone in the district for a set time frame (up to 15 years) ▪ Funds can be used to float a bond to pay for the project immediately ▪ SRDs have their own governing body and often taken on maintenance responsibility	Requires majority of property owners to agree.
General Obligation (GO) Bond	▪ Bond supported by county tax revenues generally	GO bond recently issued for a different project. Taxpayer interest for another is unlikely.

Two funding scenarios were evaluated, as described in Table 6. These scenarios explore how grants and/or local options could fund the project.

Table 6. Funding Scenario Descriptions

	Scenario 1	Scenario 2
Assumption	Grants fund 50% of project	Local revenue/developer fees fund most of the project
Likelihood/Feasibility	Grant opportunities exist but are competitive; small grant request amounts with higher local match typically perform better.	Fully under local control; high feasibility.
Local Funding Required	Approximately 50% local revenue would be required; this could include SDCs and/or a local improvement district.	100% local revenue would be required; this could include SDCs and/or a local improvement district.
Timeline	5-20 years to construct	▪ 2-5 years for local improvement district ▪ 5-10 years for SDCs

These scenarios were then applied to two example projects, with the assumption that local funding is sourced from a local improvement district. Project A is expected to cost $75 million, while Project B is expected to cost $10 million. These project costs represent low and high ends of the cost estimates developed for the route alternatives and can help inform funding approaches based on the final route selected. Table 7 describes the potential property tax charge for Juniper Canyon residents as part of the local improvement district.

Table 7: Local Improvement District Funding Scenarios for Example Projects

Funding Scenarios	Project Cost	Property Tax Charge*
50% of project cost covered by grants or other sources, 50% covered by local improvement district	Project A: $75M Project	$2,239 per year ($33,599 total over 15 years)
	Project B: $10M Project	$298 per year ($4,479 total over 15 years)
100% of project cost covered by local improvement district	Project A: $75M Project	$4,479 per year ($67,199 total over 15 years)
	Project B: $10M Project	$597 per year ($8,959 total over 15 years)

*Per year for 15 years; this is the typical bond repayment period. Property tax charges were calculated for median property value ($410,000) in Juniper Canyon.

Community Feedback

Engagement was a key component of the Juniper Canyon study process. Countywide, residents were asked to provide feedback on community needs and route alternatives at three milestones, held in coordination with the TSP update engagement activities. The three milestones included:

- **Milestone 1 (February 2024):** Gathered input from the community on current transportation trends, goals, and opportunities or issues that the TSP should address. One community event was held in Juniper Canyon; the desire for a new access route was a common point of feedback during this event.
- **Milestone 2 (October – November 2024)**: Milestone 2 introduced new roadway alignment options to expand access in Juniper Canyon, along with a preliminary evaluation that included cost, feasibility, and expected outcomes.
- **Milestone 3 (April 2025)**: Community members were invited to a public meeting to learn about new route concepts informed by Milestone 2 input and potential funding scenarios. A community forum invited residents to share feedback, ask questions, and identify priorities.
- **Milestone 4 (July 2025):** Community members were invited to a follow-up public meeting to discuss the route concepts further and share additional information about related efforts to support wildfire evacuation needs.

More information about the public engagement process and findings can be found in the summaries for each milestone.

Key Findings

Throughout the study, several key findings emerged from the community feedback opportunities. These include:

- **New Access Purpose:** Most participants in all three engagement milestones emphasized the desire for a route for emergency evacuation purposes. Specifically, community members noted concern about wildfires, especially in summer months. However, some participants identified traffic congestion, emergency response, and transportation safety as priorities for a new access route.
- **New Access Location:** Community members emphasized the importance of location for an emergency evacuation route so that it can serve the greatest number of Juniper Canyon

residents. Most comments identified locations south of upper Davis Canyon Loop. Participants who prioritized operational improvements and emergency response preferred locations further north.

- **Seasonal Access:** Community feedback was divided on the sufficiency of a seasonal route. In the second milestone, many community members expressed interest in route options such as along the Prineville Reservoir that would only be available in summer months. This approach could allow for a gravel road, which may be lower cost to implement, and could expand potential route options, such as areas along the Prineville Reservoir that have seasonal closures due to wildlife habitat. However, in the third milestone, community feedback questioned this approach and the potential need for an evacuation route in winter months.
- **Funding Options:** Community members preferred funding options that use grants or system development charges (SDCs). Many participants indicated that they were not interested in options that would require increased costs to Juniper Canyon residents, such as through a local improvement district.

It is important to acknowledge that many of the comments received reflect community fear of a significant wildfire event. As noted previously, local fire officials have indicated that there is not a need for an additional evacuation route due to the nature of fires in the Juniper Canyon area and in terms of the desired community response, which is generally to shelter in place or assemble in designated areas. Note that this study does not make recommendations about emergency management and is purely focused on transportation access to Juniper Canyon, Regardless, community feedback was clear that additional routes that would function during an evacuation are a strong desire and therefore this study considers this feedback in the selection of the preferred access route. The County is continuing to coordinate with project partners, including Crook County Fire & Rescue and BLM, to identify a range of strategies to improve public safety.

Partner Agency Coordination

The BLM was invited to review the proposed routes and provide feedback about the feasibility of each from the agency's perspective. The project team met with BLM representatives to provide project information and an overview of the study process and route alternatives. BLM provided two memoranda documenting the opportunities and limitations of route alternatives, including consistency with the agency's Resource Management Plan. Feedback identified areas where routes would be inconsistent with area designations, as well as areas where there would be increased potential for collaboration. In general, this feedback has implications both for the timeline and cost of implementation. Depending on the location, there may be additional permitting, Resource Management Plan amendments, or related processes that must be followed. The documentation provided by BLM is included in Attachment C.

Recommendation

Based on the results of this study, two routes are recommended for new Juniper Canyon Access: W01A and E10. These two routes will provide different benefits to the community and are expected to have differing requirements and timelines for implementation. The recommendation for each route is summarized below.

W01A – Davis Loop to OR 27

This 1.7-mile route connects lower Davis Loop to OR 27 to the west and responds to transportation system concerns, including alleviating congestion in Prineville and providing a cost-effective alternative route for emergency response or community travel in the event of a blockage on Juniper Canyon Road.



Figure 3: Recommended Juniper Canyon Access Alternative – W01A

Traffic analysis was not conducted as part of this study to understand how much vehicle traffic may divert to the new roadway; it is recommended that the County conduct traffic analysis during future due diligence to understand traffic impacts to Juniper Canyon and Davis Loop roads. If significant diversion is likely to occur, the County could consider controlling access to the new road such that it would only be useable by emergency responders and/or during occasions when Juniper Canyon Road is blocked.

This route is consistent with the recommendations of the 2021 study. It also minimizes environmental and land use impacts. Community feedback on this alternative was mixed, with varying degrees of support; the primary concern about this alternative is that it would not provide significant evacuation benefits. As noted, local fire officials prioritize wildfire response measures above a new evacuation route.

In order for the route to provide everyday travel utility, the project team recommends that the route be paved and designed to accommodate larger vehicles. As shown in Figure 4, an illustrative connection would include two general purpose travel lanes, measuring 12 feet in width each, and 8 to 10 feet wide shoulders on both sides of the roadway. The wide shoulders can also support active travel modes, including people walking or biking. The existing slope of this route exceeds the design maximum, meaning that significant earthwork will be required. The estimated cost ranges from $9.3 million to $20 million. More information about the connection, including a conceptual location and elevation profile, is included in Attachment D.

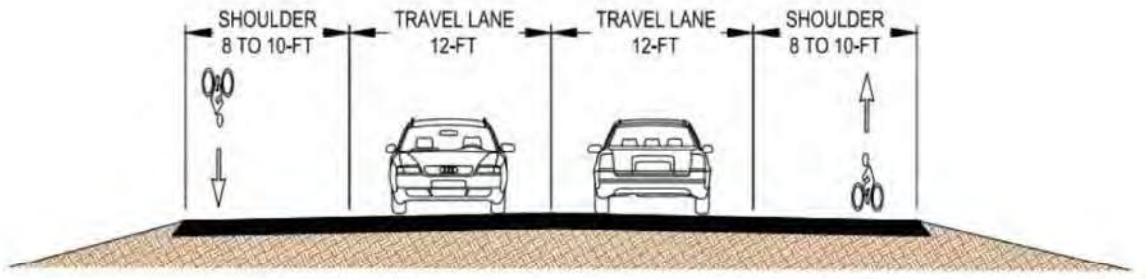


Figure 4: Proposed Cross Section

It is important to note that this alternative was selected to address known transportation issues. While the northern location of this route results in fewer evacuation benefits, it does increase access cost-effectively, in comparison to other alternatives, and would support emergency service response.

E10 – Simpson Rd to OR 380

Based on continued exploration of route alternatives with County staff, elected officials, and project partners, route E10 should continue to be explored as a new emergency access route for the Juniper Canyon community, as shown in Figure 5. This route is approximately 3.2 miles long and would connect SE Simpson Rd to OR 380, traveling along a route south of SE Simpson Road through BLM-owned land. This roadway is assumed to be 20 feet in width and a gravel surface, serving as an emergency evacuation route. The road would be designed with a maximum grade of 12%. The estimated cost ranges from $24.0M to $52.0M. The substantial cost for this alternative is largely due to the route topography, with significant grading required to meet the assumed design parameters.



Figure 5: Alternative E10 - Simpson Rd to OR 380

This route is located further south in the Juniper Canyon community, south of the fire station, and is expected to provide additional benefits for evacuation. In addition to this route, the County should continue to work with project partners and the Juniper Canyon community to advance strategies that respond to wildfire mitigation and evacuation.

Attachment A

Route Alternative Evaluation Table

JUNIPER CANYON ALIGNMENT ALTERNATIVES

SEPTEMBER 2024

Alignment ID	Approx. Length (mi)	Approx. Slope of Steepest Segment[1]	Cost Opinion[2]	Utility				# of Properties Impacted	% Public Land Impacted	Existing Facilities	Facility Type Assumptions	Considerations	Advance Alternative?
				Alleviates Prineville Thru Traffic	Commuter Connection to Hwy 126 west of Prineville	Egress for Emergencies	Alternative Access Route in case of Juniper Canyon Closure[3]						
JC WIDENING	16.3	-	$$$			X		-	-	Paved Roadway	Widen existing paved highway	- Widening may be difficult in physically constrained areas of the existing roadway (especially at intersections) -Existing ROW is approximately 100-ft through most of the corridor. - May have multimodal benefits - Safety performance must be revaluated for current standards - Not expected to improve traffic through Prineville	**Yes**
W01A	2.4	8.2%	$$	X	X	X		4	0%	NA	Paved highway	- Previously vetted alternative. - Potentially willing property owner. - Limited emergency evac benefit due to northerly position relative to housing in Juniper Canyon. -Must negotiate steep canyon walls - Provides some traffic reduction benefit on Juniper Canyon Road.	**Yes**
W01B	3.7	21.2%	$$$	X	X	X		5	0%	Some existing paved roadway	Paved highway; Bridge req'd to cross Crooked River and adjust grades	- Would include bridge/crossing of Crooked River and climb up west canyon wall. Costly solution.	**No**
W02A	6.4	7.9%	$$	X	X	X	X	9	7%	NA	Paved highway	- More centralized connection, provides somewhat better emergency egress. -BLM impacts likely to require NEPA review/permitting - Feasibility issues related to Dry Creek and canyon slope. - Low utilization of public lands. - Significant out of direction travel required for JC community; limited benefit compared to other options	**No**
W02B	5.5	33.3%	$$$$	X	X	X		6	0%	NA	Paved highway; Bridge req'd to cross Crooked River and adjust grades	- Very costly alternative. Likely requires 3,000' long bridge across canyon. -Infeasible from a cost standpoint.	**No**
W03	4.9	11.3%	$$	X		X	X	5	28%	Some existing paved roadway	Paved highway	- Feasibility concerns related to steep canyon walls. - Minimal traffic reduction benefit likely due to out-of-direction travel required for those accessing Prineville. - May be within view of wild & scenic area	**No**
W04	6.2	8.9%	$$	X		X	X	3	21%	Some existing paved roadway	Paved highway	- Fatally Flawed - impacts Crooked River Wild & Scenic River recreation segment - Minimal traffic reduction benefit likely due to out-of-direction travel required for those accessing Prineville.	**No - Fatally Flawed**
W05	8.5	4.8%	$$	X		X	X	3	34%	Some existing paved roadway	Paved highway	- Fatally Flawed - impacts Crooked River Wild & Scenic River recreation segment - Minimal traffic reduction benefit likely due to out-of-direction travel required for those accessing Prineville.	**No - Fatally Flawed**
W06	8.4	5.0%	$$$	X		X	X	2	50%	Some existing paved roadway	Paved highway	- Fatally Flawed - impacts Crooked River Wild & Scenic River recreation segment - Minimal traffic reduction benefit likely due to out-of-direction travel required for those accessing Prineville.	**No - Fatally Flawed**
W07	2.6	Unknown	$$	X	X	X	X	4	47%	Some existing dirt road	Paved Highway	- Site to utilize existing dirt road - Limited emergency evac benefit due to northerly position relative to housing in Juniper Canyon. - Provides some traffic reduction benefit on Juniper Canyon Road.	**Yes**
E01	9.3	5.0%	$$			X		39	9%	Some existing paved roadway	Gravel Road	-Provides emergency evacuation benefit only. - Adds significant out of direction travel to Prineville & OR126.	**No**
E02	11.2	5.7%	$$			X		70	35%	Some existing paved roadway	Gravel Road	-Provides emergency evacuation benefit only. - Adds significant out of direction travel to Prineville & OR126. - Impacts more properties than all other east alternatives	**No - BLM impacts likely to require NEPA review/permitting**
E03	9.2	4.4%	$$$			X	X	10	55%	NA	Gravel Road	- Provides emergency evacuation benefit only. - Adds significant out of direction travel to Prineville & OR126. - Centralized location provides greater benefit than the other east side emergency evacuation options. - Highest utilization of BLM land or east alternatives (PENDING BLM feedback)	**Yes (Impacts BLM land, but consider due to centralized location)**
E04	6.1	4.5%	$$			X	X	18	45%	Some existing roadway	Gravel Road	-Provides emergency evacuation benefit only. - Adds significant out of direction travel to Prineville & OR126.	**No - BLM impacts likely to require NEPA review/permitting**
E05	12.8	-	$			X		0	-	Combination of existing paved, gravel and dirt roads	Existing road - sections are unpaved, low speed due to geometry	- Provides emergency evacuation benefit only. - Connection exists today.	**No - limited use of road**

NOTES:
1. Per ODOT highway design manual, table 200-17, rural arterial maximum grades for 45 mph shall be 7%. Alignments with grades exceeding this will need to be reviewed and/or structures added.
2. Costs are relative to all alternatives and based on engineer's opinion. Quantitative cost estimates will be generated for those alternatives advanced to further review.
3. Routes provide alternative access assuming travel between Prineville and Juniper Canyon and involves a closure occurring to the north of the fire station.
4. Approximate number of properties impacted does not account for existing easements and assumes all properties on both sides of proposed road will be impacted.

Attachment B

Public Meeting Exhibits

Public Meeting Exhibits

Milestone 2 Exhibits

Transportation Solutions

Location: Juniper Canyon Access

Issues and Needs

- Growth in Juniper Canyon (~50 new homes each year)
- Limited access through Juniper Canyon Road
- Emergency evacuation during a wildfire emergency

What We Looked At

- Alignments for a new road developed previously
- Extensive community outreach conducted
- Assessed possible alignments, developed concepts and costs.

