Oregon
Theodore R. Kulongoski, Governor

Department of Land Conservation and Development
635 Capitol Street, Suite 150
Salem, OR 97301-2540
(503) 373-0050
Fax (503) 378-5518
www.lcd.state.or.us

NOTICE OF ADOPTED AMENDMENT

07/18/2013

TO: Subscribers to Notice of Adopted Plan or Land Use Regulation Amendments

FROM: Plan Amendment Program Specialist

SUBJECT: City of Eugene Plan Amendment
DLCD File Number 010-12

The Department of Land Conservation and Development (DLCD) received the attached notice of adoption. Due to the size of amended material submitted, a complete copy has not been attached. A Copy of the adopted plan amendment is available for review at the DLCD office in Salem and the local government office.

Appeal Procedures*

DLCD ACKNOWLEDGMENT or DEADLINE TO APPEAL: Friday, August 02, 2013

This amendment was submitted to DLCD for review prior to adoption pursuant to ORS 197.830(2)(b) only persons who participated in the local government proceedings leading to adoption of the amendment are eligible to appeal this decision to the Land Use Board of Appeals (LUBA).

If you wish to appeal, you must file a notice of intent to appeal with the Land Use Board of Appeals (LUBA) no later than 21 days from the date the decision was mailed to you by the local government. If you have questions, check with the local government to determine the appeal deadline. Copies of the notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR Chapter 661, Division 10). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

*NOTE: The Acknowledgment or Appeal Deadline is based upon the date the decision was mailed by local government. A decision may have been mailed to you on a different date than it was mailed to DLCD. As a result, your appeal deadline may be earlier than the above date specified. NO LUBA Notification to the jurisdiction of an appeal by the deadline, this Plan Amendment is acknowledged.

Cc: Gabriel Flock, City of Eugene
Gordon Howard, DLCD Urban Planning Specialist
Ed Moore, DLCD Regional Representative

<paa> YA

FORM 2 **DLCD**

Notice of Adoption

This Form 2 must be mailed to DLCD within **20-Working Days after the Final Ordinance is signed** by the public Official Designated by the jurisdiction and all other requirements of ORS 197.615 and OAR 660-018-000

☐ In person ☐ electronic ☐ mailed

DATE STAMP

DEPT OF

JUL 15 2013

LAND CONSERVATION AND DEVELOPMENT

For Office Use Only

Jurisdiction: **City of Eugene**

Local file number: **Not enough room to list**

Date of Adoption: **7/8/2013**

Date Mailed: **7/12/2013**

Was a Notice of Proposed Amendment (Form 1) mailed to DLCD? ☒ Yes ☐ No Date: 12/21/12

☐ Comprehensive Plan Text Amendment

☒ Comprehensive Plan Map Amendment

☒ Land Use Regulation Amendment

☒ Zoning Map Amendment

☒ New Land Use Regulation

☒ Other: **Refinement Plan**

Summarize the adopted amendment. Do not use technical terms. Do not write "See Attached".

Implementation of the land use components of the "EWEB Riverfront Master Plan", for redevelopment of 27 acres of downtown riverfront property, including: amending the Metro Plan Diagram to redesignate the property Mixed Use; adoption of a new Specific Area Plan as a refinement plan; amending existing refinement plans to remove obsolete sections; establishing a new Special Area Zone; amending the Eugene Code for consistency; and rezoning the property to the new zone designation.

Does the Adoption differ from proposal? No, no explaination is necessary

Plan Map Changed from: **HI/ND, MU, & POS/ND** to: **MU/ND**

Zone Map Changed from: **I-2/TD, I-3/TD, & PL/TD/WR** to: **S-DR & S-DR/WR**

Location: **500 E. 4th Ave., Eugene, OR 97401** Acres Involved: **27**

Specify Density: Previous: **0** New: **250-400 units**

Applicable statewide planning goals:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
☒	☒	☐	☐	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☐	☐	☐	☐

Was an Exception Adopted? ☐ YES ☒ NO

Did DLCD receive a Notice of Proposed Amendment...

35-days prior to first evidentiary hearing? ☒ **Yes** ☐ **No**

If no, do the statewide planning goals apply? ☐ **Yes** ☐ **No**

DLCD File No. 010-12 (19641) [17527]

If no, did Emergency Circumstances require immediate adoption? ☐ **Yes** ☐ **No**

DLCD file No. _____

Please list all affected State or Federal Agencies, Local Governments or Special Districts:

Local Contact: **Gabriel Flock, Senior Planner** Phone: **(541) 682-5697** Extension: **5697**

Address: **99 West 10th Avenue** Fax Number: **541-682-5572**

City: **Eugene, OR** Zip: **97401** E-mail Address: **gabriel.flock@ci.eugene.or.us**

ADOPTION SUBMITTAL REQUIREMENTS

This Form 2 must be received by DLCD no later than 20 working days after the ordinance has been signed by the public official designated by the jurisdiction to sign the approved ordinance(s)

per ORS 197.615 and OAR Chapter 660, Division 18

1. This Form 2 must be submitted by local jurisdictions only (not by applicant).
2. When submitting the adopted amendment, please print a completed copy of Form 2 on light **green paper if available**.
3. Send this Form 2 and **one complete paper copy** (documents and maps) of the adopted amendment to the address below.
4. Submittal of this Notice of Adoption must include the final signed ordinance(s), all supporting finding(s), exhibit(s) and any other supplementary information (ORS 197.615).
5. Deadline to appeals to LUBA is calculated **twenty-one (21) days** from the receipt (postmark date) by DLCD of the adoption (ORS 197.830 to 197.845).
6. In addition to sending the Form 2 - Notice of Adoption to DLCD, please also remember to notify persons who participated in the local hearing and requested notice of the final decision. (ORS 197.615).
7. Submit **one complete paper copy** via United States Postal Service, Common Carrier or Hand Carried to the DLCD Salem Office and stamped with the incoming date stamp.
8. Please mail the adopted amendment packet to:

ATTENTION: PLAN AMENDMENT SPECIALIST
DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT
635 CAPITOL STREET NE, SUITE 150
SALEM, OREGON 97301-2540

9. **Need More Copies?** Please print forms on **8½ -1/2x11 green paper only if available**. If you have any questions or would like assistance, please contact your DLCD regional representative or contact the DLCD Salem Office at (503) 373-0050 x238 or e-mail **plan.amendments@state.or.us**.

COUNCIL ORDINANCE NO. 20513

COUNCIL BILL 5095

AN ORDINANCE CONCERNING THE EWEB DOWNTOWN RIVERFRONT PROPERTY

ADOPTED: July 8, 2013

SIGNED: July 9, 2013

PASSED: 6:2

REJECTED:

OPPOSED: Taylor, Brown

ABSENT:

EFFECTIVE; August 9, 2013

ORDINANCE NO. 20513

AN ORDINANCE CONCERNING THE EWEB DOWNTOWN RIVERFRONT PROPERTY.

THE CITY OF EUGENE DOES ORDAIN AS FOLLOWS:

Section 1. As a result of this citizen initiated plan amendment process, the Eugene-Springfield Metropolitan Area General Plan (Metro Plan) Land Use Diagram is amended to remove the current Metro Plan designations from the properties identified on Exhibit 1 "EWEB Downtown Riverfront Metro Plan Amendment" attached to this Ordinance, and to replace those designations as reflected on Exhibit 1.

Section 2. The EWEB Downtown Riverfront Specific Area Plan, a copy of which is attached to this Ordinance as Exhibit 2, is adopted as a refinement of the Eugene-Springfield Metropolitan Area General Plan. However, only those portions of the EWEB Downtown Riverfront Specific Area Plan that are specifically referenced in EC 9.3155(4), 9.3155(16), 9.3185(2)(b), 9.3185(2)(i), 9.3190(2)(d) and EC 9.8030(16)(a) are adopted as land use regulations, to be applied only as indicated in those sections of the Eugene Code. All other portions of the EWEB Downtown Riverfront Specific Area Plan are adopted only to serve as findings in support of this Ordinance.

Section 3. The "Policies" and "Projects" sections on page 29 in the "Downtown Riverfront" section of Eugene Downtown Plan are amended as follows:

Policies

1. Incorporate the Willamette River as an integral element to downtown planning and development.

2. Facilitate dense development in the courthouse area and other sites between the core of downtown and the river.

Projects

Examples of possible projects that address the implementation strategies:

- Assess and provide mitigation for stormwater issues related to the potential development of riverfront properties.
- Introduce pedestrian-related improvements along all paths leading to the river.
- Develop an adaptive use concept for EWEB's Steam Plant.
- Daylight the Millrace to connect downtown to the river and capitalize on this historic waterway.

Section 4. The Riverfront Park Study is amended by deleting subsection E in the "Policies" section on pages 11 and 12 and re-lettering subsection F to subsection E.

E. AGRIPAC

Section 5. The Eugene Zoning Map is amended to remove the current zones from properties identified on Exhibit 3 attached to this Ordinance and to replace those zones as reflected on Exhibit 3.

Section 6. The Eugene Overlay Zone Map is amended to remove the /TD Transit Oriented Development Overlay Zone from properties identified on Exhibit 3 attached to this Ordinance as reflected on Exhibit 3. All other currently applicable overlay zones shall remain in place, as reflected on Exhibit 3.