Goal For Tonight

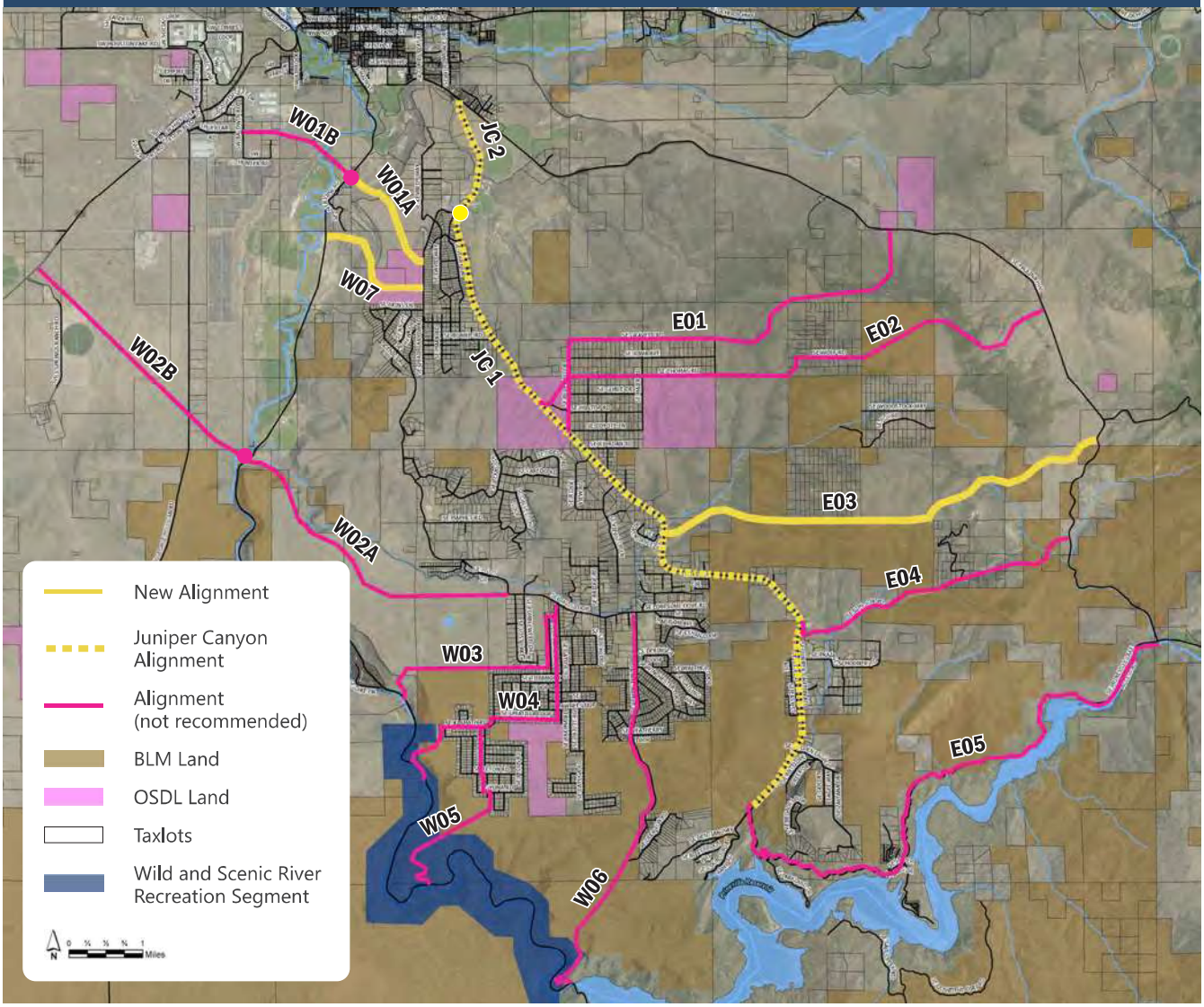
- Present possible access options for Juniper Canyon
- Hear your feedback on which best meets the goals established by the community

Access Alignments Considered

Project	Considerations	Cost
JC 1: Widen full length of Juniper Canyon	• Widening is difficult in physically constrained areas of existing roadway, especially at intersections • May have multimodal benefits • Safety performance must be revaluated for current standards • Not expected to improve traffic through Prineville	$57.7M to $123.6M
JC 2: Widen from 380 to Davis Loop	• Phased implementation of Juniper Canyon Widening to reduce costs • Responds to traffic congestion • Improves emergency response access	$9M to $19.3M
W01A	• Previously vetted alternative • Limited emergency evacuation benefit due to northerly position relative to housing in Juniper Canyon • Must negotiate steep canyon walls • Provides some traffic reduction benefit on Juniper Canyon Rd	$9.3M to $20M
W07	• Limited emergency evacuation benefit due to northerly position relative to housing in Juniper Canyon • Provides some traffic reduction benefit on Juniper Canyon Rd • Alignment located partially along existing dirt road	$8.8M to $19M
E03	• Gravel Road - provides emergency evacuation benefit only • Adds significant out of direction travel to Prineville & OR126 • Centralized location = greater evacuation benefit than other east emergency evacuation options • Highest utilization of BLM land of east alternatives	$60M to $128.6M
Alignments Not Advanced		
W01B	Bridge required to cross Crooked River and adjust grades	$$$
W02A	Feasibility issues, out of direction travel, limited benefit	$$
W02B	Requires 3,000' long bridge across canyon. Infeasible costs.	$$$$
W03	Feasibility concerns, minimal traffic reduction, out-of-direction travel	$$
W04	Fatally Flawed – impacts Crooked River Wild & Scenic River recreation, minimal traffic reduction benefit, out-of-direction travel	$$
W05	Fatally Flawed – impacts Crooked River Wild & Scenic River recreation, minimal traffic reduction benefit, out-of-direction travel	$$
W06	Fatally Flawed – impacts Crooked River Wild & Scenic River recreation, minimal traffic reduction benefit, out-of-direction travel	$$$
E01	Emergency evacuation benefit only, significant out of direction travel to Prineville & OR126.	$$
E02	Emergency evacuation benefit only, significant out of direction travel, impacts more properties	$$
E04	Emergency evacuation benefit only, significant out of direction travel to Prineville & OR126.	$$
E05	Provides emergency evacuation benefit only. Connection exists today. Federally protected bird habitat and closed part of the year.	$

Transportation Solutions

Juniper Canyon - Access Alignments Considered

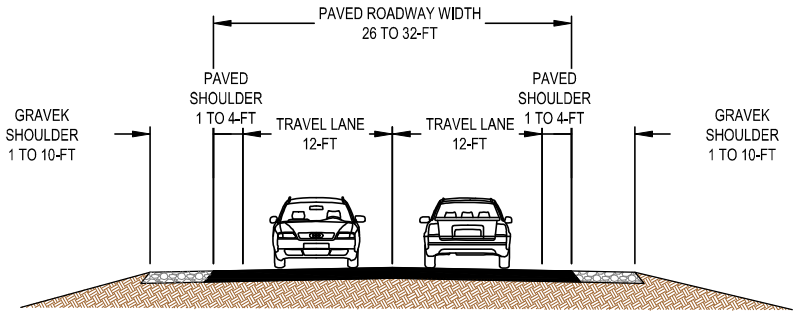


Feedback

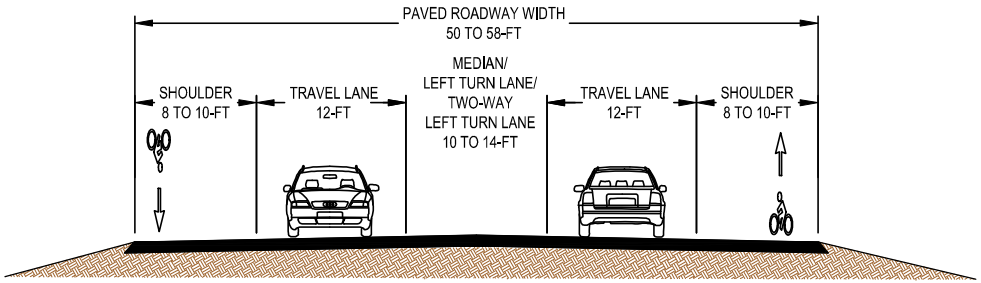
Do you have feedback on the Juniper Canyon access alignments? Scan the QR code or add your comments below.

JUNIPER CANYON ALTERNATIVES - JUNIPER CANYON ROAD WIDENING

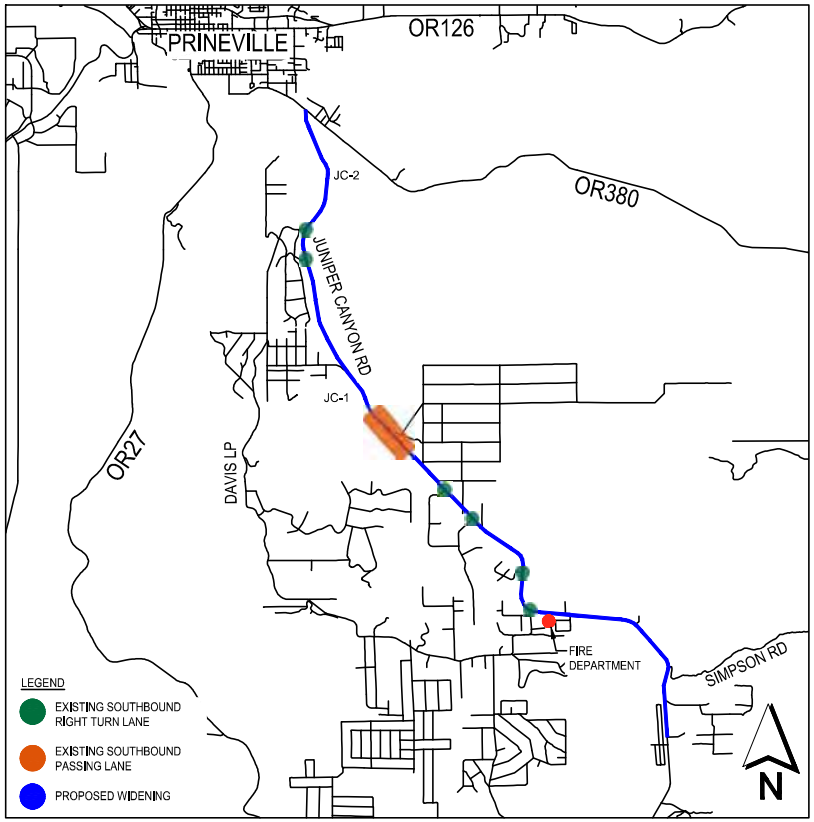
OCTOBER 2024



EXISTING CROSS SECTION



PROPOSED CROSS SECTION



JUNIPER CANYON ROAD ALIGNMENT

NOT TO SCALE

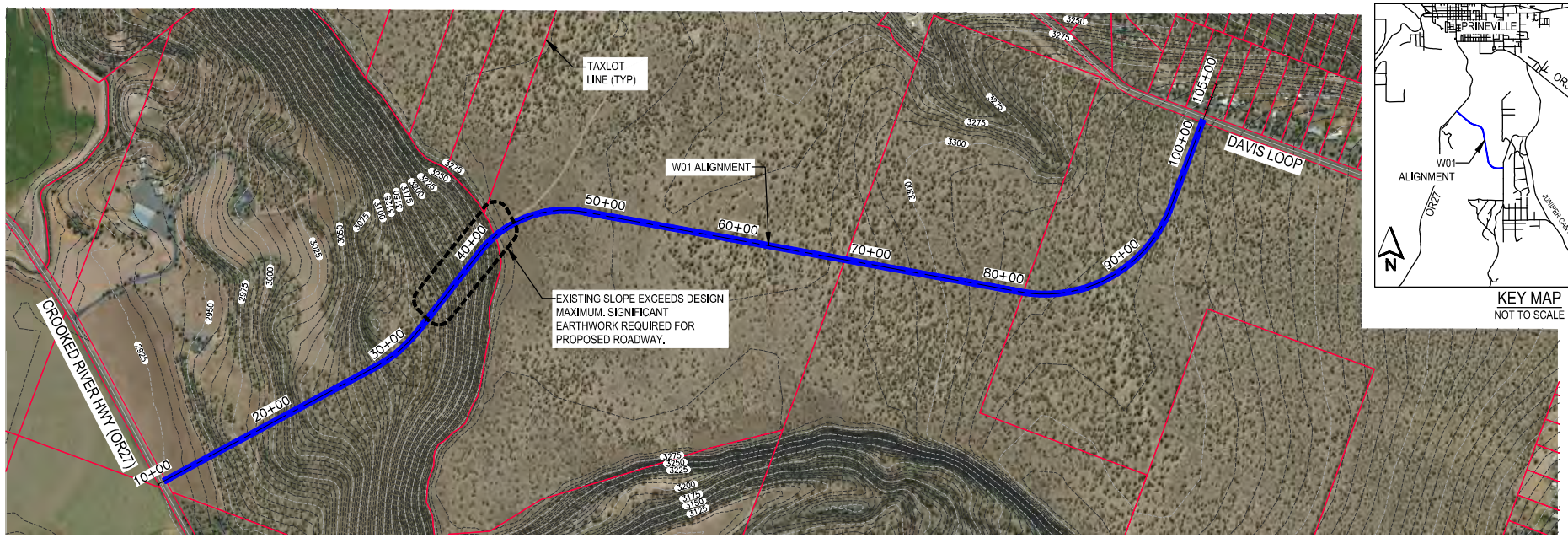
Description	Considerations	Cost
JC 1: Full reconstruction and widening	• Widening is difficult in physically constrained areas of existing roadway, especially at intersections • May have multimodal benefits • Safety performance must be revaluated for current standards • Not expected to improve traffic through Prineville	$57.1M to $123.6M
JC 2: Widen from 380 to Davis Loop	• Phased implementation of Juniper Canyon Widening to reduce costs • Responds to traffic congestion • Improves emergency response access	$9M to $19.3M

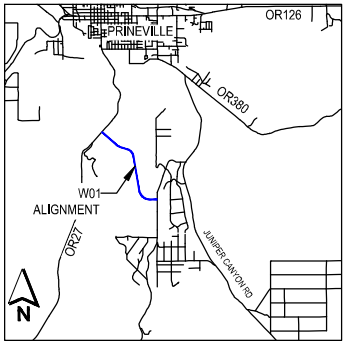
Estimated cost shown in 2024 dollars and does not include costs for right-of-way or permitting.

DRAFT CONCEPT
LAYOUT SUBJECT TO REVISION

Parametrix
150 NW Pacific Park Lane, Suite 110 • Bend, OR 97701
Ph: 541.508.7710

DATE: October 24, 2024 FILE: JC_ALT W01





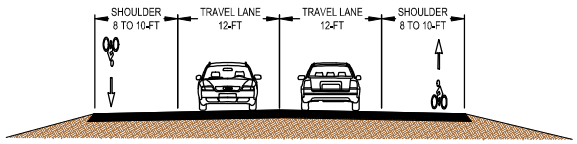
KEY MAP
NOT TO SCALE

JUNIPER CANYON ALTERNATIVES - W01

OCTOBER 2024

Description	Considerations	Est. Cost
Construction of 1.7 miles of paved road.	• Previously vetted alternative • Limited emergency evacuation benefit due to northerly position relative to housing in Juniper Canyon • Must negotiate steep canyon walls • Provides some traffic reduction benefit on Juniper Canyon Rd.	$13M to $20M

Estimated cost shown in 2024 dollars and does not include costs for right-of-way or permitting.

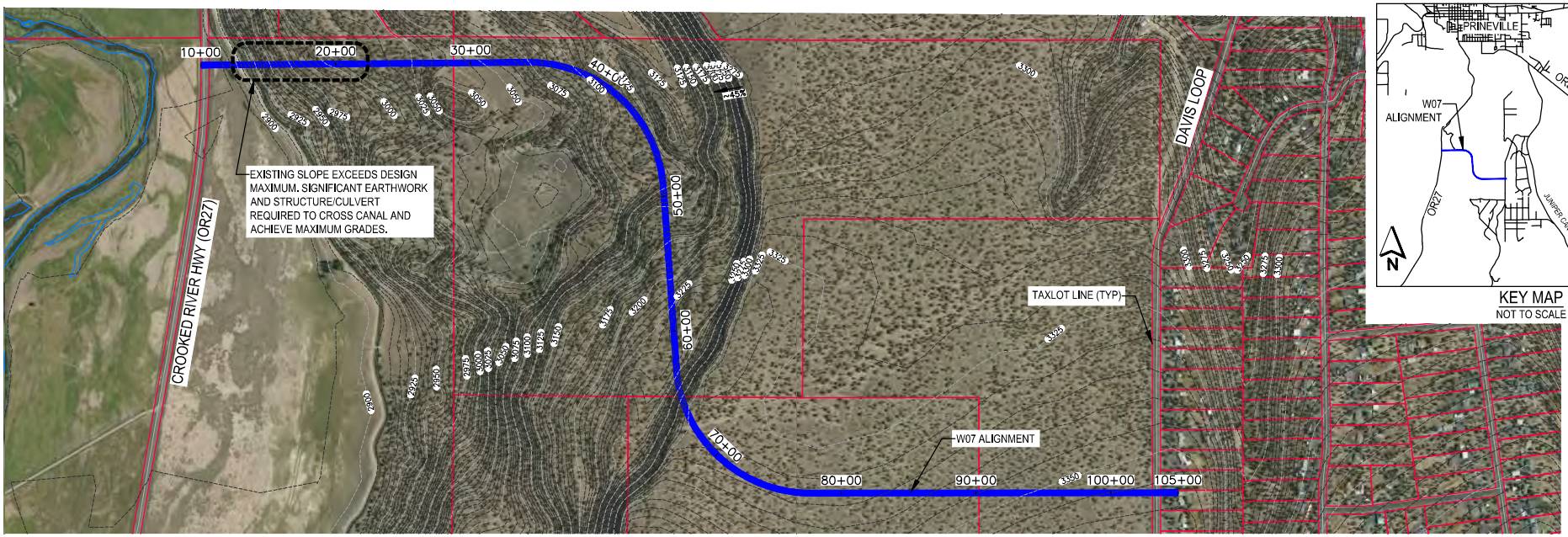


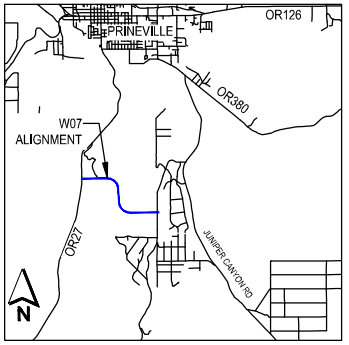
CROSS SECTION

DRAFT CONCEPT
LAYOUT SUBJECT TO REVISION

Parametrix
360 NW Pacific Park Lane, Suite 110 • Bend, OR 97701
Ph: 541.508.7710

DATE: October 24, 2024 FILE: JC_ALT W01





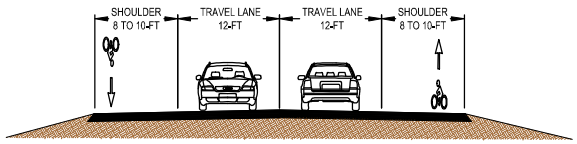
KEY MAP
NOT TO SCALE

JUNIPER CANYON ALTERNATIVES - W07

OCTOBER 2024

Description	Considerations	Est. Cost
Construction of 1.8 miles of paved road	• Limited emergency evacuation benefit due to northerly position relative to housing in Juniper Canyon • Provides some traffic reduction benefit on Juniper Canyon Rd • Alignment located partially along existing dirt road	$8.8M to $19M

Estimated cost shown in 2024 dollars and does not include costs for right-of-way or permitting.

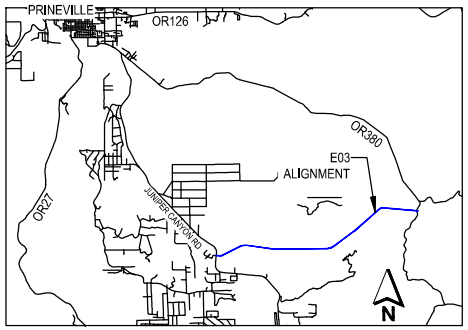


CROSS SECTION

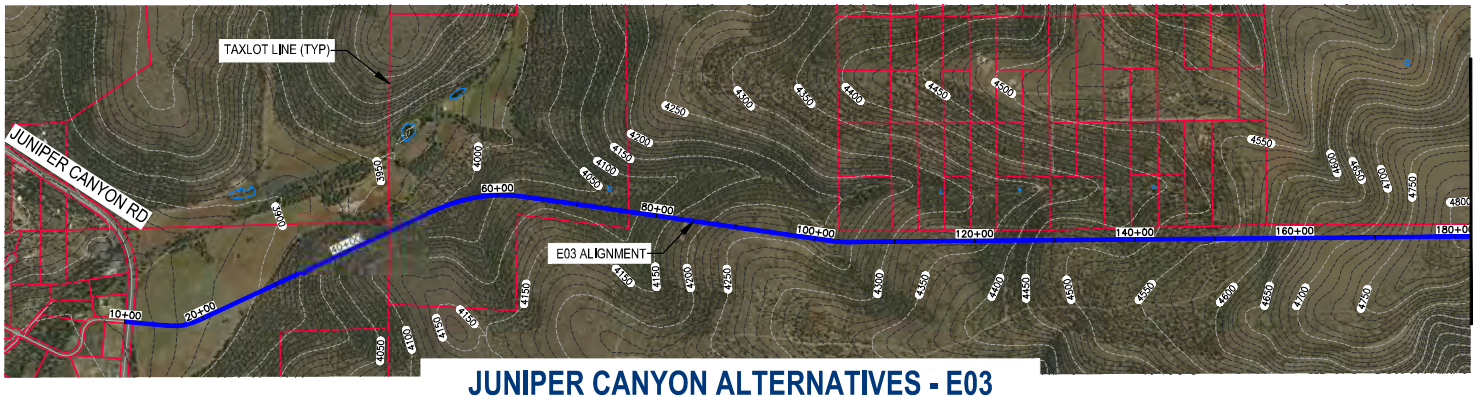
DRAFT CONCEPT
LAYOUT SUBJECT TO REVISION

Parametrix
360 NW Pacific Park Lane, Suite 110 • Bend, OR 97701
Ph: 541.508.7710

DATE: October 24, 2024 FILE: JC_ALT W07

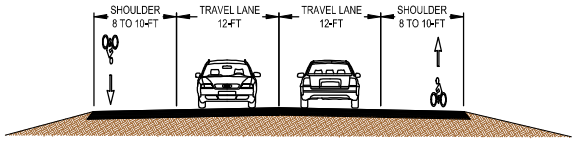


KEY MAP
NOT TO SCALE



JUNIPER CANYON ALTERNATIVES - E03

OCTOBER 2024



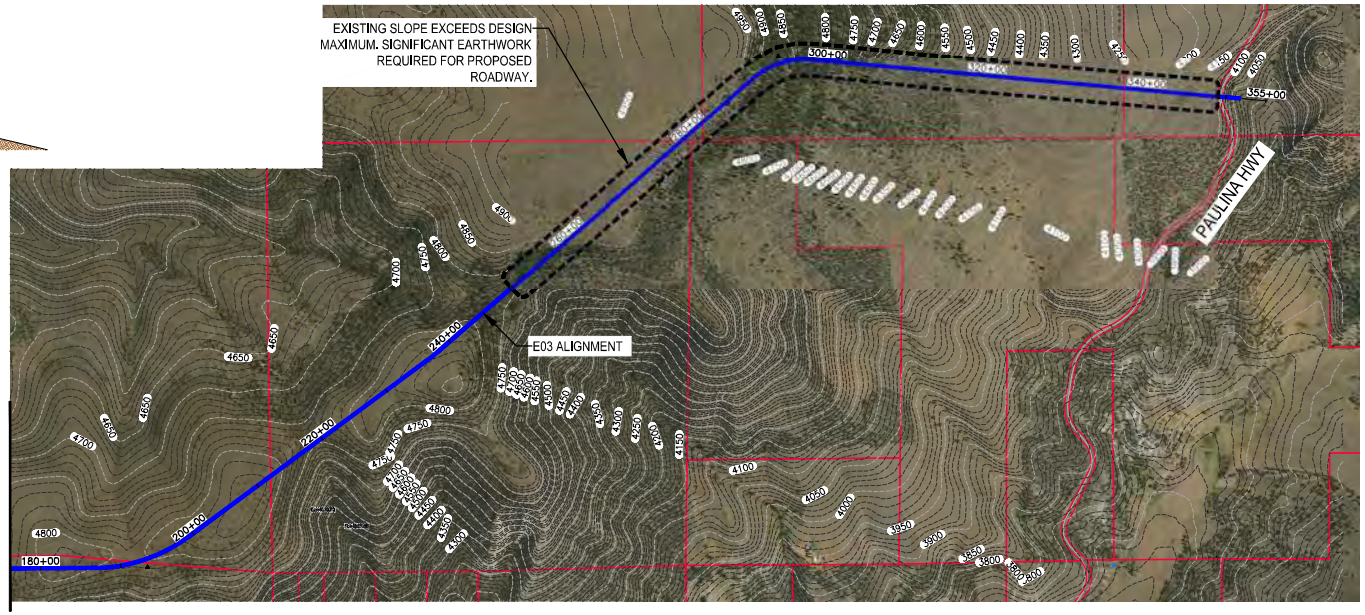
CROSS SECTION

Description	Considerations	Est. Cost
Construction of 6.4 miles of gravel road	• Gravel Road - provides emergency evacuation benefit only • Adds significant out of direction travel to Prineville & OR126 • Centralized location provides greater evacuation benefit than other east emergency evacuation options • Highest utilization of BLM land of east alternatives	[illegible]

Estimated cost shown in 2024 dollars and does not include costs for right-of-way or permitting



DRAFT CONCEPT
LAYOUT SUBJECT TO REVISION



Parametrix
150 NW Pacific Park Lane, Suite 110 • Bend, OR 97701
Ph: 541.508.7710

DATE: October 24, 2024 FILE: JC_ALT E03

Public Meeting Exhibits

Milestone 3 Presentation

CROOK COUNTY TRANSPORTATION SYSTEM PLAN

JUNIPER CANYON ACCESS CONCEPTS

APRIL 16, 2025 | 12:00PM

AGENDA

- Meeting Goals
- Juniper Canyon Improvement Concepts
- Funding
- Implementation
- Feedback

MEETING GOALS

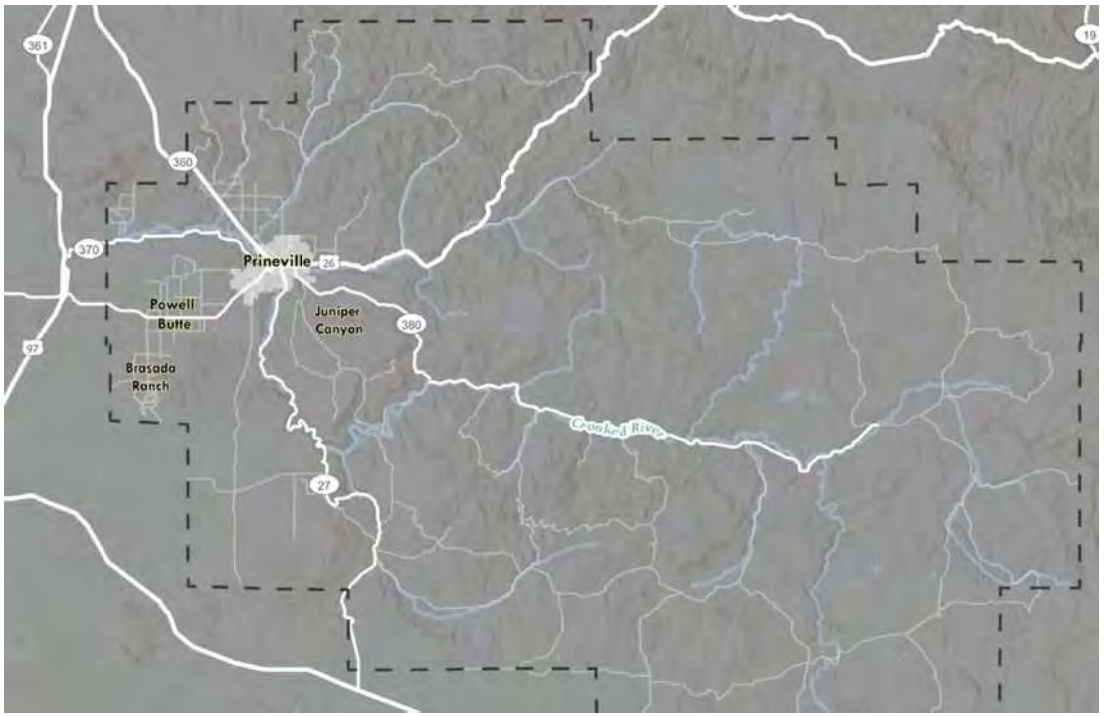
- Review ideas for improving access to and from Juniper Canyon
- Review updated approaches and costs based on public feedback and recent development
- Discuss funding scenarios
- Hear feedback on access ideas and the approach to funding



CROOK COUNTY
MILESTONE #3 PUBLIC ENGAGEMENT
PHOTO - GARY HALVORSON

TSP CONTEXT

- Transportation System Plan
  - County is updating 2017 TSP
  - TSP includes countywide improvement projects
- This effort will define project(s) affecting Juniper Canyon in the updated TSP



WHERE WE'VE BEEN

NEEDS AND ISSUES

- Juniper Canyon community is growing
  - ~50 new housing units each year in recent years
  - Population increased from **2,400** in 2020 to **3,100+** in 2023 (30% increase)
- Juniper Canyon Road is currently the only main access road in and out of the area
  - Also - existing connection at south end out to OR 380 (partly gravel, winding road, seasonal closure)
- Community has identified the need for another access route to:
  - Address evacuation needs
  - Add a secondary access when Juniper Canyon Road is closed due to collisions
  - Relieve congestion on roads feeding Juniper Canyon (e.g. Lynn Blvd and Combs Flat)