Section 7. Section 9.0500 of the Eugene Code, 1971, is amended by adding the following definitions in alphabetical order to provide as follows:

9.0500 **Definitions**. As used in this land use code, unless the context requires otherwise, the following words and phrases mean:

Urban Plaza. The land between a building and property line or street paved with a hard surface for use by pedestrians containing a minimum of two pedestrian amenities such as seating areas, covered playground area, kiosk area, water feature, interpretive display, public art, or other similar focal feature or amenity.

Visible Light Transmittance (VLT). The amount of visible light that passes through the glazing material of a window, expressed as a percentage.

Section 8. Section 9.1030 of the Eugene Code, 1971, is amended by adding the following entry in alphabetical order to the Table 9.1030 Special Area Zone listing:

9.1030 **Establishment and List of Zones.** The zones listed in Table 9.1030 Zones are established as follows:

Table 9.1030 Zones		
Broad Zone Category	**Zone**	
Special	S-DR	Downtown Riverfront Special Area Zone

Section 9. The Caption, Sections 9.3130, 9.3135, 9.3140, 9.3145, 9.3146, 9.3147, 9.3148, 9.3150, 9.3155, 9.3160, 9.3165, 9.3170, 9.3175, 9.3180, 9.3181, 9.3182, 9.3185, and 9.3190, and the figures embedded within those Sections are added to the Eugene Code, 1971, as set forth in Exhibit 4 "S-DR Downtown Riverfront Special Area Zone" attached to this Ordinance.

Section 10. EC "Map EC 9.4510 Transit Oriented Development Overlay Zone" is amended to remove the subject site from the boundaries of the /TD overlay zone as shown on Exhibit 5 attached to this Ordinance.

Section 11. EC "Map 9.6410(4)(a) Downtown and West University Automobile Parking Exempt Areas" is amended to remove the subject site from the boundaries of the Downtown Automobile Parking Exempt Areas as shown on Exhibit 6 attached to this Ordinance.

Section 12. Subsection (1) of Section 9.6670 of the Eugene Code, 1971, is amended to provide:

9.6670 **Central Commercial Sign Standards.** The central commercial sign standards are hereby created and applied to all property within the central commercial zones as set forth below. Signs are restricted in recognition of the high density usage of these areas, where pedestrian traffic is heavy and vehicular traffic is commonly limited.

(1) **Corresponding Zones.** The provisions of this section apply to all property not regulated by the highway commercial sign standards which is zoned C-3, to property within the S-DR Downtown Riverfront Special Area Zone, to property within the S-F 5th Street Special Zone, and to those portions of the S-RP Riverfront Park Special Zone which are not within 200 feet of the Franklin Boulevard center line.

Section 13. Subsection (1) of Section 9.7025 of the Eugene Code, 1971, is amended to provide:

9.7025 **Performance Agreements.**

(1) **Applicability.** The city shall require execution of a performance agreement by the applicant for all of the following types of applications:

(a) Conditional use permit and any modifications.
(b) Design review.
(c) Historic property alteration and any modifications.
(d) Planned unit development, final plan and any modifications.
(e) Site review and any modifications.
(f) Subdivisions final plat and any modifications.
(g) Standards review and any modifications.

Section 14. Section 9.7030 of the Eugene Code, 1971, is amended to provide:

9.7030 **Recordation of Certain City Decisions.** After a decision becomes final at the local level, the city shall record at Lane County Deeds and Records a notice of a decision concerning property that is the subject of the following types of applications:

(1) Conditional use permit and any modifications.
(2) Design Review.
(3) Historic landmark, designation.
(4) Historic property, alteration.
(5) Planned unit development, final plan and any modifications.
(6) Property line adjustment.
(7) Site review and any modifications.
(8) Variances.
(9) Willamette Greenway permit and any modifications.
(10) Zone change.
(11) Vacations.

Section 15. Subsection (4) of Section 9.7340 of the Eugene Code, 1971, is amended to provide:

9.7340 **Expiration.**

(4) Unless the decision specifies otherwise, a Willamette Greenway permit approval shall expire 18 months after the effective date of approval unless actual construction or alteration has begun under a required permit, or in the case of a permit not involving construction or alteration, actual commencement of the authorized activity has begun. However, the applicant may submit a modification application at any time before the 18-month period has expired, requesting an extension of the approval period. The applicant may request more than one extension. Under no circumstances, however, can the total combined extension periods exceed 36 months from the original expiration date. Within S-DR, upon approval of a Willamette Greenway Permit concurrently with Type V code amendments and other plan amendments, plan adoption, or zone change; the Willamette Greenway permit shall remain in effect so long as the S-DR zone remains in effect.

Section 16. Table 9.8010 List of Adopted Plans in Section 9.8010 of the Eugene Code, 1971, is amended to provide:

Table 9.8010 List of Adopted Plans	
Bethel-Danebo Refinement Plan (Phase II)	River Road-Santa Clara Urban Facilities Plan
Bethel-Danebo Refinement Plan	Riverfront Park Study
Comprehensive Stormwater Management Plan	South Hills Study
Downtown Riverfront Specific Area Plan	South Willamette Subarea Study
Eugene Commercial Lands Study	TransPlan (Metro Area Transportation Plan)
Eugene Downtown Plan	Walnut Station Specific Area Plan
Eugene-Springfield Metropolitan Area General Plan (Metro Plan)	West University Refinement Plan
Fairmount/U of O Special Area Study	Westside Neighborhood Plan
Jefferson/Far West Refinement Plan	Whiteaker Plan
Laurel Hill Neighborhood Plan	Willakenzie Area Plan
19th and Agate Special Area Study	Willow Creek Special Area Study
Resolution No. 3862 Adopting the West 11th Commercial Land Use Policy and Refining the Eugene-Springfield Metropolitan Area General Plan (Adopted June 13, 1984)	Resolution No. 3885 Establishing Areas for the Application of C-4 Commercial-Industrial District Zoning, and Amending Resolution No. 3862 (Adopted on November 13, 1984)

Section 17. EC "Map 9.8010 Adopted Plans" and its legend are amended to include the Downtown Riverfront Specific Area Plan as shown on Exhibit 7 attached to this Ordinance.

Section 18. Subsection (16)(a) of Section 9.8030 of the Eugene Code, 1971, is amended to provide:

9.8030 Adjustment Review - Approval Criteria. The planning director shall approve, conditionally approve, or deny an adjustment review application. Approval or conditional approval shall be based on compliance with the following applicable criteria.

(16) Downtown Plan Area. Where this land use code provides that a development standard applicable within the Downtown Plan Area as shown on Map 9.2161(6) Downtown Plan Map may be adjusted, approval of the request shall be given if the applicant demonstrates consistency with all of the following:

(a) The requested adjustment will allow the project to achieve an equivalent or higher quality design than would result from strict adherence to the standards through:

1. A building orientation, massing, articulation and façade that contribute positively to the surrounding urban environment; and
2. An overall site and building design that creates a safe and attractive pedestrian environment. Design elements for this purpose may include special architectural design features, high quality materials, outdoor seating, pedestrian-scaled lighting, prominent entries facing the street, multiple openings or windows, and a significant use of clear, untinted glass.
3. Within the S-DR zone, alternatives proposed pursuant to EC

9.3150(3), EC 9.3180(3), EC 9.3181(3), and EC 9.3182(3) shall demonstrate compliance with "urban design" plan policies in the Downtown Riverfront Specific Area Plan; alternatives proposed pursuant to EC 9.3160(7) and EC 9.3165(1) shall demonstrate compliance with "infrastructure" plan policies in the Downtown Riverfront Specific Area Plan; and, uses proposed pursuant to EC 9.3147(7) and alternatives proposed pursuant to EC 9.3185(4) shall demonstrate compliance with "open space" plan policies in the Downtown Riverfront Specific Area Plan.

Section 19. Section 9.8111 of the Eugene Code, 1971, is amended to provide:

9.8111 **Design Review - Applicability.** Applicants within the S-WS Walnut Station Special Area Zone or S-DR Downtown Riverfront Special Area Zone may seek approval through the Design Review process per EC 9.3980 or EC 9.3190. These applications for review shall be considered under a Type II process, or concurrently with a related Type III application process. No development permit shall be issued by the city prior to completion of the design review.

Section 20. Subsection (1) of Section 9.8215 of the Eugene Code, 1971, is amended to provide:

9.8215 **Partition, Tentative Plan Approval Criteria- General.** The planning director shall approve, approve with conditions, or deny a partition, with findings and conclusions. Approval, or approval with conditions, shall be based on compliance with the following criteria:

(1) The proposed partition complies with all of the following, unless specifically exempt from compliance through a code provision applicable to a special area zone or overlay zone:

(a) Lot standards of EC 9.2000 through 9.3915 regarding applicable parcel dimensions and density requirements. Within the /WR Water Resources Conservation Overlay Zone or the /WQ Water Quality Overlay Zone, no new lot may be created if more than 33% of the lot, as created, would be occupied by either:

1. The combined area of the /WR conservation setback and any portion of the Goal 5 Water Resource Site that extends landward beyond the conservation setback; or
2. The /WQ Management Area.

(b) EC 9.6800 through EC 9.6875 Standards for Streets, Alleys, and Other Public Ways.

(c) EC 9.6500 through EC 9.6505 Public Improvement Standards.

(d) EC 9.6706 Development in Flood Plains through EC 9.6709 Special Flood Hazard Areas - Standards.

(e) EC 9.6710 Geological and Geotechnical Analysis.

(f) EC 9.6735 Public Access Required.

(g) EC 9.6750 Special Setback Standards.