PREVIOUSLY IDENTIFIED NEEDS

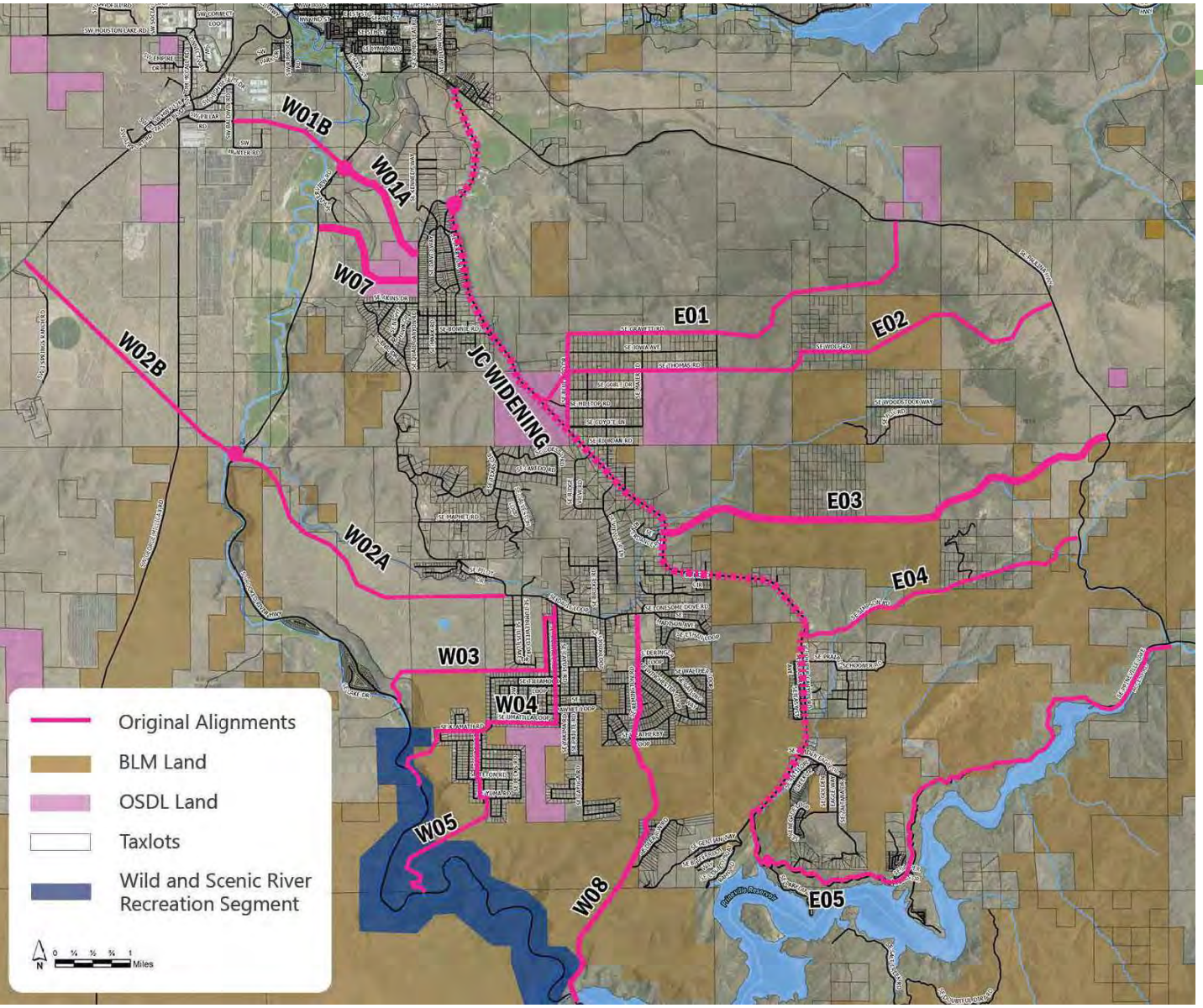
- Recent engagement to understand issues:
  - Juniper Canyon Access Project (2021) – community survey
  - Ongoing Crook County TSP process (2024-ongoing)
- Community identified the following needs through two TSP events in 2024:
  - Alternate route when Juniper Canyon Road is blocked by a collision
  - Additional travel options for emergency response services
  - Improved evacuation egress
  - Alleviate downtown Prineville congestion with additional connection to the west

PUBLIC FEEDBACK

- Route Location
  - "It is imperative to have an egress out of the south end of Juniper Canyon"
  - "[The route should] bypass traffic choke points"
- Route Design
  - "A new highway will [be] better than widening existing roads or adding gravel roads"
  - "Using an existing road to build on seems easiest"
  - "…make sure that large vehicles would be able to navigate"
- Implementation
  - "This access road is long overdue"
  - "…if you did an in sections, you could spread the cost out over a decade"
  - "Less $ to pave existing gravel road"

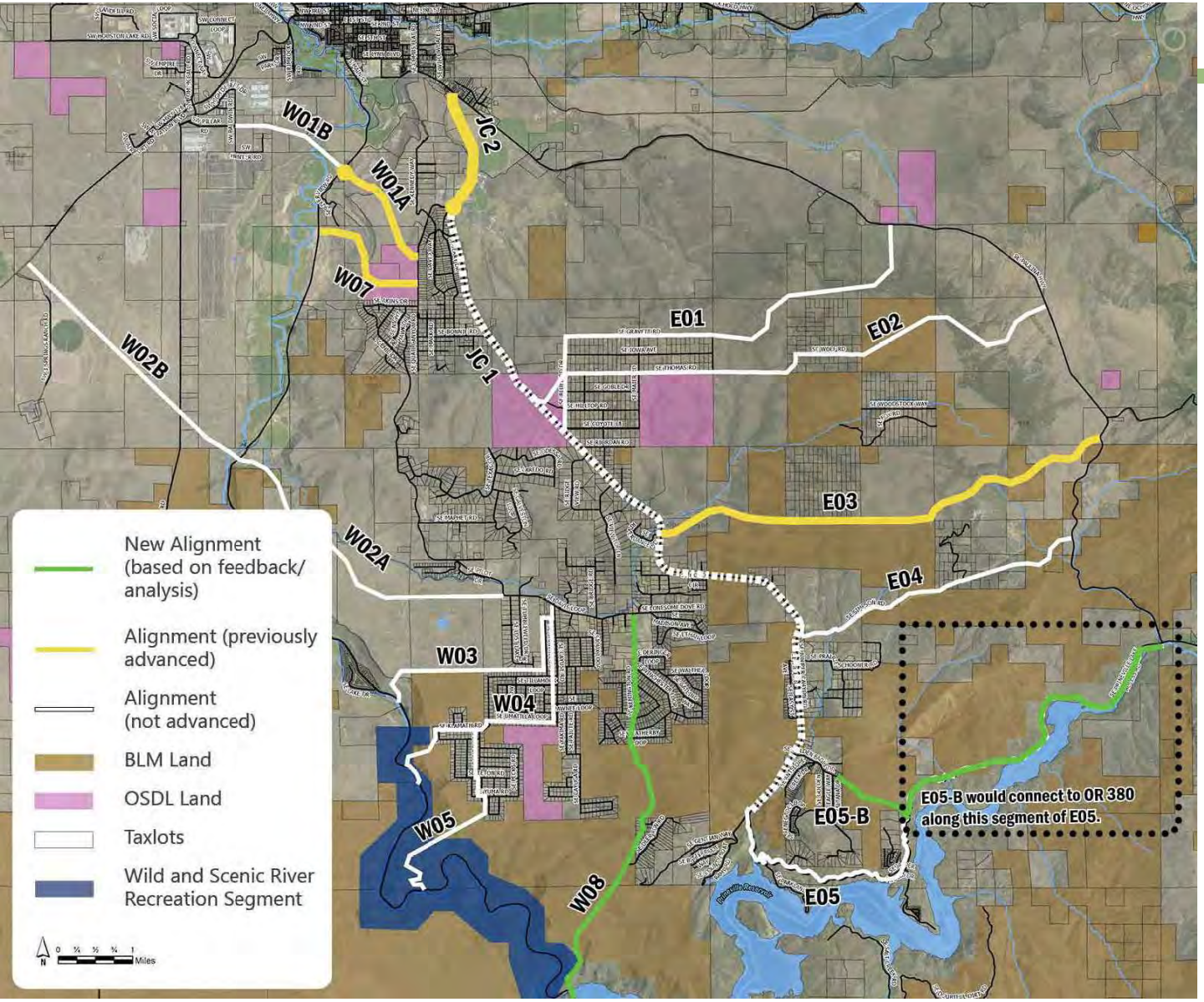
PUBLIC FEEDBACK

- Public feedback is mixed about which alignment is preferred
- Some support widening the existing Juniper Canyon Road, others support options that connect to the Crooked River Highway at the north end, while others support a connection to the south
- We've refined the connection options based on your feedback
- **Tonight, we're looking for your feedback on which option(s) to pursue**
  - **"None of them" or preferring to take no action is an option as well**



Juniper Canyon Alignment Concepts

CROOK COUNTY
MILESTONE #3 PUBLIC ENGAGEMENT

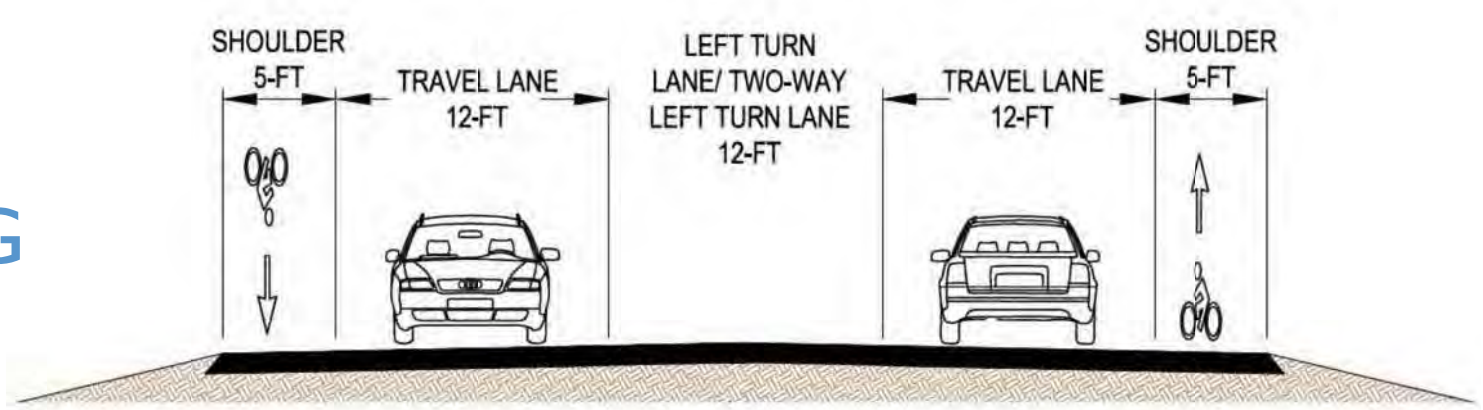


Alignment concepts advanced for further development

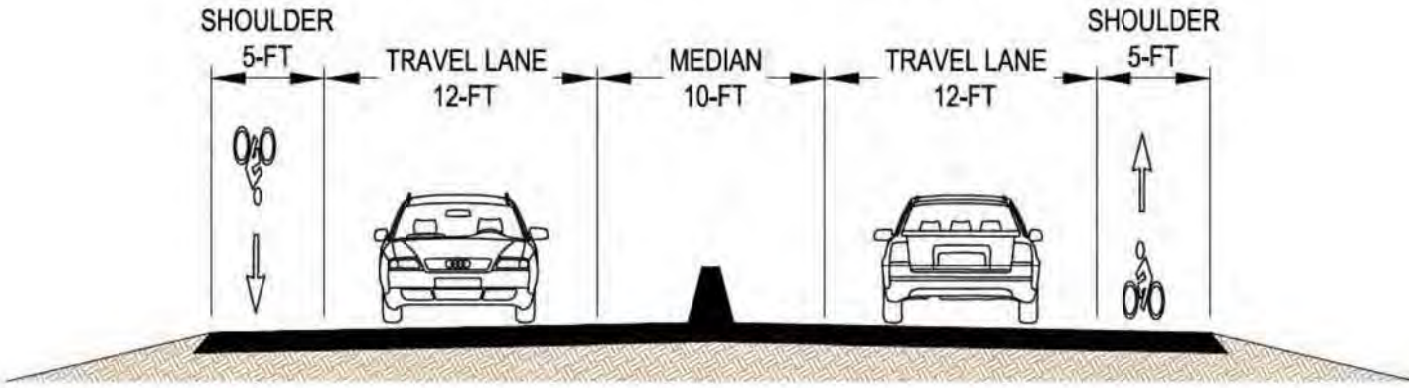
REVISED CONCEPTS

CROOK COUNTY
MILESTONE #3 PUBLIC ENGAGEMENT

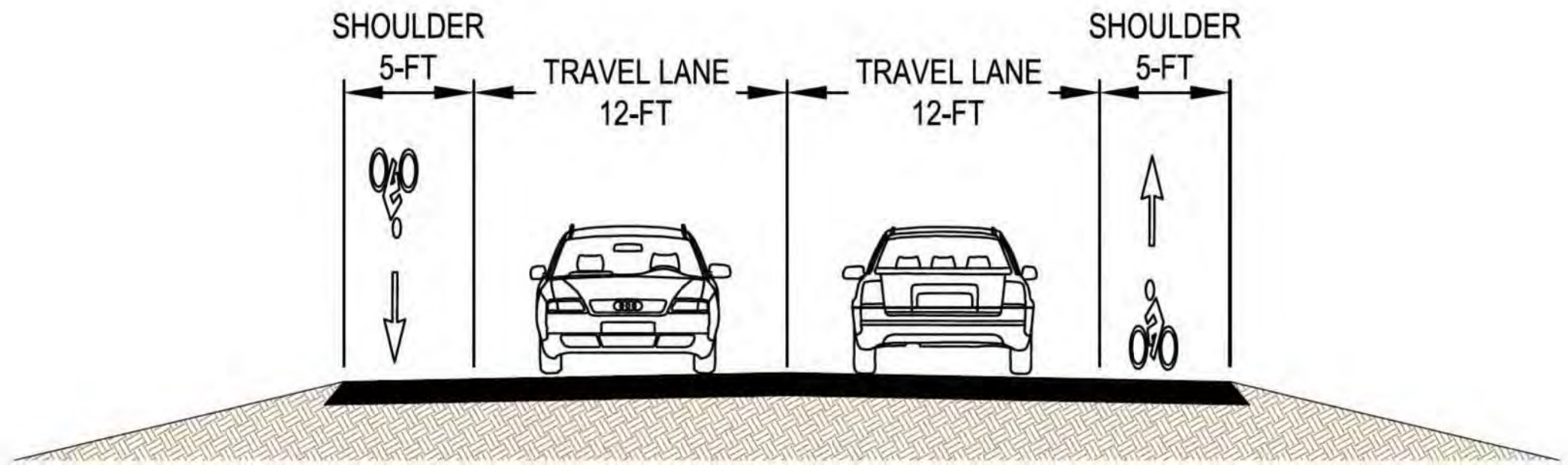
JUNIPER CANYON WIDENING

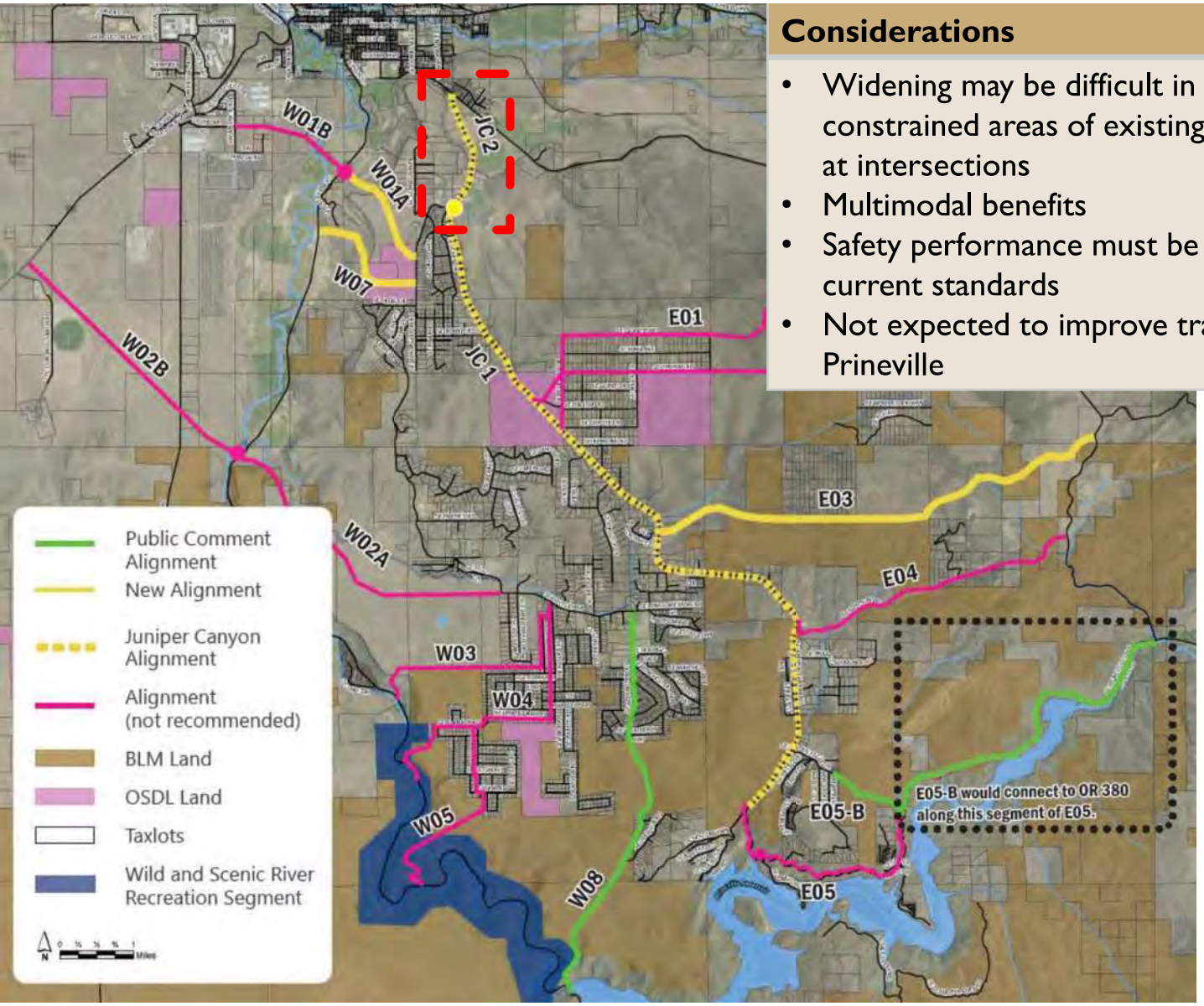


CROSS SECTION



ALL OTHER ALIGNMENTS



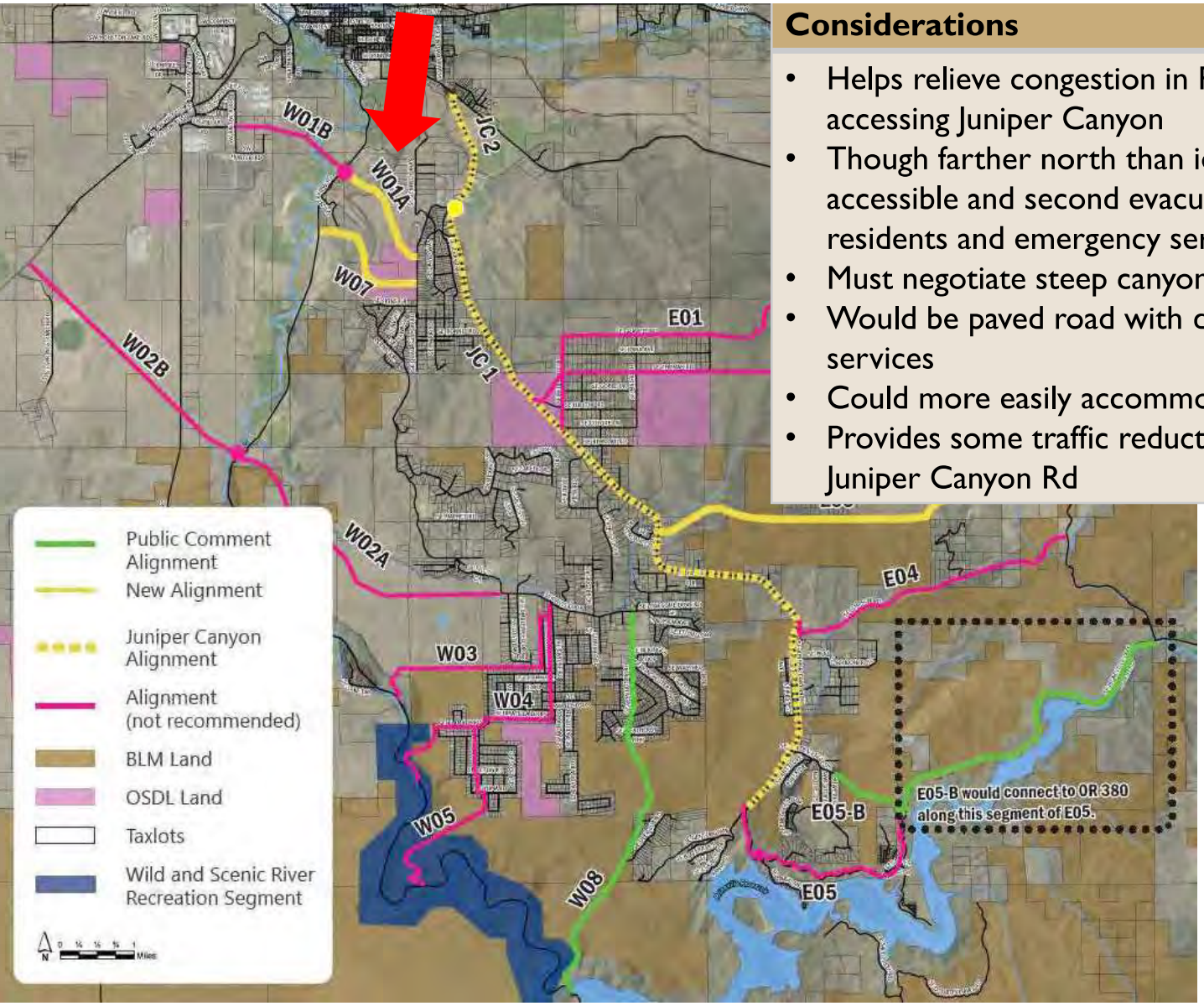


Considerations	Cost
• Widening may be difficult in physically constrained areas of existing roadway, especially at intersections • Multimodal benefits • Safety performance must be reevaluated for current standards • Not expected to improve traffic through Prineville	$8.2M - $17.7M

JC2

Design Assumptions:

- 2 travel lanes + shoulders
- Center two-way left turn lane that also serves as a median divider
- Paved

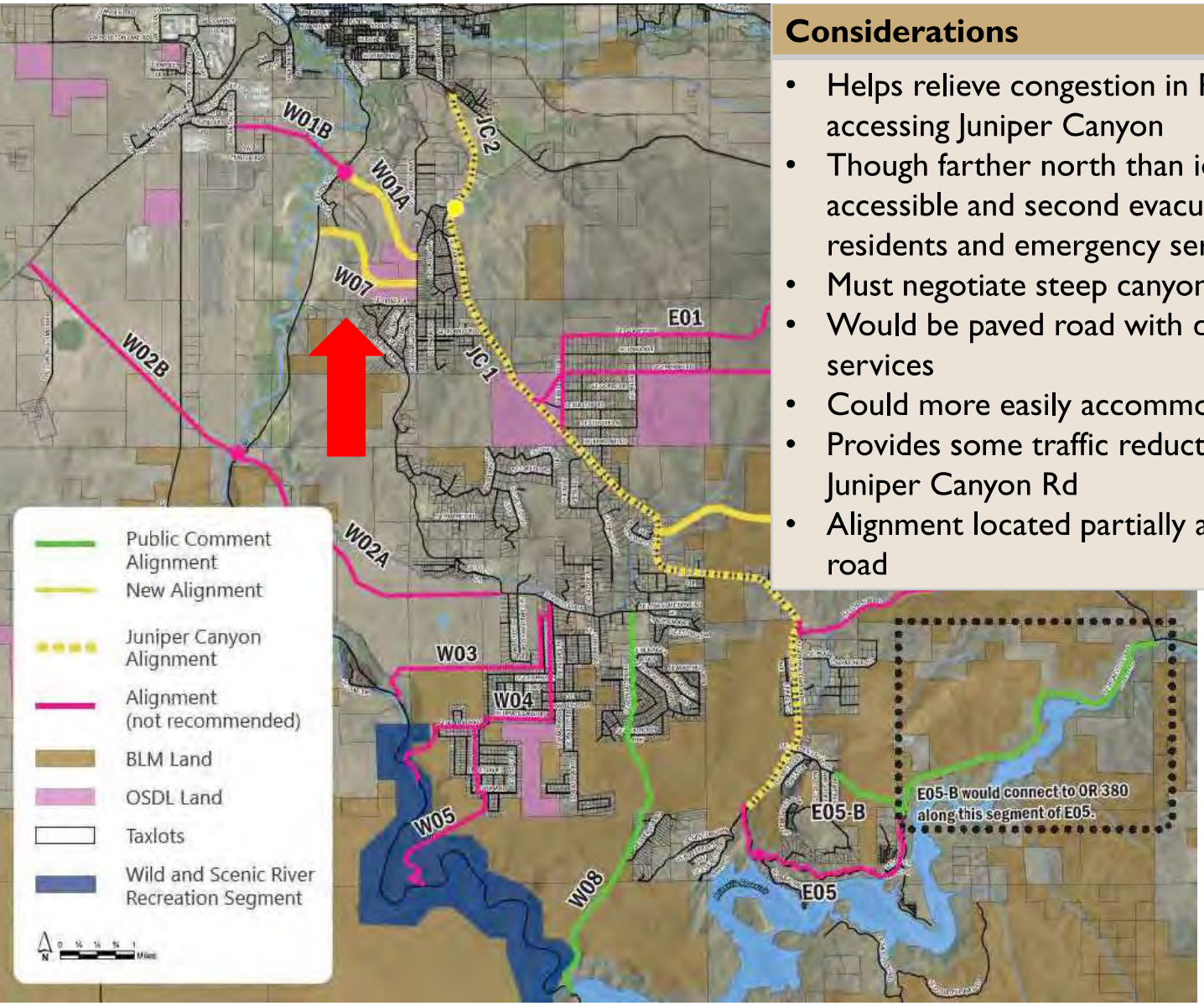


Considerations	Cost
• Helps relieve congestion in Prineville for accessing Juniper Canyon • Though farther north than ideal for evacuation, accessible and second evacuation route for residents and emergency services entry • Must negotiate steep canyon walls • Would be paved road with direct access to services • Could more easily accommodate large vehicles • Provides some traffic reduction benefit on Juniper Canyon Rd	$6.1M - $13.0M

W01-A

Design Assumptions:

- 2 travel lanes + shoulders
- Paved
- Maximum grade: 11.4%

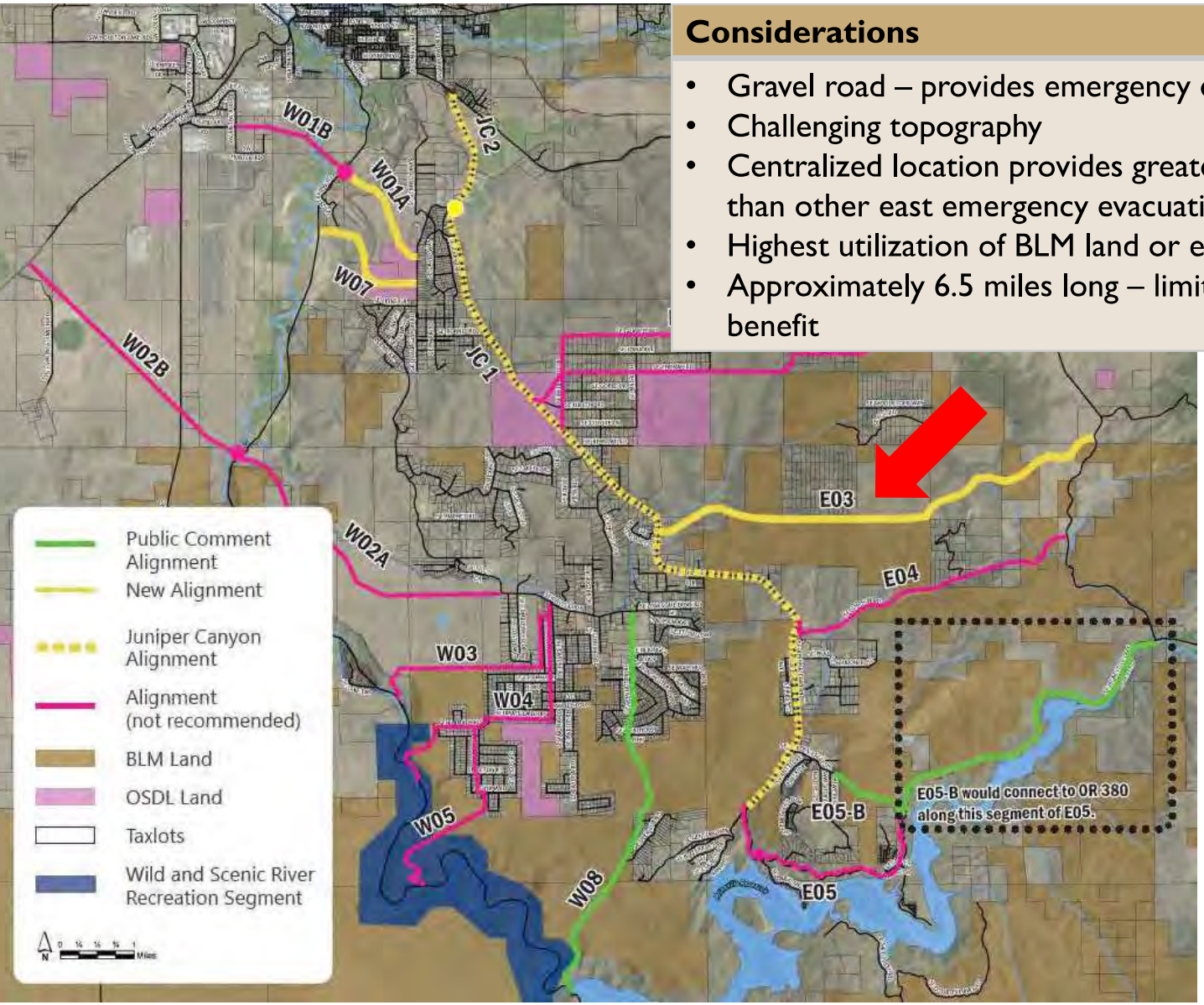


Considerations	Cost
• Helps relieve congestion in Prineville for accessing Juniper Canyon • Though farther north than ideal for evacuation, accessible and second evacuation route for residents and emergency services entry • Must negotiate steep canyon walls • Would be paved road with direct access to services • Could more easily accommodate large vehicles • Provides some traffic reduction benefit on Juniper Canyon Rd • Alignment located partially along existing dirt road	$5.8M - $12.5M