(h) EC 9.6775 Underground Utilities.
(i) EC 9.6780 Vision Clearance Area.
(j) EC 9.6791 through 9.6797 regarding stormwater destination, pollution reduction, flow control for headwaters area, oil control, source control, easements, and operation and maintenance.
(k) All other applicable development standards for features explicitly included in the application.
(l) The applicable adopted plan policies beginning at EC 9.9500.

An approved adjustment to a standard pursuant to the provisions beginning at EC 9.8015 of this land use code constitutes compliance with the standard.

Section 21. The introductory paragraph of Section 9.8240 of the Eugene Code, 1971, is amended to provide:

9.8240 Partition, Final Plat Approval Criteria. The planning director shall approve or deny the partition's final plat. Approval shall be based on compliance with the following criteria, unless specifically exempt from compliance through a code provision applicable to a special area zone or overlay zone:

Section 22. Subsection (1) of Section 9.8515 of the Eugene Code, 1971, is amended to provide:

9.8515 Subdivision, Tentative Plan Approval Criteria - General. The planning director shall approve, approve with conditions, or deny a proposed subdivision. Approval, or approval with conditions shall be based on compliance with the following criteria:

(1) The proposed subdivision complies with the following, unless specifically exempt from compliance through a code provision applicable to a special area zone or overlay zone:
(a) EC 9.2000 through 9.3915 regarding lot dimensions and density requirements for the subject zone. Within the /WR Water Resources Conservation Overlay Zone or /WQ Water Quality Overlay Zone, no new lot may be created if more than 33% of the lot, as created, would be occupied by either:
1. The combined area of the /WR conservation setback and any portion of the Goal 5 Water Resource Site that extends landward beyond the conservation setback; or
2. The /WQ Management Area;
(b) EC 9.6800 through EC 9.6875 Standards for Streets, Alleys, and Other Public Ways; and
(c) EC 9.6500 through EC 9.6505 Public Improvement Standards.

Section 23. Subsection (3) of Section 9.8520 of the Eugene Code, 1971, is amended to provide:

9.8520 Subdivision, Tentative Plan Approval Criteria- Needed Housing. The planning director shall approve, conditionally approve, or deny the subdivision application.

Unless the applicant elects to use the general criteria contained in EC 9.8515 Subdivision, Tentative Plan Approval Criteria- General, where the applicant proposes needed housing, as defined by the State statutes, the planning director shall approve or approve with conditions a subdivision based on compliance with the following criteria:

(3) The proposed subdivision complies with all of the following, unless specifically exempt from compliance through a code provision applicable to a special area zone or overlay zone:

(a) EC 9.2000 through 9.3915 regarding lot dimensions and density requirements for the subject zone. Within the /WR Water Resources Conservation Overlay Zone or /WQ Water Quality Overlay Zone, no new lot may be created if more than 33% of the lot, as created, would be occupied by either:

1. The combined area of the /WR conservation setback and any portion of the Goal 5 Water Resource Site that extends landward beyond the conservation setback; or
2. The /WQ Management Area.

(b) EC 9.6800 through EC 9.6875 Standards for Streets, Alleys, and Other Public Ways.

(c) EC 9.6500 through EC 9.6505 Public Improvement Standards.

(d) EC 9.6706 Development in Flood Plains through EC 9.6709 Special Flood Hazard Areas - Standards.

(e) EC 9.6710(6) Geological and Geotechnical Analysis.

(f) EC 9.6730 Pedestrian Circulation On-Site.

(g) EC 9.6735 Public Access Required.

(h) EC 9.6750 Special Setback Standards.

(i) EC 9.6775 Underground Utilities.

(j) EC 9.6780 Vision Clearance Area.

(k) EC 9.6791 through 9.6797 regarding stormwater destination, pollution reduction, flow control for headwaters area, oil control, source control, easements, and operation and maintenance.

An approved adjustment to a standard pursuant to the provisions beginning at EC 9.8015 of this land use code constitutes compliance with the standard.

Section 24. The introductory paragraph of Section 9.8565 of the Eugene Code, 1971, is amended to provide:

9.8565 **Subdivision, Final Plat Approval Criteria.** The planning director shall approve or deny the subdivision final plat. Approval shall be based on compliance with the following criteria, unless specifically exempt from compliance through a code provision applicable to a special area zone or overlay zone:

Section 25. The introductory paragraph of Section 9.8670 of the Eugene Code, 1971, is amended to provide:

9.8670 **Applicability.** Traffic Impact Analysis Review is required when one of the following conditions exist unless the development is within an area subject to

a prior approved Traffic Impact Analysis and is consistent with the impacts analyzed:

Section 26. Section 9.8810 of the Eugene Code, 1971, is amended to provide:

9.8810 General Requirements.

(1) Willamette Greenway permit applications shall be considered in accordance with the Type III application procedures contained in EC 9.7000 through EC 9.7885 Application Procedures unless considered concurrently with a Type IV or Type V application.

(2) No development permit shall be issued by the city when a Willamette Greenway permit is required for the proposed development until the Willamette Greenway permit has been approved. Development permits shall be consistent with the terms and conditions of that Willamette Greenway permit.

Section 27. Subsection (4) of Section 9.8865 of the Eugene Code, 1971, is amended by adding a new subparagraph (i) and re-lettering the subsequent subparagraphs to provide:

9.8865 Zone Change Approval Criteria. Approval of a zone change application, including the designation of an overlay zone, shall not be approved unless it meets all of the following criteria:

(4) The proposed zone change is consistent with the applicable siting requirements set out for the specific zone in:

(i) EC 9.3140 S-DR Downtown Riverfront Special Area Zone Siting Requirements.

(j) EC 9.3205 S-DW Downtown Westside Special Area Zone Siting Requirements.

(k) EC 9.3305 S-E Elmira Road Special Area Zone Siting Requirements.

(l) EC 9.3605 S-JW Jefferson Westside Special Area Zone Siting Requirements.

(m) EC 9.3705 S-RP Riverfront Park Special Area Zone Siting Requirements.

(n) EC 9.3805 S-RN Royal Node Special Area Zone Siting Requirements.

(o) EC 9.3905 S-W Whiteaker Special Area Zone Siting Requirements.

(p) EC 9.3955 S-WS Walnut Station Special Area Zone Siting Requirements.

(q) EC 9.4205 /EC East Campus Overlay Zone Siting Requirements.

(r) EC 9.4715 /WP Waterside Protection Overlay Zone Siting Requirements.

(s) EC 9.4776 /WQ Water Quality Overlay Zone Siting Requirements (only for the purposes of adding the overlay zone. See EC 9.4786.).

(t) EC 9.4915 /WR Water Resources Conservation Overlay Zone Siting Requirements (only for the purposes of adding the overlay zone. See EC 9.4960.).

(u) EC 9.4815 /WB Wetland Buffer Overlay Zone Siting Requirements.

(v) An uncodified ordinance establishing a site specific S-H Historic Special Area Zone, a copy of which is maintained at the city's planning and

development department.

Section 28. Section 9.9540 of the Eugene Code, 1971, is deleted.

Section 29. The City Council hereby approves a Willamette Greenway Permit pursuant to EC 9.8800 – 9.8825, as those sections are amended by this Ordinance, for the portion of the Willamette River Greenway that is included within the boundaries of the S-DR Riverfront Special Area Zone to permit development consistent with the applicable S-DR Downtown Riverfront Special Area Zone code provisions adopted by this Ordinance. The Willamette Greenway Permit approved by this Ordinance shall remain in effect for any lot within the Willamette Greenway boundaries in the S-DR zone for as long as that lot continues to be in the S-DR zone. In support of this approval, the City Council accepts as its own findings those findings provided by the Applicant in Section 5.6 of Exhibit 8 attached hereto. A Willamette River Greenway setback boundary is hereby established in accordance with the applicable approval criteria at Section 9.8815(5)(a) of the Eugene Code, as shown on Exhibit 9 attached to this Ordinance.

Section 30. The "Prior Developed Areas" as shown on Exhibit 9 attached to this Ordinance are hereby acknowledged as being excluded from the /WR Water Resources conservation area, in accordance with Section 9.4920(5) of the Eugene Code.

Section 31. The EWEB Downtown Riverfront Specific Area Plan, a copy of which is attached to this Ordinance as Exhibit 2, and the Applicant's December 5, 2012 Final Submittal documents, portions of which are attached to this Ordinance as Exhibit 8, are approved as support and findings for this Ordinance.

Section 32. If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held invalid or unconstitutional by a court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision and such holding shall not affect the validity of the remaining portions hereof.

Section 33. The City Recorder, at the request of, or with the consent of the City Attorney, is authorized to administratively correct any reference errors contained herein, or in other provisions of the Eugene Code, 1971, to the provisions added, amended or repealed herein.