W07

Design Assumptions:

- 2 travel lanes + shoulders
- Paved
- Maximum grade: 12%

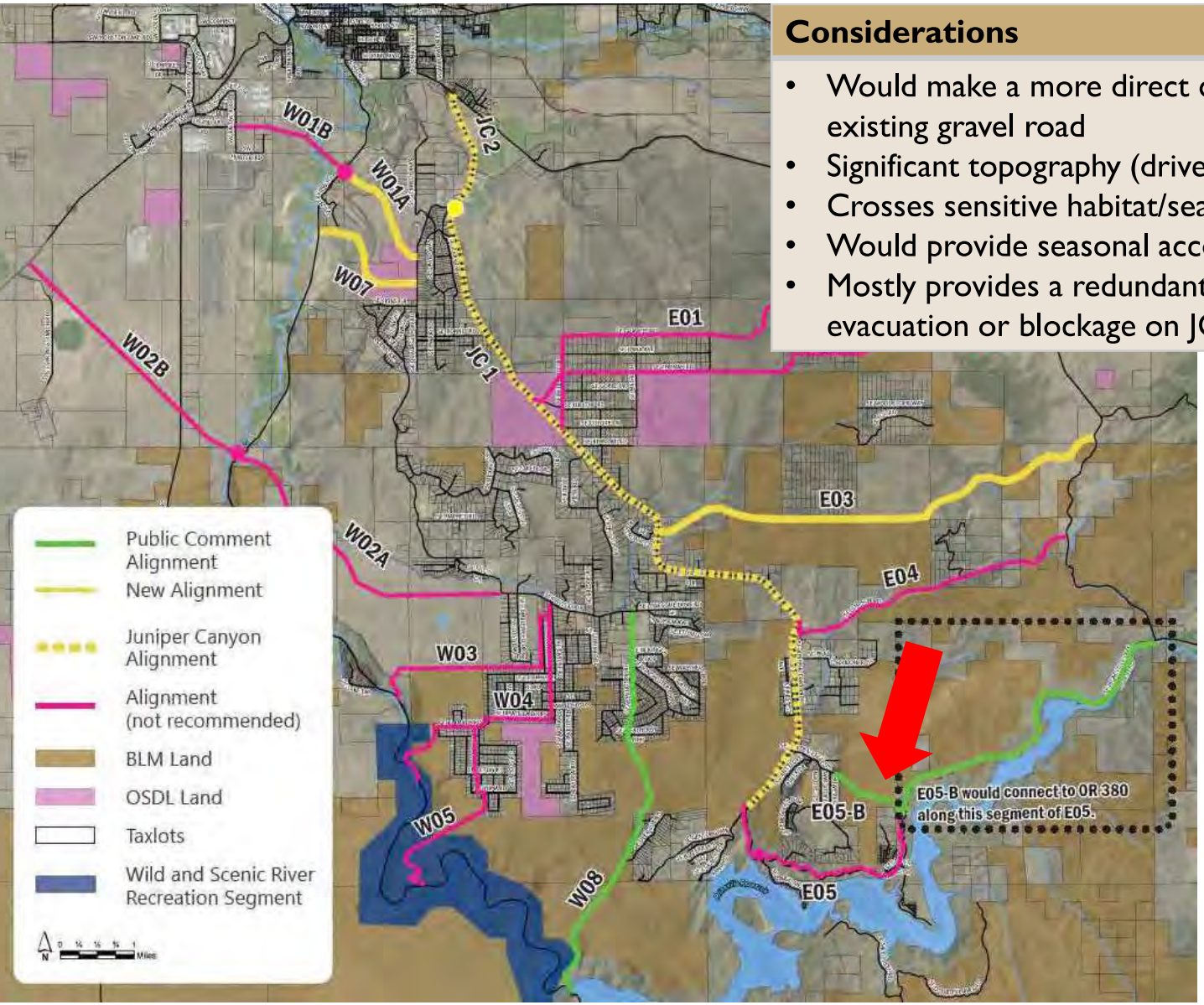


Considerations	Cost
• Gravel road – provides emergency evacuation benefit only • Challenging topography • Centralized location provides greater evacuation benefit than other east emergency evacuation options • Highest utilization of BLM land or east concepts • Approximately 6.5 miles long – limited emergency services benefit	$40.1M - $85.9M

E03

Design Assumptions:

- 2 travel lanes + shoulders
- Gravel
- Maximum grade: 12%

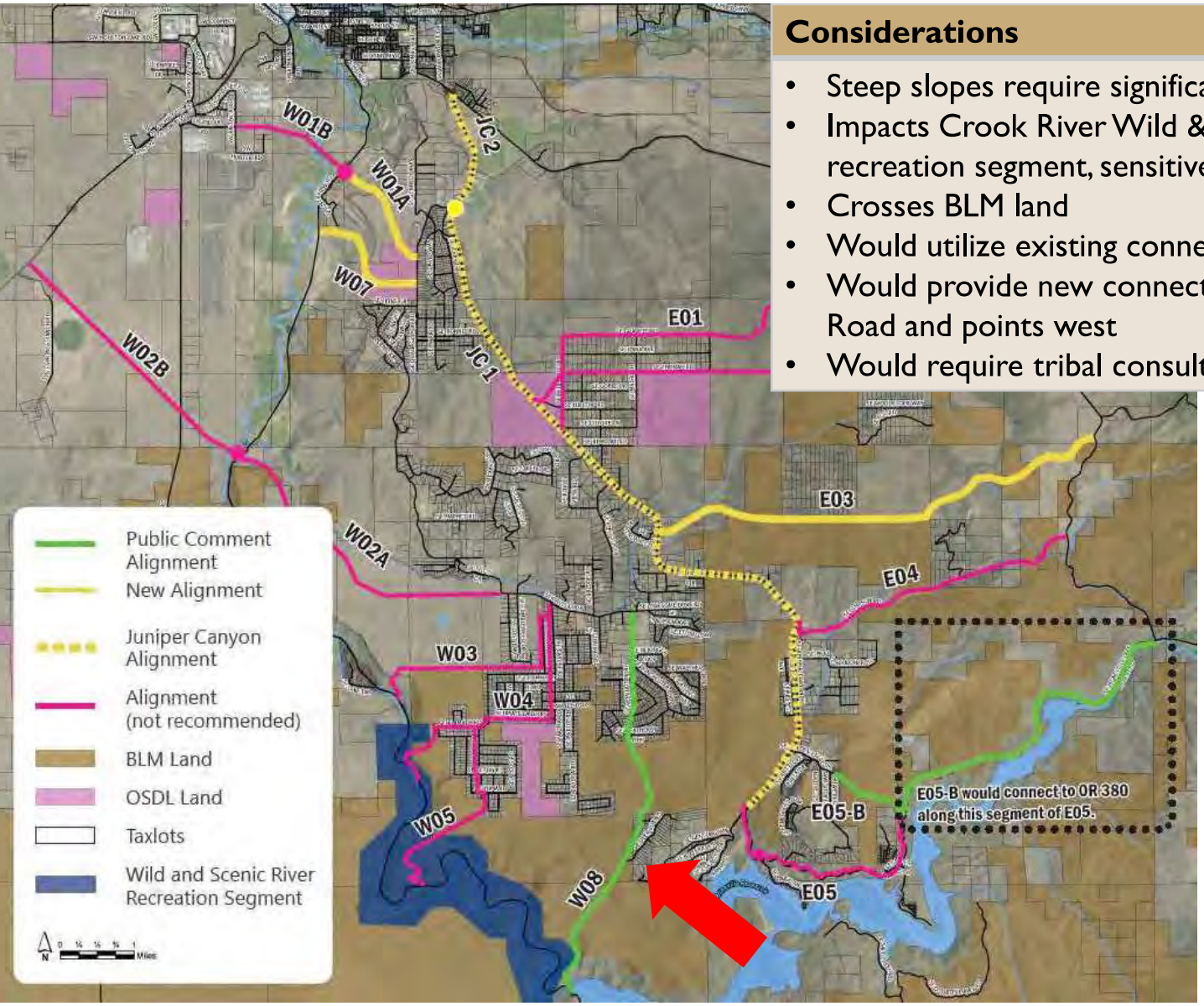


Considerations	Cost
• Would make a more direct connection to the existing gravel road • Significant topography (drives up cost) • Crosses sensitive habitat/seasonal closure issue • Would provide seasonal access only • Mostly provides a redundant access in case of evacuation or blockage on JC Road	$10.8M - $23.0M

E05-B

Design Assumptions:

- 2 travel lanes + shoulders
- Gravel
- Maximum grade: 12%



Considerations	Cost
• Steep slopes require significant earthwork • Impacts Crook River Wild & Scenic River recreation segment, sensitive habitat • Crosses BLM land • Would utilize existing connection across the dam • Would provide new connection out to Reservoir Road and points west • Would require tribal consultation	$64.6M to $138.4M

W08

Design Assumptions:

- 2 travel lanes + shoulders
- Paved
- Maximum grade: 12%

IMPLEMENTATION

CROOK COUNTY
MILESTONE #3 PUBLIC ENGAGEMENT

FUNDING

- Costs are significant and vary for each concept
- Projects would require creation of a new funding source
- Additional funding sources needed for any chosen alignment
- **Question: what funding sources and scenarios are realistic?**



CROOK COUNTY
MILESTONE #3 PUBLIC ENGAGEMENT
PHOTO – OREGON STATE ARCHIVES

GRANTS

Grant	Funder	Description	Chance of success
BUILD (Better Utilizing Investments to Leverage Development)	Federal	• Competitive grant that funds transportation projects with significant local/regional impact	Low – project may not rise to the level needed
Federal/State Earmark	Federal/ State	• Requested funds for specific projects by members of Congress or the Legislature	Dependent on lobbying
STIP (Statewide Transportation Improvement Program)	State	• Federal and state money directed to projects by Oregon Transportation Commission	Low – project is not regionally significant, competition is high for this source

GRANTS

Grant	Funder	Description	Chance of success
FEMA BRIC (Building Resilient Infrastructure and Communities)	Federal	• Competitive grants that aim to build preparedness and reduce disaster risk • Note as of April 2025, FEMA is looking at elimination of this grant	Low/Medium – evacuation benefits would need to be demonstrated and be higher than other projects competing for this grant
FLAP (Federal Lands Access Program)	Federal	• Competitive grant that aims to improve transportation facilities in, near, or accessing federal land	Medium – would need to make case for improving access to BLM or Crook River Canyon area

POTENTIAL LOCAL FUNDING/FINANCING OPTIONS

Funding Option	Description	Feasibility
System Development Charge (SDC)	One-time fees assessed at the time of development that contribute toward transportation projects. **Average fee (statewide) is $2,500 per new home constructed.**	County does not have SDCs today, but is looking at them. May take longer to fund entire project since revenues are dependent on development
Developer-built	Part or all of the road built with new housing development by private developers	Possible, dependent on private developer and County coordination. Timeline uncertain.
General fund	County's general fund for many services. Revenues from property tax and other sources.	Many competing needs on general fund. **Not feasible to use.**

POTENTIAL LOCAL FUNDING/FINANCING OPTIONS

Funding Option	Description	Feasibility
Local Improvement District (LID) or Special Road District (SRD)	• Local district that levies a property tax to support a specific project. • Collects special property tax from everyone in the district for a set time frame (up to 15 years) • Funds can be used to float a bond to pay for the project immediately • SRDs have their own governing body and often taken on maintenance responsibility	Requires majority of property owners to agree.
General Obligation (GO) Bond	• Bond supported by county tax revenues generally	GO bond recently issued for a different project. **Taxpayer interest for another is unlikely.**

FUNDING SCENARIOS

- Funding scenarios consider two example projects, one costing $10M (Project A) and one costing $75M (Project B)
  - Range of costs for the access concepts we looked it is ~$10,000,000 to ~$100,000,000
- This lets us consider how funding could work depending on what project is chosen
- Funding sources include **grants** and **local revenue**

POTENTIAL FUNDING SCENARIOS

- **Scenario 1:** Grants fund most of the project
- **Likelihood/Feasibility:** Not likely. Grant opportunities exist but are very competitive.
- **Local funding required:** ~10%. Local revenue would be required.
  - $1M in local funding for a $10M project
  - $7.5M in local funding for a $75M project
- **Timing:** 2 – 10 years

POTENTIAL FUNDING SCENARIOS

- **Scenario 2:** Grants fund some (50%) of the project
- **Likelihood/Feasibility:** Possible. Grant opportunities exist but are very competitive. Smaller grant request amounts with higher local match do better.
- **Local funding required:** ~50%. Local revenue would be required.
  - $5M in local funding for a $10M project
  - $37.5M in local funding for a $75M project
  - Local funding could include SDCs and/or local improvement district
- **Timeline:** 5 – 20 years to construct

POTENTIAL FUNDING SCENARIOS

- **Scenario 3:** Local revenues/developer fees fund most of the project
- **Likelihood/Feasibility:** High. Under local control
- **Local funding required:** 100%
  - Local funding could include SDCs and/or local improvement district
- **Timeline:** 2 – 5 years if using local improvement district, 5 – 10 years if using primarily SDCs

LOCAL IMPROVEMENT DISTRICT FUNDING

Funding Scenarios	Project Cost	Property tax charge*
50% of project cost covered by grants or other sources, 50% from LID revenue	$75M Project	$2,239 per year ($33,599 total over 15 years)
	$10M Project	$298 per year ($4,479 total over 15 years)
100% of project cost covered by LID	$75M Project	$4,479 per year ($67,199 total over 15 years)
	$10M Project	$597 per year ($8,959 total over 15 years)

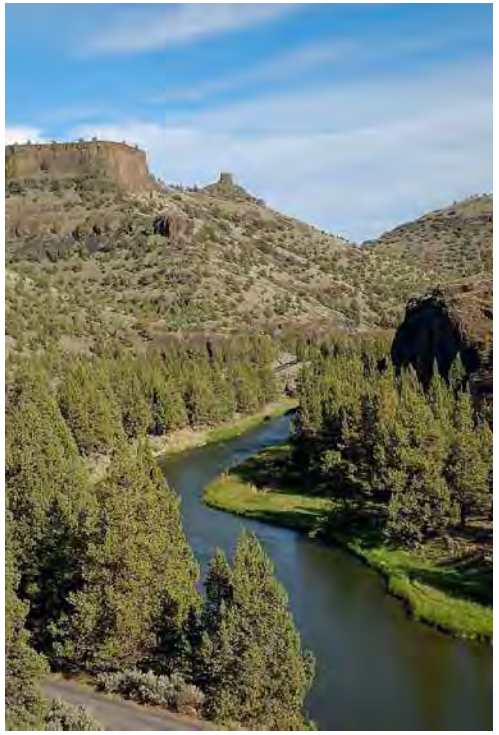
*Per year for 15 years. Calculated for median property value ($410,000) in Juniper Canyon

FEEDBACK

CROOK COUNTY
MILESTONE #3 PUBLIC ENGAGEMENT

FEEDBACK

- Which access options do you most prefer?
- What are acceptable ways of funding the project?



CROOK COUNTY
MILESTONE #3 PUBLIC ENGAGEMENT
PHOTO – GARY HALVORSON

NEXT STEPS

NEXT STEPS

- Select a preferred access concept – or none at all – to include in the Transportation System Plan Update
- Review the draft with the Planning Commission and Board of County Commissioners
- Adopt the Transportation System Plan this summer
- Refine the preferred Juniper Canyon access concept

THANK YOU

Attachment C

Bureau of Land Management Documentation

Information Memorandum

U.S. Department of the Interior
Bureau of Land Management
Prineville District
Deschutes Field Office
3050 NE Third Street
Prineville, OR 97754

DATE: October 29, 2024

FROM: Lisa M. Clark, Deschutes Field Office Manager

TO: Kendra Ely, PE Parametrix

SUBJECT: Juniper Canyon Alternative Alignment Route Review

BACKGOUND

This Memorandum provides a review of four Juniper Canyon alternative exits: W02A, E02, E03, and E04. The routes pass through lands managed by Burean of Land Management (BLM) Prineville District, Deschutes Field Office. The Upper Deschutes Record of Decision and Resource Management Plan (RMP) is the guiding document. All pages and maps cited are from the RMP. Link: https://eplanning.blm.gov/eplanning-ui/project/36346/510

The legal use of the routes reviewed in this document would require applying for a right-of-way (https://www.blm.gov/obtaining-right-way) and compliance with the National Environmental Policy Act (NEPA). Any route selected would require the preparation of an environmental assessment. Some routes would require one or more RMP amendments. BLM recommendations on the difficulty of the NEPA process are document below.

RESPONSE

Routes W02 and E04 are within the Prineville Reservoir Special Recreation Management Area (SRMA) (RMP Map 1).

W02A – T. 16 S., R. 16 E., Sec 6

- This route traverses near the center of one 40-acre parcel of BLM-administered land northeast of the Prineville Reservoir. The 40 acres parcel is the only portion of BLM administered land this route would affect.
- There is a well-defined two track route that traverse the parcel; however, this route is not a designated route as defined by the RMP (Map 22).
- The parcel is closed to motorized use year-round (Map 3 and Map 22).
- The parcel is within a right-of-way (ROW) avoidance area. This indicates that other routes should be considered and prioritized over routes proposed in avoidance areas.

- The parcel is managed as a Primary Wildlife Emphasis area (Map 4). This means that wildlife is one of the most important management considerations (RMP, p. 180). The parcel is within big game winter range, this means construction activities would be restricted from December 1 through May 1.
- The parcel is classified in the Visual Resource Management (VRM) category Class 2. The BLM is required to retain the existing character of landscapes and manage landscapes for low levels of change to the characteristic landscape. In these areas, management activities may be seen but should not attract the attention of the casual observer. Changes should repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape (RMP, pp. 98-99).
- The route parallels Dry Creek which is a tributary to the Crooked River. This route is not within the Wild and Scenic River Corridor.
- The North Stearns allotment overlays the parcel. This parcel is part of the western boundary of the allotment. Any road exiting the parcel on the west side would need to be constructed to accommodate a secure crossing (i.e. cattle guard). Interior pasture crossing may also be required.
- The parcel is classified as Zone 1, meaning the BLM would not dispose of the parcel (Map 6).
- BLM recommendation – this parcel has multiple difficulties. The primary difficulty is the parcels classification as closed to motorized use. An RMP amendment would be required to open the parcel to motorized use. RMP amendments require the publication of a Federal Register Notice which is a lengthy and expensive process. The route is within a ROW avoidance area, the justification for the selection of this route would need to be robust and likely reviewed by a BLM solicitor. The Primary Wildlife Emphasis and VRM 2 designation would require detailed analysis and if through the analysis process significant impacts were determined, there is a chance this proposal could require the preparation of an environmental impact statement.

E04 – T. 16 S., R. 17 E., Secs 11, 15, 16, and 17

- This route traverses through four sections of BLM administered lands. The route passes through a very small portion of section 17 where it leaves Juniper Canyon Road and mostly follows Simpson Road through section 16, passes through the small western edge of section 15 and passes through section 11. The route does not follow any existing roads in section 11.
- Section 16 is limited to designated roads year-round. Section 11, 15, and 17 are limited to designated road seasonally (Map 22). This means road use in sections 11, 15, and 17 should not occur from December 1 to May 1 for the protection of deer/elk winter range. The route mostly follows a RMP designated route in sections 15, 16, and 17. It does not follow a RMP designated route in section 11.
- Section 17 is a ROW avoidance area. Sections 11, 15, and 17 are not within a ROW avoidance or exclusion area.
- The parcels are within a Secondary Wildlife Emphasis area (Map 4). Secondary wildlife emphasis areas are intended to support wildlife and maintain a moderate amount of use (RMP, p. 182). The parcel is within big game winter range, this means construction activities would be restricted from December 1 through May 1.

- Section 17 is classified as VRM 3. Sections 11, 15, and 17 are classified as VRM 4. Management direction for each is on pages 98-99 of the RMP.
- The route crosses Antelope Creek in section 16 and O'Neil Creek on private property.
- The parcel is classified as Zone 2, meaning the BLM has classified the parcel for retention, unless certain circumstances are met.
- BLM recommendation – this parcel has fewer difficulties than W02A. This route largely follows an RMP designated road, which reduces the impact from new road constriction. Because some of the sections of land area classified as limited to designated roads seasonally, the BLM may need to amend the RMP to remove the seasonal road use designation. RMP amendments require the publication of a Federal Register Notice which is a lengthy and expensive process. A portion of the route is within a ROW avoidance area, the justification for the selection of this route would need to be robust and likely reviewed by a BLM solicitor but because only a portion of the parcel is in an avoidance area, the justification would be somewhat easier.

E03 – T. 16 S., R. 17 E., Secs 01, 02, 07, 08, and 09
A portion of route E03 is within the Prineville Reservoir SRMA (sections 07, 08, and 09) and the remaining portion is not within a SRMA as described below in E02 (RMP Map 1).

- This route traverses through five sections of BLM administered lands. The route passes through the most norther portion of sections 07, 08, and 09, through the center of section 02, and through the western edge of section 01. This route crosses the greatest quantity of BLM-administered lands.
- The parcels are limited to designated roads year-round (Maps 21 and 22). E03 does not follow any routes designated by the RMP. It appears extensive construction would be required. Page 137 of the RMP states, "All local roads that are not needed to meet specific management objectives are available for designation as system roads or for closure following site specific analyses." This means that the BLM may be able to authorize the road and once authorized, the road would be considered a "designated route."
- This route through sections 01, 02, 07, and a portion of 08 are not within ROW avoidance or exclusion areas. A portion of section 08 and all of section 09 are within ROW avoidance areas.
- The parcel is within a Secondary Wildlife Emphasis Area (Map 4). The parcel is within big game winter range, this means construction activities would be restricted from December 1 through May 1.
- This route through sections 01, 02, 07, and a portion of 08 are classified as VRM 4. A portion of section 08 and all of section 09 are classified as VRM 3. Management direction for each is on pages 98-99 of the RMP.
- The route crosses O'Neil Creek on private property.
- The route is overlayed by Dry Creek and Hudson Allotments. Allotment and pasture boundaries would need to be constructed to accommodate secure crossing (i.e. cattle guard).
- The parcel is classified as Zone 3, meaning the BLM has classified the parcels as available for disposal (Map 6).

- BLM recommendation – this route would not require an RMP amendment. Although this route requires the greatest extent of road construction, procedurally it has less difficulties.

E02 – T. 15 S., R. 17 E., Sec 28
Route E02 is not within a SRMA (RMP Map 1). These BLM-administered lands are not included in a SRMA, "because of the scattered nature of the public land parcels" (RMP, p 103). Those parcels not included in the SRMA are addressed as part of the Prineville geographic area (RMP, pp. 129-130).

- This route traverses near the center of one 640-acre section of BLM-administered land northwest of the Prineville Reservoir. The 640 acres parcel is the only portion of BLM administered land this route would affect.
- Within this parcel, use is limited to designated roads only year-round (RMP Map 3 and 21). E02 appears to somewhat follow the RMP designated route through the parcel, although new road construction and improvements appear to be necessary. Page 137 of the RMP states, "All local roads that are not needed to meet specific management objectives are available for designation as system roads or for closure following site specific analyses." This means that the BLM may be able to authorize the road and once authorized, the road would be considered a "designated route."
- The parcel is not within a ROW avoidance or exclusion area.
- The parcel is within a Secondary Wildlife Emphasis Area (Map 4). The parcel is within big game winter range, this means construction activities would be restricted from December 1 through May 1.
- The parcel is classified as VRM 4. VRM Class 4 areas allow major modifications to the existing character of landscapes and moderate levels of change to the characteristic landscape. Management activities may dominate the view and be the major focus of viewer attention. Every attempt will be made to minimize the effect of management actions through careful location, minimal disturbance, and repeating the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape (RMP, p. 99).
- This route does not appear to cross hydrologic resources of concern located on BLM-administered lands. The route crosses the Crooked River on private property downstream of the reservoir.
- The Dry Creek grazing allotment overlays the parcels. This parcel is part of the easter boundary of the allotment. Any road exiting the parcel on the east side would need to be constructed to accommodate a secure crossing (i.e. cattle guard). Interior pasture crossing may also be required.
- BLM recommendation – this route would not require an RMP amendment. Although this route requires new road construction and doesn't follow an RMP designated route, procedurally it has less difficulties.

Information Memorandum

U.S. Department of the Interior
Bureau of Land Management
Prineville District
Deschutes Field Office
3050 NE Third Street
Prineville, OR 97754

DATE: February 12, 2025

FROM: Lisa M. Clark, Deschutes Field Office Manager

TO: Erin David, Senior Planner Parametrix

SUBJECT: Juniper Canyon Alternative Alignment Route Review-Public Comment Alignment Additions

BACKGOUND

On October 21, 2024, The Bureau of Land Management (BLM) provided a review of four Juniper Canyon alternative exits: W02A, E02, E03, and E04 that run through lands managed by BLM Prineville District, Deschutes Field Office. This Memorandum provides a review of two additional routes developed through public feedback from the counties last engagement milestone: W08 and E05-B. The Upper Deschutes Record of Decision and Resource Management Plan (RMP) is the guiding document. All pages and maps cited are from the RMP. Link: https://eplanning.blm.gov/eplanning-ui/project/36346/510

The legal use of the routes reviewed in this document would require applying for a right-of-way (https://www.blm.gov/obtaining-right-way) and compliance with the National Environmental Policy Act (NEPA). Any route selected would require the preparation of an environmental assessment. Some routes would require one or more RMP amendments. BLM recommendations on the difficulty of the NEPA process are documented below.

RESPONSE

Routes W08 and E05-B are within the Prineville Reservoir Special Recreation Management Area (SRMA) (RMP Map 1). They are also within parcels managed as a Primary Wildlife Emphasis area (Map 4). This means that wildlife is one of the most important management considerations (RMP, p. 180). The parcels are also within big game winter range, which means construction activities would be restricted from December 1 through May 1. All BLM-managed parcels for these two routes are classified as Zone 1, meaning the BLM could not dispose of the parcel (Map 6) without amending the RMP.

W08 – T. 16 S., R. 16 E., Secs 25, 26 and 35

- This route traverses through a small portion of the NE1/4NE1/4 of Sec 26 and entirely through both Sections 25 and 35 which are full section parcels of BLM-administered lands northwest of the Prineville Reservoir.
- The route in sections 25 and 26 is along a well-defined two track route that is a seasonally closed from December 1st to April 30th as defined by the RMP (Maps 3 and 22).
- The route in section 35 would be a new route in an area that is closed year-round to motorized travel as defined by the RMP (Map 3 and Map 22).

- Sections 25 and 26 are classified in the Visual Resource Management (VRM) category Class 4. Section 35 has portions classified as both VRM Class 2 and 4. Class 4 allows actions that may modify the character of the landscape, and management activities may dominate the view and be the major focus of attention. Class 2 requires the BLM to retain the existing character of landscapes and manage landscapes for low levels of change to the characteristic landscape. In these areas, management activities may be seen but should not attract the attention of the casual observer. Changes should repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape (Map 10, RMP, p. PRMP-67).
- These sections include areas of Wildland Urban Interface Zones for fuels management treatments designed to reduce the potential for extreme wildland fire potential (RMP, p 89).
- These sections include Verified High Priority Restoration for the Lower Crooked River Subbasin (Map 9, RMP p. 91). The priority for restoration would be to improve infiltration and reduce overland flow.
- The Davis allotment overlays the parcel. Interior pasture crossing may be required.
- BLM recommendation – this parcel has multiple difficulties. The primary difficulty is the parcels classification as closed to motorized use when the route enters Section 35 and seasonal closures in Sections 25 and 26. An RMP amendment would be required to open the parcel to motorized use. RMP amendments require the publication of a Federal Register Notice, which is a lengthy and expensive process. The Primary Wildlife Emphasis, Verified High Priority Restoration for the Lower Crooked River Subbasin and VRM 2 designation would require detailed analysis, and if through the analysis process significant impacts were determined, there is a chance this proposal could require the preparation of an environmental impact statement.