Passed by the City Council this

8th day of July, 2013

Beth Forrest

City Recorder

Approved by the Mayor this

9 day of July, 2013

Kitty Piercy

Mayor

Index of Exhibits to Ordinance 20513 (Council Bill 5095):

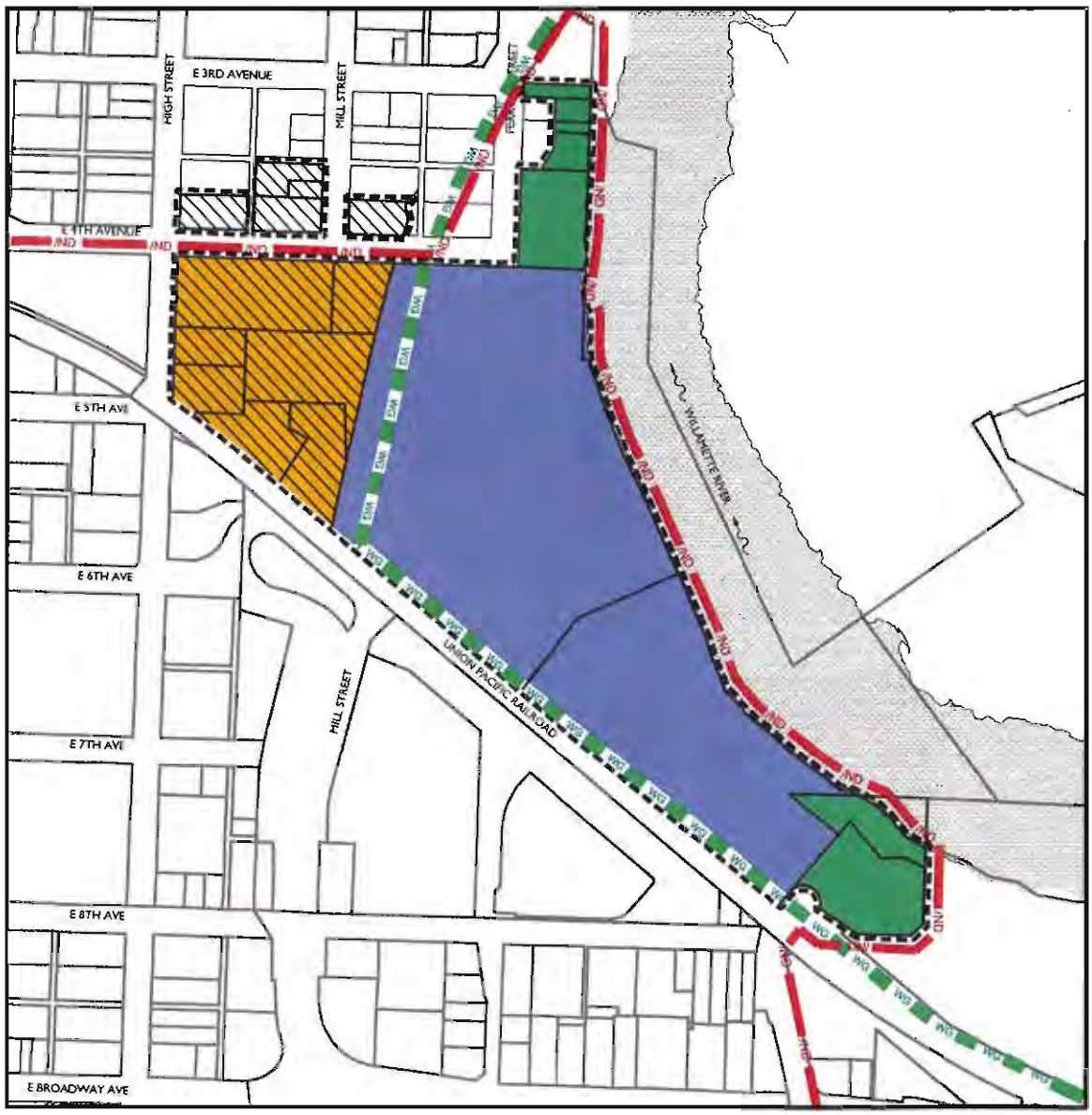
Exhibit 1

EWEB Downtown Riverfront Metro Plan Amendment

ASSESSOR'S MAP & TAX LOT NUMBERS	SIZE	BASE DESIGNATION & OVERLAY DESIGNATION	
17-03-29-33		**Existing**	**Proposed**
1400	0.12 acres	POS/ND	POS/ND
1600	0.11 acres	POS/ND	POS/ND
1800	0.05 acres	POS/ND	POS/ND
2000	0.19 acres	POS/ND	POS/ND
2600	0.25 acres	MU	MU/ND
2700	0.48 acres	HDR,MU/ND	HDR,MU/ND
2900	0.86 acres	POS/ND	MU/ND
17-03-30-44		**Existing**	**Proposed**
7400	0.29 acres	MU	MU/ND
8200	0.21 acres	MU	MU/ND
8300	0.08 acres	MU	MU/ND
8400	0.29 acres	MU	MU/ND
8500	1.41 acres	HDR,MU/ND	HDR,MU/ND
17-03-31-11		**Existing**	**Proposed**
100	0.29 acres	HDR,MU/ND	HDR,MU/ND
300	0.52 acres	HDR,MU/ND	HDR,MU/ND
17-03-32-22		**Existing**	**Proposed**
100	11.89 acres	HI/ND	MU/ND
300	1.12 acres	HDR,MU/ND	HDR,MU/ND
400	0.53 acres	HDR,MU/ND	HDR,MU/ND
401	.65 acres	HDR,MU/ND	HDR,MU/ND
800	5.86 acres	HI/ND	MU/ND
1500	1.16 acres	POS/ND	POS/ND
1600	0.70 acres	POS/ND	POS/ND

HDR - High Density Residential
HI - Heavy Industrial
POS - Parks and Open Space
MU - Mixed Use Area
ND - Nodal Development

Exhibit 1

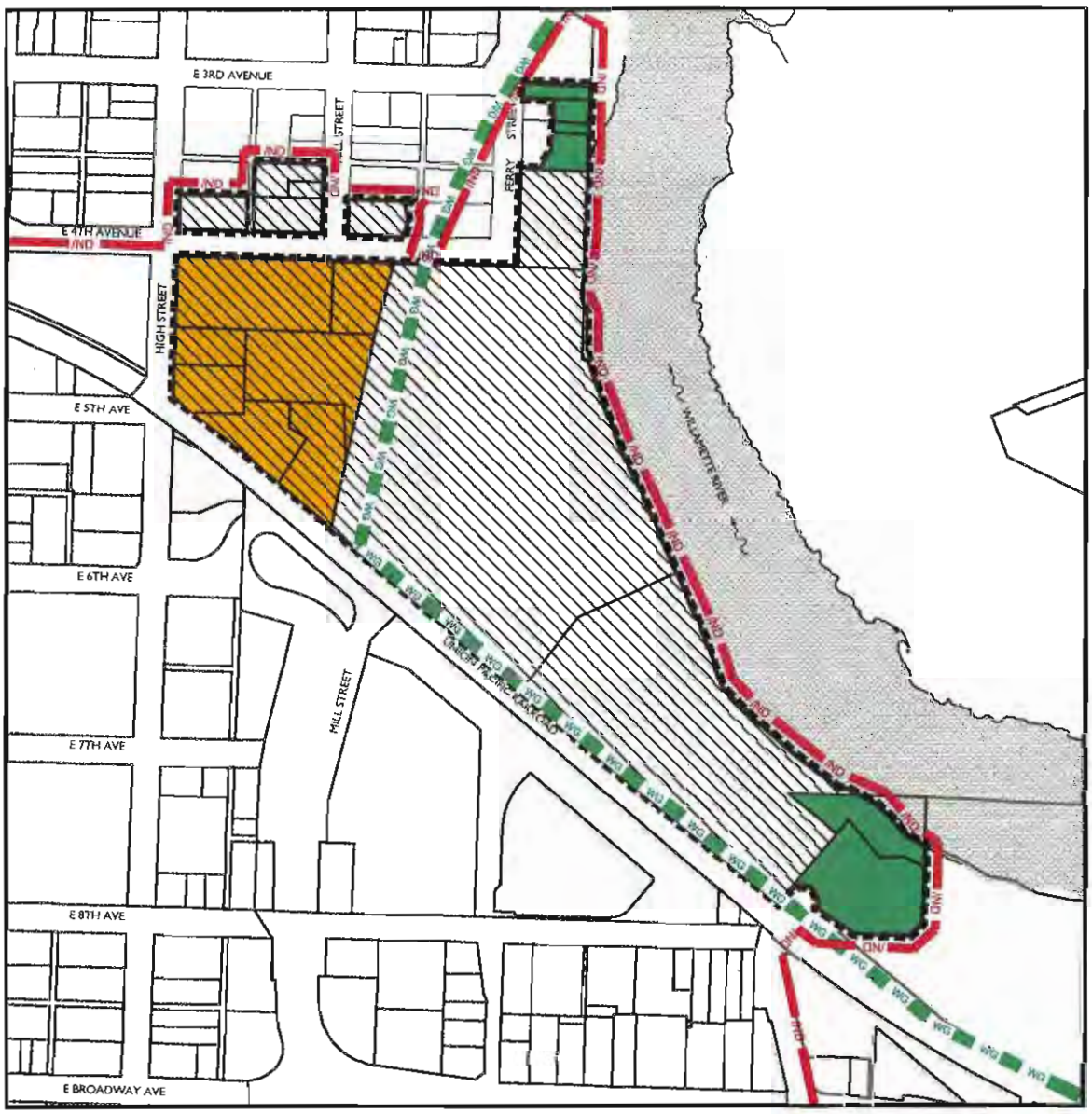


EWEB Downtown Riverfront
Existing Metro Plan Designations

LEGEND

- SAZ Boundary
- Mixed Use Area
- Willamette Greenway
- Nodal Development Area
- High Density Residential
- Heavy Industrial
- Parks and Open Space

Exhibit 1



EWEB Downtown Riverfront
Proposed Metro Plan Designations

LEGEND

- SAZ Boundary
- Mixed Use Area
- Willamette Greenway
- Nodal Development Area
- High Density Residential
- Parks and Open Space

Rowell Brokaw Architects

CAMERON McCARTHY
LANDSCAPE ARCHITECTURE & PLANNING

Eugene Downtown Riverfront Specific Area Plan

FOR CITY REVIEW - DECEMBER 2012

Acknowledgements

From June 2009 to June 2010, the Eugene Water & Electric Board (EWEB), in partnership with the City of Eugene, completed a master planning and public engagement process for the 27-acre EWEB Riverfront property—Eugene's Downtown Riverfront. This multi-year planning process for the redevelopment of this important place in Eugene was guided by a jointly-appointed Community Advisory Team, an extensive public involvement process that included more than 1,000 community members, and a multidisciplinary team of design consultants led by Rowell Brokaw Architects. By June 2010, the EWEB Riverfront Master Plan had received consensus approval from the Community Advisory Team and also the unanimous approval of the EWEB Board of Commissioners. In November 2010, Cameron McCarthy Landscape Architecture & Planning teamed with Rowell Brokaw Architects to lead the land-use applications phase charged with implementing the approved master plan. In addition to support from numerous City staff departments and EWEB staff, the following agencies and individuals have contributed their expertise and time to the development of the EWEB Riverfront Master Plan, the Downtown Riverfront Special Area Zone, and the Downtown Riverfront Specific Area Plan:

Community Advisory Team

Anita van Asperdt
Dave Hauser (co-chair)
Thomas Hoyt
Mark Johnson
Pat Johnston (co-chair)
Desiree Moore
Dean Papé
Mary Unruh
Gary Wildish

Eugene Water & Electric Board

Kevin Biersdorff, Project Manager, Land Use Phase
Mark Oberle, Co-Project Manager, Master Planning Phase
Jeannine Parisi, Co-Project Manager, Local Government and Community Outreach
Debra Smith, Director of Employee, Customer and Community Services
Vicki Maxon, EWEB Recorder

EWEB Board of Commissioners

John Brown
Bob Cassidy
Rich Cunningham
Joann Ernst
John Simpson
Roger Gray, General Manager
Randy Berggren, General Manager (retired April 30, 2010)

City of Eugene

Galbe Flock
Tom Larsen
Nan Laurence

Master Planning & Public Involvement 2009-2010

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with
PWL Partnership Landscape Architecture & Planning
WRT/Solomon E.T.C.
Cogito Public Involvement
Leland Consulting Group
Interfluve River Restoration
KPFF Engineering
Glatting Jackson Kercher Anglin/AECOM
UBC Greenskins Lab
Innovative Landscapes Consulting & Madrona Consulting

Land Use Consulting Team 2010-2012

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and
Rowell Brokaw Architects
John Rowell, AIA, Principal
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with
Cogito Public Involvement
Kittelson & Associates Transportation Engineering
Leland Consulting Group
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Innovative Landscapes Consulting

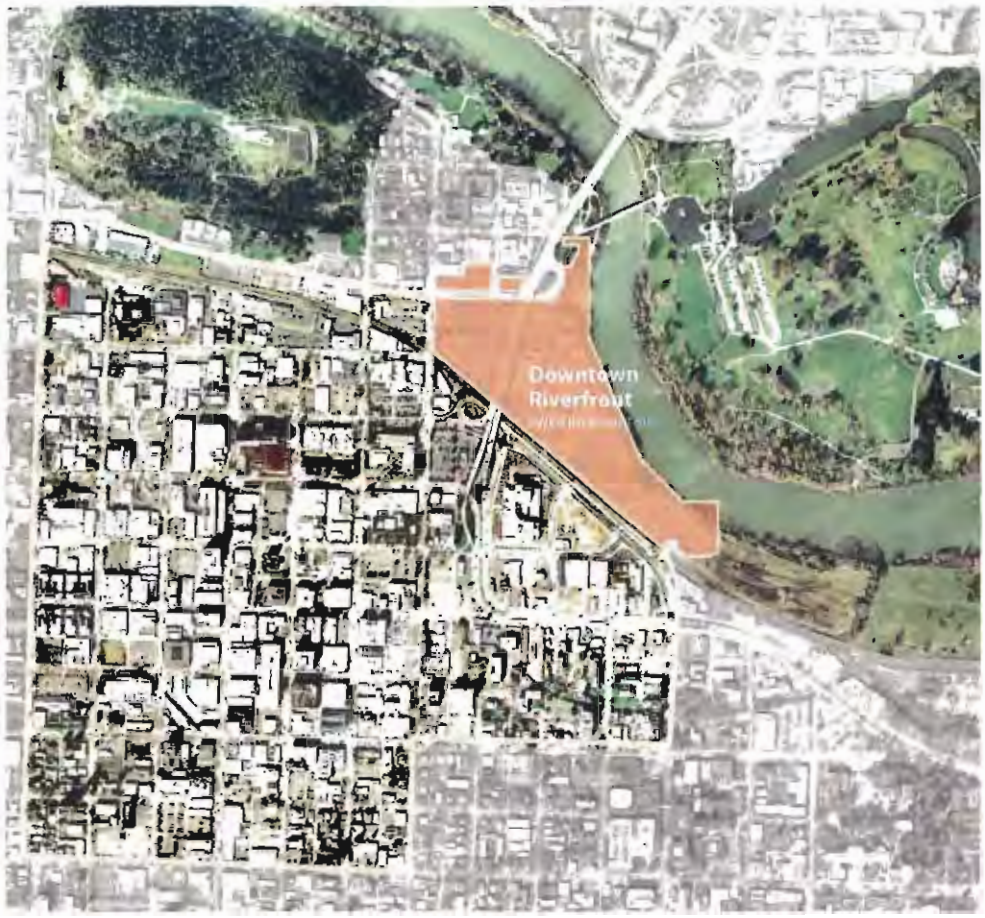


FIGURE 1-1

1. INTRODUCTION

A. OVERVIEW

For decades, Eugene has aspired to gracefully reconnect its downtown with the Willamette River. At the only location where the city center reaches to the river's banks, the Specific Area Plan for the Downtown Riverfront seizes this opportunity.

The fundamental vision for the redevelopment of Eugene's Downtown Riverfront includes a balance of sustainable redevelopment, ecological repair, and a high-quality public realm. The 27-acre Downtown Riverfront is envisioned as a vibrant, mixed-use neighborhood that utilizes green design principles and teaches about our community's history along this stretch of the Willamette. It seeks to implement several long-range growth-management policies that emphasize infill development, mixed-use, public access, and sustainable redevelopment strategies. This vision includes 8 acres of public open space, new construction, adaptive re-use, pedestrian-oriented streets and paths connecting Downtown Eugene to the Willamette River, accessible public amenities, and a Cultural Landscape that displays Eugene's ecological, social, industrial and civic history.

The Downtown Riverfront Specific Area Plan is a policy document that provides basis for the content of the Downtown Riverfront Special Area Zone (S-DR). This plan summarizes the content and public design process completed by the EWEB Riverfront Master Plan, and it gives form and specificity to the goals and principles outlined by the 2004 Downtown Plan. This Specific Area Plan for the Downtown Riverfront includes a physical framework for redevelopment and form-based guidelines that shape the public realm, as well as use requirements and design elements needed to achieve the community's vision of a rich and vibrant riverfront district.

This plan provides a framework that builds certainty about the future of the riverfront property's redevelopment. It is specific where necessary and also flexible enough to allow the community's vision to be realized in different ways. The plan outlines the principles, context, objectives, recommendations, and requirements from the completed master plan, as well as the public design process completed to arrive at this vision. Descriptions of design intent are included to provide the basis for adjustment criteria and future design decisions.

FIGURE 1-2
DOWNTOWN RIVERFRONT
ILLUSTRATIVE PLAN IN CONTEXT

B. PLANNING AREA

The Eugene Water & Electric Board's riverfront property includes 27.8 acres of land with river frontage that reaches from the DeFazio Footbridge to the western edge of the UO Riverfront Research Park property, near the Hilyard Street connection to the Riverbank Trail. The EWEB property's existing zoning is public land, industrial, and residential, with water resource (WR), site review (SR) and transit-oriented district (TD) overlays.

The EWEB riverfront property forms the northeastern edge of Downtown Eugene, and is adjacent to the 5th Street Market District, historic Skinner Butte neighborhood, Federal Courthouse District, and UO Riverfront Research Park. Alton Baker Park is directly across the Willamette River.

Existing structures on the riverfront property include the 100,000sf EWEB Headquarters Buildings, 43,000sf Operations Warehouse, 17,800sf Vehicle Repair Shop, 21,000sf Communications and Equipment Repair Building, 18,600sf Midgley's Building, and 20,000sf Steam Plant. The southeastern end of the property holds the Willamette Substation and the former manufactured gas plant (MGP) site, both of which will remain in EWEB ownership.

C. PROJECT CONTEXT

The EWEB riverfront site is unique in its relationship to Eugene's Downtown, being the only portion of the Downtown Area to reach the Willamette River. For more than 20 years, planning documents and community efforts have identified this property as the best place to reconnect the city with the river, and to create a downtown riverfront district that is unique to Eugene. In the 2004 Downtown Plan, this vision was captured in the four Riverfront Criteria that directed the development of the EWEB Riverfront Master Plan.

The EWEB property is also part of one of the most extensive open space amenities in the region: a string of public parks and continuous riverfront trails that run for more than 17 miles along the Willamette River. The acquisition of significant downtown riverfront open space (3-5 acres) holds a Priority Level 1 in the City's 2006 Project and Priority (PROs) plan, which identifies parks and open space priorities on a scale of 1 to 5. Priority 1 projects are the top priority and are targeted for completion within five years of the plan.