W08 – T. 17 S., R. 16 E., Secs 2 and 3

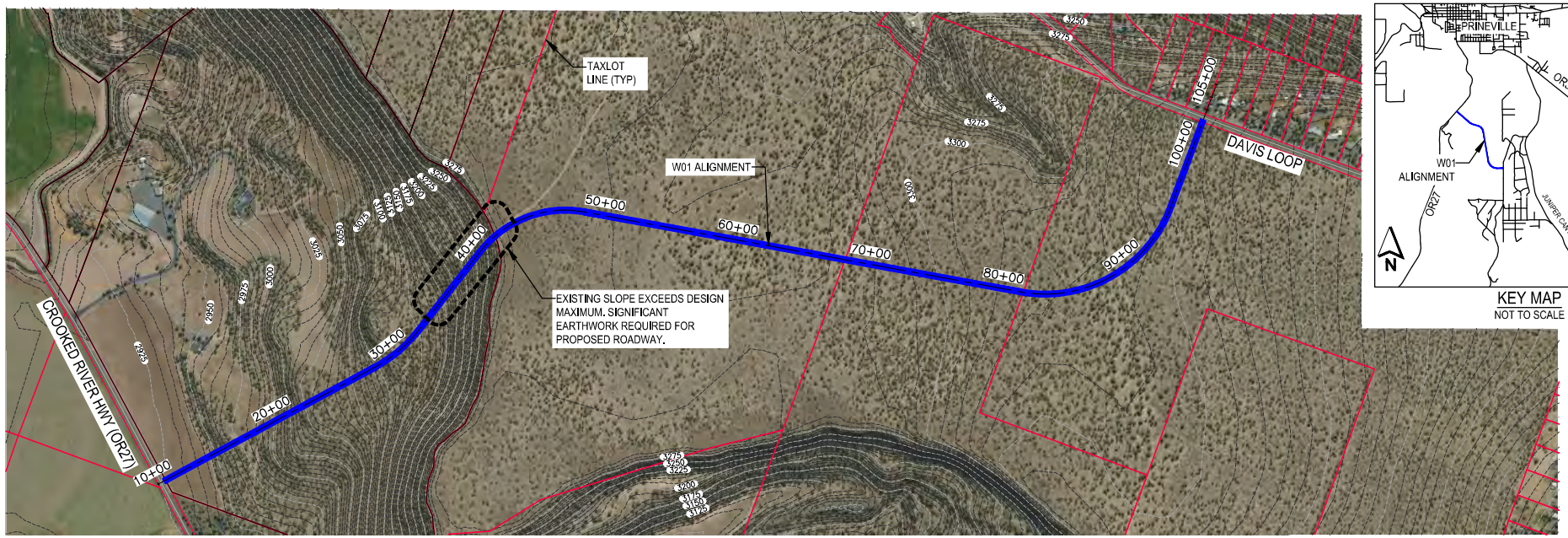
- This route traverses through two sections of BLM-administered lands. The route passes through a small portion of both sections on the far westside of section 2 and far eastside of section 3.
- The route in sections 2 and 3 would be a new route in an area that is closed year-round to motorized travel as defined by the RMP (Map 3 and Map 22).
- The route crosses mostly in the Visual Resource Management (VRM) category Class 4, there is a small section in the SW1/4SW1/4 of Section 2 in VRM Class 2. Class 4 allows actions that may modify the character of the landscape, management activities may dominate the view and be the major focus of attention. Class 2 requires the BLM to retain the existing character of landscapes and manage landscapes for low levels of change to the characteristic landscape. In these areas, management activities may be seen but should not attract the attention of the casual observer. Changes should repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape (Map 10, RMP, p. PRMP-67).
- These sections include Verified High Priority Restoration for the Lower Crooked River Subbasin (Map 9, RMP p. 91). The priority for restoration would be to improve infiltration and reduce overland flow.
- The route is overlayed by the Davis Allotment including the Allotment boundary. The Allotment boundaries would need to be constructed to accommodate secure crossing (i.e. cattle guard).
- BLM recommendation – this parcel has multiple difficulties. The primary difficulty is the parcels classification as closed to motorized use. An RMP amendment would be required to open the parcel to motorized use. RMP amendments require the publication of a Federal Register Notice, which is a lengthy and expensive process. The Primary Wildlife Emphasis, Verified High Priority Restoration for the Lower Crooked River Subbasin and VRM 2 designation (very small piece) would require detailed analysis and if through the analysis process significant impacts were determined, there is a chance this proposal could require the preparation of an environmental impact statement.

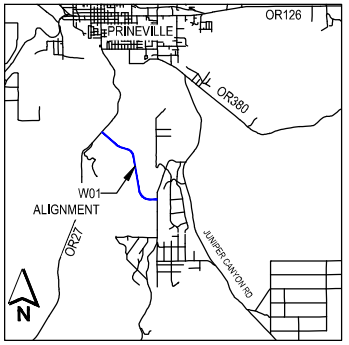
E05B – T. 16 S., R. 17 E., Secs 28, 29 and 33

- This route traverses through three sections that contains BLM-administered lands. This route passes through smaller sections of BLM-administered lands.
- This would be a new route in parcels designated as closed seasonally to motored travel from December 1st to April 30th as defined by the RMP (Maps 3 and 22).
- The route crosses mostly in the Visual Resource Management (VRM) category Class 4; however, there is a small section in the NE1/4SW1/4 of Section 28 in VRM Class 2. Class 4 allows actions that may modify the character of the landscape, management activities may dominate the view and be the major focus of attention. Class 2 requires the BLM to retain the existing character of landscapes and manage landscapes for low levels of change to the characteristic landscape. In these areas, management activities may be seen but should not attract the attention of the casual observer. Changes should repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape (Map 10, RMP, p. PRMP-67).
- These sections include areas of Wildland Urban Interface Zones for fuels management treatments designed to reduce the potential for extreme wildland fire potential (RMP, p 89).
- The route is overlayed by the Carey Allotment in the southwest corner and would need to be constructed to accommodate secure crossing (i.e. cattle guard).
- BLM recommendation – this parcel has multiple difficulties. The primary difficulty is the parcels classification as seasonally closed to motorized use. An RMP amendment would be required to open the parcel to motorized use year-round. RMP amendments require the publication of a Federal Register Notice, which is a lengthy and expensive process. The Primary Wildlife Emphasis and VRM 2 (small section) designation would require detailed analysis and if through the analysis process significant impacts were determined, there is a chance this proposal could require the preparation of an environmental impact statement.

Attachment D

Recommended Route Location and Profile

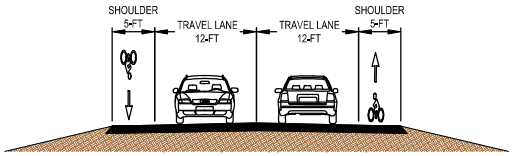




KEY MAP
NOT TO SCALE

JUNIPER CANYON ALTERNATIVES - W01

FEBRUARY 2024

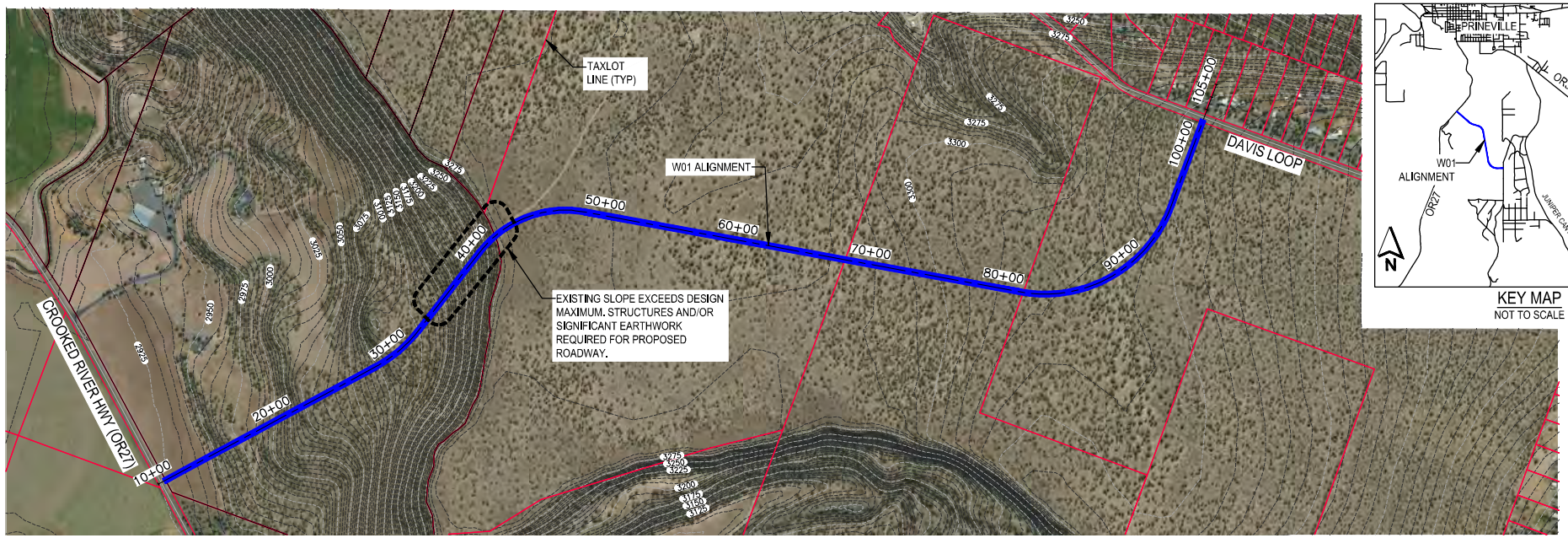


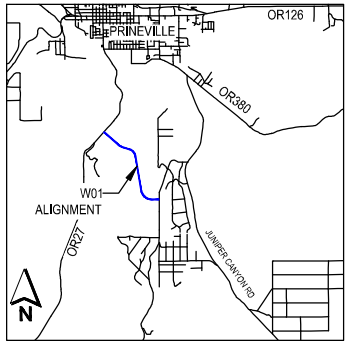
CROSS SECTION

DRAFT CONCEPT
LAYOUT SUBJECT TO REVISION

Parametrix
360 NW Pacific Park Lane, Suite 110 • Bend, OR 97701
Ph: 541.508.7710

DATE: February 1, 2025 FILE: JC_ALT W01

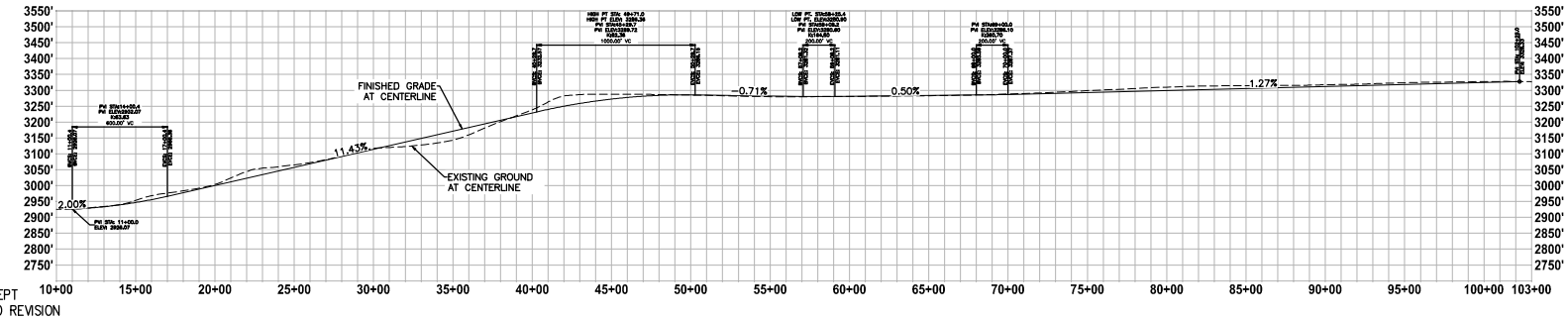




KEY MAP
NOT TO SCALE

JUNIPER CANYON ALTERNATIVES - W01

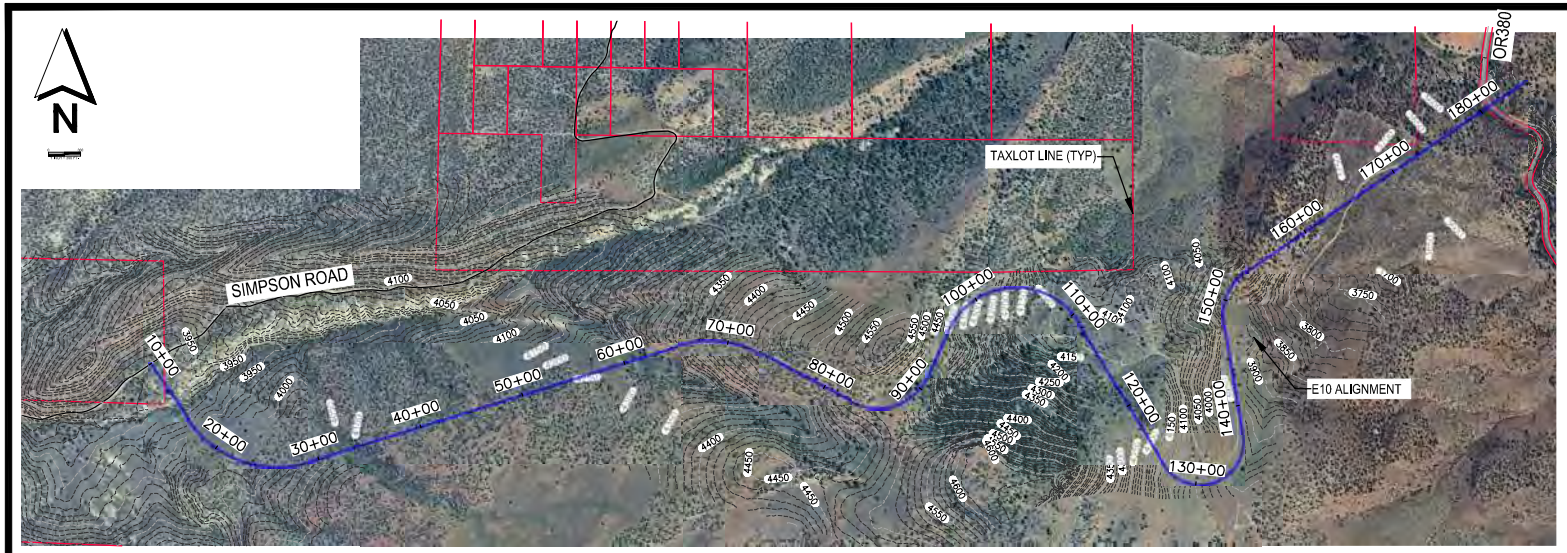
FEBRUARY 2024

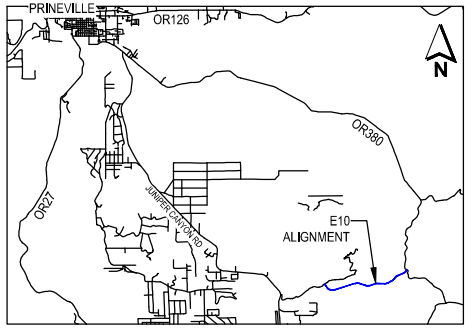


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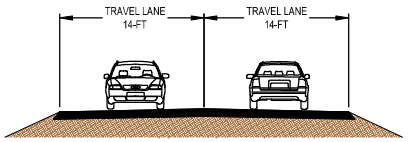
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DATE: February 1, 2025 FILE: JC_ALT W01





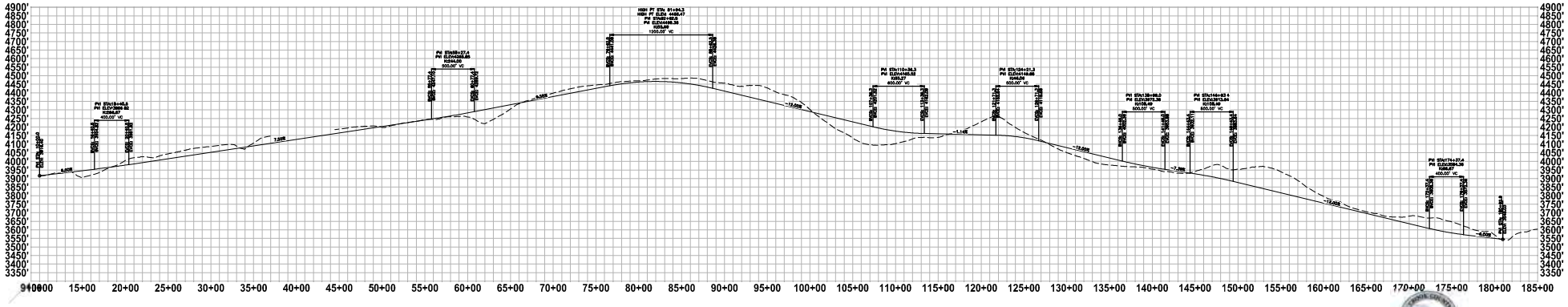
KEY MAP
NOT TO SCALE



CROSS SECTION

JUNIPER CANYON ALTERNATIVES - E10

SEPTEMBER 2025



DRAFT CONCEPT
LAYOUT SUBJECT TO REVISION

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DATE: September 3, 2025 FILE: JC_ALT NEW_SWITCHBACK