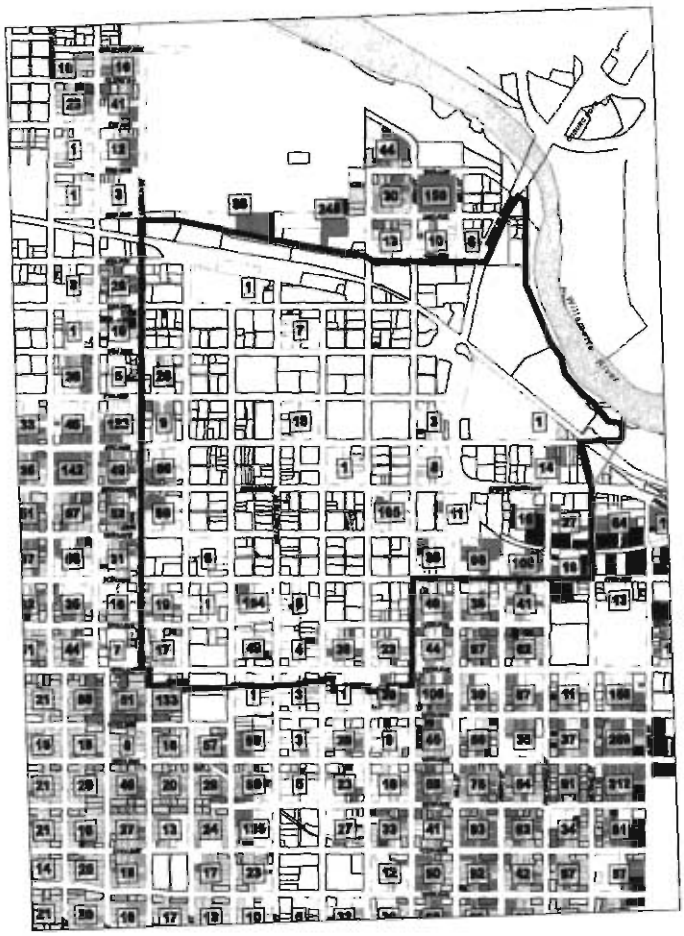


FIGURE 1-3
DOWNTOWN AREA HOUSING
DIAGRAM FROM 2004 DOWNTOWN PLAN

D. REDEVELOPMENT OPPORTUNITY

Implementation and phasing of the plan can be accomplished in a variety of ways depending upon the interests of the City and community, the needs of EWEB, and private development demand.

The plan allows for gradual redevelopment of the site and the phasing of site improvements. The success of the redevelopment plan is tied to elements within EWEB's control, located within the 27-acre site. Elements off-site that are not controlled by EWEB, such as a daylit Millrace or a new pedestrian bridge to Alton Baker Park, are allowed by the framework, but the plan is not contingent upon them.

The connection of 5th and 8th Avenues to create the proposed "Riverfront Street" and the development of new public open space with the associated bike path improvements are the most important initial steps toward the implementation of the complete vision. Edge properties are already served by existing infrastructure and may be redeveloped first, but the new street makes the riverfront open space and redevelopment blocks accessible, and public amenities are likely to build community value and confidence in the project. The plan allows these priorities to move forward independently or concurrently.

Other specific elements of the plan can be implemented in any coordinated sequence, and will contribute to the identity, awareness, and momentum of the project. These elements include the adaptive re-use of the Steam Plant, adaptive re-use of the Operations Warehouse, interpretive sites, and the redevelopment of the blocks along 4th Avenue, among others. The plan allows the interim use of several existing buildings, and offers interim parking strategies that encourage "pioneer development" on the riverfront property.

The crux of the vision is a combination of new riverfront open space, public access, Restaurant Row and the riverfront boardwalk, new residential capacity, and a backdrop of active, urban buildings at the heart of the site. Without these elements, the plan is not whole. It will take time and patience to accomplish these outcomes, but the community's intention is clear. Some of the blocks, including those near the viaduct and along the railroad, may take longer to redevelop, but the vision can be complete and self-sustaining once the core elements of the plan are in place.

2. PLANNING PROCESS

A. MEMORANDUM OF UNDERSTANDING

In 2007, to prepare for the relocation of EWEB's operations to the Roosevelt Operations Center in West Eugene, EWEB and the City of Eugene signed a Memorandum of Understanding (MOU) that outlined a master planning and public involvement process that would be completed for the EWEB site before any vacated portion of the yard could be sold or used for a non-utility use.

B. COMMUNITY ADVISORY TEAM (CAT)

The Eugene City Council and EWEB Board of Commissioners jointly appointed a Community Advisory Team (CAT) to guide the master planning process in 2008. This nine-member team included Dave Hauser, Thomas Hoyt, Desiree Moore, J. Dean Papé, Gary Wildish, Mark Johnson, Pat Johnston, Mary Unruh, and Anita van Asperdt. Together, the CAT brought a diversity of community interests, professional backgrounds, and areas of expertise to the project.

The Community Advisory Team held its first meeting in July 2008. Its first order of business was to establish operational ground rules and a decision-making process. The team agreed to a consensus model of decision-making, and established a back-up decision-making process in the event of an impasse. CAT meetings were listed in weekly public meeting notices and open to the public. Public comment periods were included at the beginning of each meeting to enable the participation of interested members of the community.

In fall 2008, the CAT began the development of an RFP/RFQ process to solicit architectural teams to serve as consultants to the project. The RFP/RFQ was released at the end of October 2008 and Rowell Brokaw Architects was selected as the design consultant by consensus in January 2009. The project's integrated design team included locally and internationally recognized expertise in landscape architecture, sustainable design, urban design, river restoration, participatory design processes, economic development, ecology, transportation, and riverfront design.

C. PUBLIC INVOLVEMENT

The master planning process for the Downtown Riverfront required an authentic and extensive public involvement plan to guide the development of a community-supported vision. This required a high-quality process, responsive design team, and the deep integration of public input with the project's design and decision-making.

The public involvement process was conducted according to the Core Values of the International Association for Public Participation (IAP2), and was approved by the Community Advisory Team by consensus at the outset of the project. This approved Public Engagement Plan established that the process would be:

- **Meaningful:** Input will be timely and have the opportunity to affect outcomes
- **Accountable:** People will have the opportunity to know how their input was used
- **Inclusive:** Reach for input beyond those who regularly attend downtown meetings
- **Transparent:** Decisions are public and materials are available on the website
- **Realistic:** Educated about the project constraints, objectives, and parameters
- **Outcome-oriented:** Purpose of public process is to achieve an adopted plan

For this highly visible planning effort, a variety of public involvement strategies were used:

- Community Advisory Team – public biweekly work sessions
- Extensive Interviews with local experts and advocates
- Issue-Specific Focus Groups about transportation, site ecology, sustainable urbanism, arts, history & culture
- AIA/Community Design Charrette
- Four Large Public Events
- Speaking Engagements at Civic Groups
- Outreach with Visual Displays at Community Events
- Site Tours
- Outreach to Accessibility, Communities of Color, Youth
- Project Website (www.eugeneriverfront.com)
- Media coverage (newspapers, newsletters, television, radio)

D. DESIGN PROCESS

June - August 2009

The design process began with substantial research, site visits, and more than 125 stakeholder interviews to develop an understanding of pivotal issues and community visions related to the riverfront. Material from this research phase was presented in biweekly work sessions with the Community Advisory Team. The consensus approval of seven Guiding Principles gave additional definition to the work and documented the CAT's shared values. A set of project assumptions established critical physical constraints to the design process, and a series of use scenarios to test the plan's flexibility were also approved by consensus.

September 2009-January 2010

At the first major public event in September 2009 (attended by 150 people), the design presentation focused on site context, history, vision, and what types of elements a master plan can control. The following weekend, Rowell Brokaw Architects led a pro bono design charrette with the support of the local AIA-SWO chapter. The design team then developed several design alternatives that were consistent with the CAT's Guiding Principles, Downtown Plan criteria, and preliminary input from the public.

In November 2009, a series of design options were presented at a second public event (attended by 200 people). Hundreds of comments were collected and reviewed by the design team following the small and large group discussion at the event. Strong public support for several themes had emerged:

- Make it a mixed-use, urban riverfront
- Integrate the river and city environments
- Improve connections and access for all
- Create new habitat and open space
- Celebrate the history of the site
- Allow for future amenities like Millrace
- Provide places for people to gather
- Include a new connection to Alton Baker
- Create something unique, authentic

January - March 2010

The single design option was then developed with additional input collected at community presentations and meetings with the local human rights committee on accessibility (HRAC). The single design adjusted the location of the primary street and included a vision for the public open space defined by native plant communities, habitat enhancement and public gathering space. The creation of public amenities along the riverfront was emphasized, and opportunities to "touch the water" were removed in response to concerns for safety along the swift river edge. An independent ecological assessment of the design was also completed, and the final design was found to be largely consistent with its recommendations.

When the single design option was presented to 300 people on March 3, 2010, more than 80% signaled their approval using electronic polling devices that were given to all in attendance. On May 9, 2010, after two final months of additional refinement and work sessions with the CAT, the final design was presented at Open House event on the EWEB site. Approximately 200 people attended to see the completed plan and tour the site.

E. MASTER PLAN APPROVAL

April - June 2010

By the time the project was complete, more than 1,000 community members had actively participated in the development of the design. The master plan received consensus approval from the Community Advisory Team on April 28, 2010. The plan was then unanimously approved for adoption by the EWEB Board of Commissioners on June 1, 2010.

F. LAND USE PHASE

The Board-approved master plan for the EWEB site articulates a shared vision for the redevelopment of a vibrant, green, mixed-use neighborhood along Eugene's Downtown Riverfront. The plan's framework includes 8 acres of public open space, dramatically improved public access to the riverfront, new redevelopment blocks at the heart of the city, and specific design elements that teach about our river, our history, and our city (see Chapter 3: Vision).

November 2010-December 2011

To codify the master plan, a second phase of work was contracted to develop a new Special Area Zone, associated plan amendments, and this Specific Area Plan.

DESIGN DEVELOPMENT

June 2009-May 2010: Graphic Summary

RESEARCH ------- **SITE ANALYSIS** ----- **PRELIMINARY CONCEPTS** ----- **CONCEPTS**
JUNE 2009 ------- SEPTEMBER 2009 ----- OCTOBER 2009 ----- OCTOBER 2009

DESIGN OPTIONS FOR REVIEW ----- **EMERGING FRAMEWORK** ---- **FINAL DRAFT**
NOVEMBER 2009 ------- FEBRUARY 2010 ----- MARCH 2010 ----- MAY 2010

3. VISION

A. RIVERFRONT CRITERIA

The planning for the redevelopment of the EWEB Riverfront Property began with the four Riverfront Criteria laid out in the 2004 Downtown Plan. The Downtown Plan states that the plan for the Downtown Riverfront will be evaluated for consistency with the following criteria:

1. Create a "people place" that is active, vibrant, accessible and multi-use.
2. Provide appropriate setbacks, deeper where environmental or habitat issues are more critical, shallower in other areas.
3. Incorporate appropriate building and site design techniques that address environmental concerns.
4. Incorporate an educational aspect, so that our riverfront improvements teach us about our river, our history and our city.

B. GUIDING PRINCIPLES

The Community Advisory Team approved a vision statement and a set of seven Guiding Principals to inform the master planning process for the Downtown Riverfront. The riverfront planning process was structured to meet these principals, meet the Riverfront Criteria, and address the requirements of the 2007 MOU between EWEB and the City.

Vision Statement

The vision for the redevelopment of Eugene's Downtown Riverfront is based upon the understanding that our community's social, ecological, economic and sustainable concerns are interdependent. The redevelopment of the EWEB riverfront property offers the unique opportunity to advance these interests simultaneously for the benefit of all Eugene, and to revision our Downtown Riverfront as a place that participates actively and graciously with the community that surrounds it.

Sustainable Urbanism

The redevelopment of the EWEB riverfront site should transform the vacated utility property into a thriving, pedestrian-oriented, sustainable community.

Balance of Uses

This plan should include a diverse mix of public and private spaces, with a variety of uses and opportunities layered within each.

Connection

The plan should reconnect the city with the river, and extend the riverine landscape into the city.

Ecology

Ecological objectives should focus on education and habitat enhancement, and direct efforts toward the creation of a managed, functioning ecology along the Downtown Riverfront.

Identity

A 9-acre Cultural Landscape that teaches about the history, ecology, art, and industrial heritage of the riverfront. It is welcoming and accessible to all.

Economics

The plan should contribute to the vitality and economic sustainability of Eugene.

Feasibility

Feasibility should be considered in terms of existing conditions, standard practices, political climate, and community support for a project.

C. KEY DESIGN CONCEPTS

The following design concepts describe how the Guiding Principles were translated into a specific design direction:

An Interdependent and Sustainable City

The redevelopment of the EWEB's riverfront property models green strategies and demonstrate balanced, environmentally conscious, economically viable redevelopment. To contribute to the development of a more sustainable city, the plan recommends a focus on green infrastructure, natural systems, residential capacity, and energy-efficient design with the redevelopment of this property.

A Great Loop

The plan creates a "Great Loop" by connecting Eugene's Great Streets through the riverfront property, establishing a quality of public access and civic structure that benefits the entire city.

Urban Repair & Habitat Enhancement

In re-purposing this impervious utility yard as a pedestrian-oriented neighborhood and public open space, the plan repairs a defining piece of Eugene's urban fabric and reconnects the city and the river.

Interwoven Habitat: An Undulating Edge

Rather than employing a boilerplate setback on a previously developed site, the plan blurs the boundary between the natural and urban environments. Native vegetation reaches into the city, and green redevelopment offers a connection to the river. All new construction will be set back farther than 100' from the top of bank, and the design also pulls the river landscape deeper into the site at three locations: the "green extension" of 5th Avenue, Millpond Swale, and Pollinator Prairie.

Special Place: A Cultural Landscape

The 2004 Downtown Plan describes the need to support and maintain the "special places" in our city, including the Willamette River, nearby open space, and historic properties like the Steam Plant. This plan delivers on a community-inspired wish to reveal the history imbedded in this site, and to create a special place for people to enjoy along the Downtown Riverfront.

Allow for Future Opportunities

Extensive community outreach revealed other adjacent opportunities (e.g., a daylit Millrace, Downtown Quiet Zone, additional at-grade railroad crossings, and a new pedestrian bridge to Alton Baker Park) that could be coordinated with the redevelopment of the EWEB site. The plan does not require these elements, but it also does not conflict with the realization of these goals in the future.

D. OBJECTIVES + CRITERIA

The redevelopment of the Downtown Riverfront (EWEB) property should accomplish the following objectives:

Connect Public Spaces

Maintain and enhance a continuous and diverse public realm through a network of streets, paths and public open space, including parks, promenades and plazas along the riverfront. Each development effort should contribute to the creation of a cohesive, activated public realm.

Encourage Variety & Diversity

Include a vibrant mix of uses and a variety of housing types that support a more diverse, active Downtown Riverfront. A variety of housing and building types should support a diverse population and promote an active, vibrant 18-hour neighborhood. Mixed-use development may be either horizontal or vertical, depending on the scale and intensity appropriate for a specific sub-area.

Create High-Quality Open Space

Design the open space system to serve as a city-wide resource, and celebrate the city's relationship with the Willamette River.

Create Active, Green Streets for People

Introduce ground-level activities and spatial relationships that enliven streets and public spaces, and connect the landscape character of public open spaces with the public rights-of-way when applicable. Create a pedestrian-friendly street network.

Establish View Corridors

Maintain and enhance views to the riverfront park and river.

Promote Excellence in Design and High-Quality Development

Guide building form and uses to reinforce the active, public character of streets, open space and riverfront amenities. Each site, building and street improvement should be treated as a long-term contribution to the overall quality of the city center. Exterior design and building materials shall exhibit both the permanence and quality appropriate to an urban, mixed-use district.

Connect to History

Reinforce the spatial characteristics of the Downtown Riverfront's unique setting, recognize its layered history, and build on cultural and historic assets without being historicist.

Model Sustainable Redevelopment

Support a lively, mixed-use, multi-modal neighborhood that integrates people, urban habitat, natural systems, green infrastructure, and green architecture. Site development and infrastructure should reflect a commitment to sustainability, and to a healthy, green community.

E. FRAMEWORK + ESSENTIAL FEATURES OF THE PLAN

The approved plan for the redevelopment of the Downtown Riverfront is a physical framework that includes essential features that give definition to the community-supported vision.

The framework of the approved plan extends the urban structure of Downtown to meet a new crescent-shaped park along the river (a total of approximately 8 acres of open space). The framework creates the structure for the development of individual blocks, public access, and the enhancement of the riverfront open space. It also provides context for the essential features of the plan.

1. Framework

By extending the existing urban framework of city streets and city blocks, and developing an arc of open space along the Willamette River, the framework diagram illustrates how the plan physically connects the city and the river. The elements of the framework include:

A Great Loop that reconnects the riverfront to Downtown by connecting the Great Streets of 5th and 8th Avenues through the site. This primary street forms a direct and graceful curve through the property, coming closest to the river near the EWEB Headquarters and then swinging away to meet the relocated railroad crossing aligned with 8th Avenue.

An arc of riverfront open space forms a Cultural Landscape. This park space includes a new public plaza, public art, riparian enhancement, native plants, educational aspects, the Steam Plant, and a large area of public open space along the Ferry Street axis that provides green infrastructure and could allow for a future connection to the historic Millrace. This landscape is designed with a focus on education and habitat enhancement, and it primarily utilizes native and non-invasive introduced plant species that require minimal supplemental water, fertilization or pest or disease control.

Secondary streets follow utility easements and provide the redundant life-safety access that allows Riverfront Street to be closed to traffic during festivals. The street network is public and provides nearly 300 on-street parking spaces to support retail and restaurant uses.

Well-formed urban blocks that allow for a wide range of redevelopment programs and support a legible, pedestrian-friendly urban fabric.

2. Essential Features

Within the framework, these essential features are fundamental to the approved vision:

Green streets that integrate bike and automobile transportation, and include landscaped stormwater treatment and on-street parking to accommodate retail uses.

A series of interpretive sites that teach about the history of the Willamette River, Eugene's African-American community, and energy production and water-related industry on this site.

Restaurant Row, a public boardwalk, and 5th Avenue Plaza overlook the riverfront open space and create a "vibrant, active, people place" that is a focus of urban activity. Restaurant Row offers a prime location for cafes, restaurants and amenities along the river. Pedestrian passages along view corridors create an open and accessible threshold between the city and the riverfront open space.

New residential capacity is a required component of the high-density development envisioned for this site as a whole.

The continuous Riverbank Trail, relocated and set back from the top of bank. This allows for the re-grading of the riverfront open space to a gentler slope that will create space for public amenities and improve connections to the water. The pedestrian boardwalk is grade-separated from the adjacent Riverbank Trail to allow for multiple modes to move safely through the area.

Promotes adaptive re-use of the Operations Warehouse, Steam Plant and Midgley's Building.

Pollinator-friendly open space planted with native plant species on the capped, former manufactured gas plant (MGP) site.

FIGURE 3-1: ILLUSTRATIVE PLAN

F. POLICIES

The following policies articulate the vision for the redevelopment of the Downtown Riverfront.

General

- New development shall promote the vision of the Downtown Riverfront as a unique, sustainable neighborhood through the implementation of a network of public and private open space areas that include parks, green infrastructure, urban agriculture, enhanced habitat, gathering spaces, and interpretive sites.
- New development shall utilize design strategies and construction techniques that integrate built and natural environments and contribute to the establishment of a high-quality riverfront district that includes urban uses, green infrastructure, cultural landscapes, and open space.
- New development shall contribute to a diverse public realm through an interconnected network of paths, streets, and open space areas.
- New development shall contribute to a mixed-use riverfront district that includes commercial/retail and residential activities and highly accessible public open space.
- New development shall contribute to the establishment of a vibrant, accessible, multi-use Downtown Riverfront by incorporating uses and amenities that invite the community to eat, gather, live, work, and play.

Urban Design

- New development shall promote an active, diverse, green, mixed-use neighborhood and strive for excellence in site and building design.
- New development shall enliven streets and public spaces by incorporating amenities and active ground-level uses with either a high degree of transparency with commercial uses or a frequency of entries with residential uses.
- New development shall maintain and enhance views to riverfront open space and the Willamette River.
- Building form shall reinforce the active and public nature of streets, open space areas, and riverfront amenities.
- Site, building, and infrastructure design shall contribute to a healthy and livable community by following sustainable development practices to the greatest degree practicable.

Infrastructure

- Extend the Downtown transportation network to serve the riverfront and safely accommodate pedestrian, bicycle and vehicle traffic along public streets, paths, and accessways.
- Implement the "Great Loop" concept in the EWEB Riverfront Master Plan, which builds on the "Great Streets" concept in the Eugene Downtown Plan, through the provision of a direct and efficient street connection between High Street and 8th Avenue that connects through the riverfront property and provides access to the riverfront open space.
- Preserve and enhance visual connections to the Willamette River through the establishment of View Corridors as shown in the EWEB Riverfront Master Plan in conjunction with the construction of the transportation network (streets, paths, accessways and trails).
- Encourage non-vehicular transportation by accommodating multi-modal pedestrian transportation amenities and through the design of a pedestrian-friendly street network.
- Public streets shall be constructed with green stormwater treatment systems to the extent feasible including, but not limited to, infiltration planters, rain gardens, flow-through planters, and vegetated swales.
- Public streets shall provide on-street parking that support commercial and retail uses and on-street bicycle parking to accommodate non-vehicular transportation.

Open Space

- Public and private open space areas shall be designed to emphasize connectivity, permeability, diversity, and sustainability.
- Design of public open space areas shall ensure safety and compatibility among adjacent uses and facilities, and comply with City design and development standards and specifications.
- Promote the development of a Cultural Landscape that consists of public green space, interpretive sites, public art, vistas, and historic structures that teach about the history of Eugene's Downtown Riverfront.
- Use the riverfront landscape to teach about our community's history, in a variety of ways and at a variety of scales.
- Envision and manage habitat areas as small samples of habitat whose primary purpose is to foster education and demonstrate the potential for ecological enhancement in urban environments, and recognize that, due to their relatively small size and human use impacts, these areas cannot achieve the level of ecological function that is possible in larger, undisturbed habitat areas in non-urban settings.

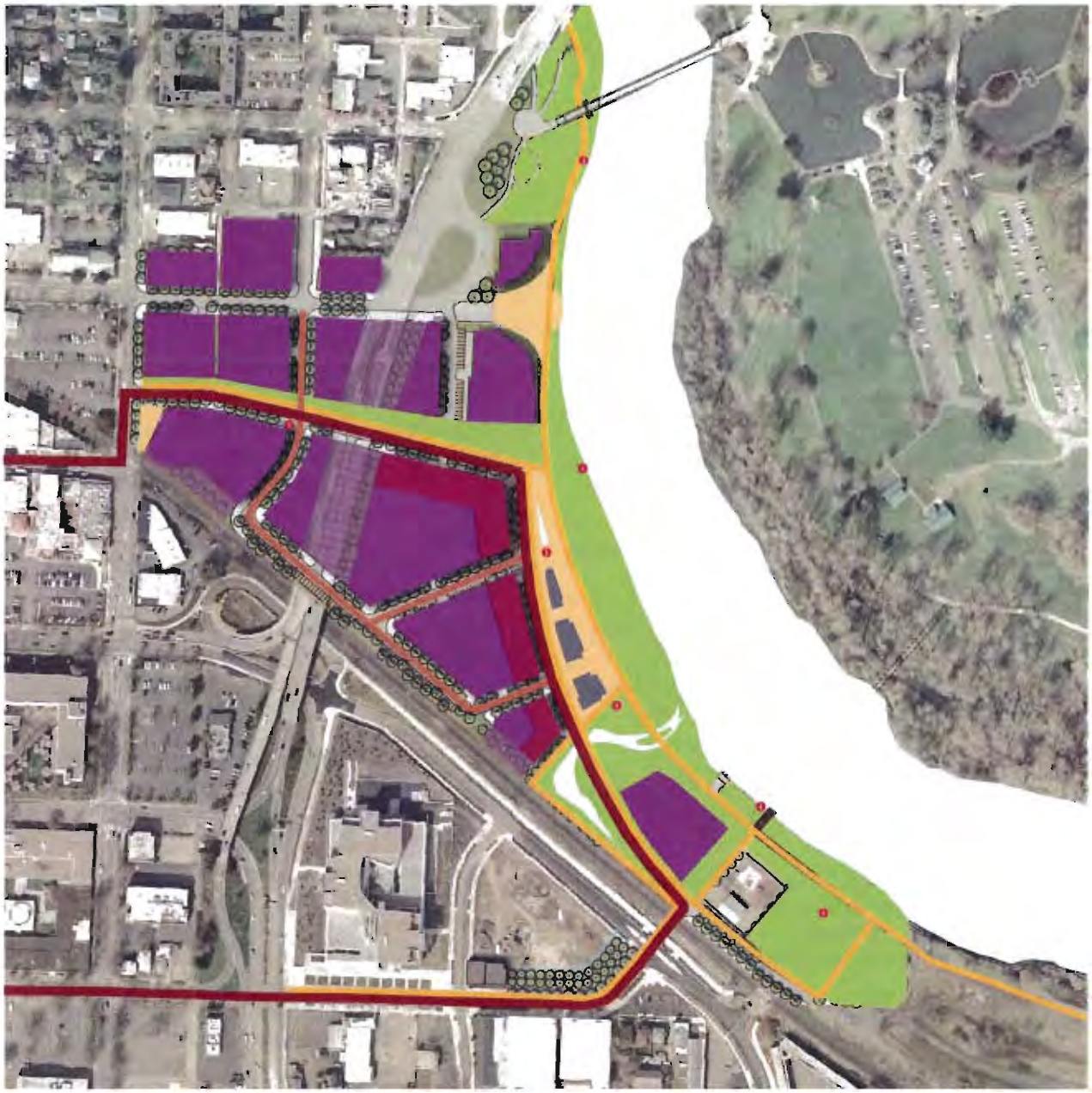


FIGURE 3-2: FRAMEWORK DIAGRAM

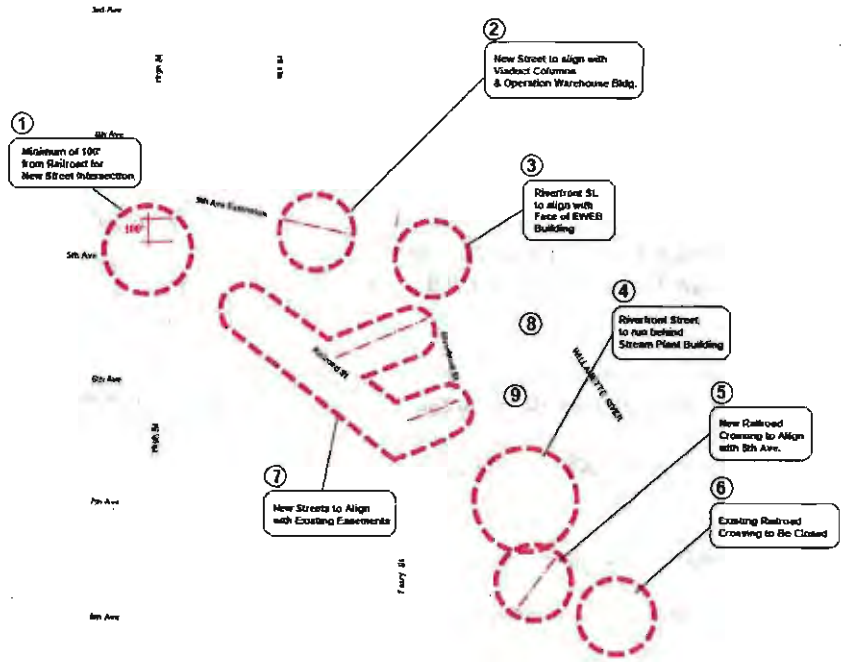


FIGURE 3-3: SETTING-OUT DIAGRAM

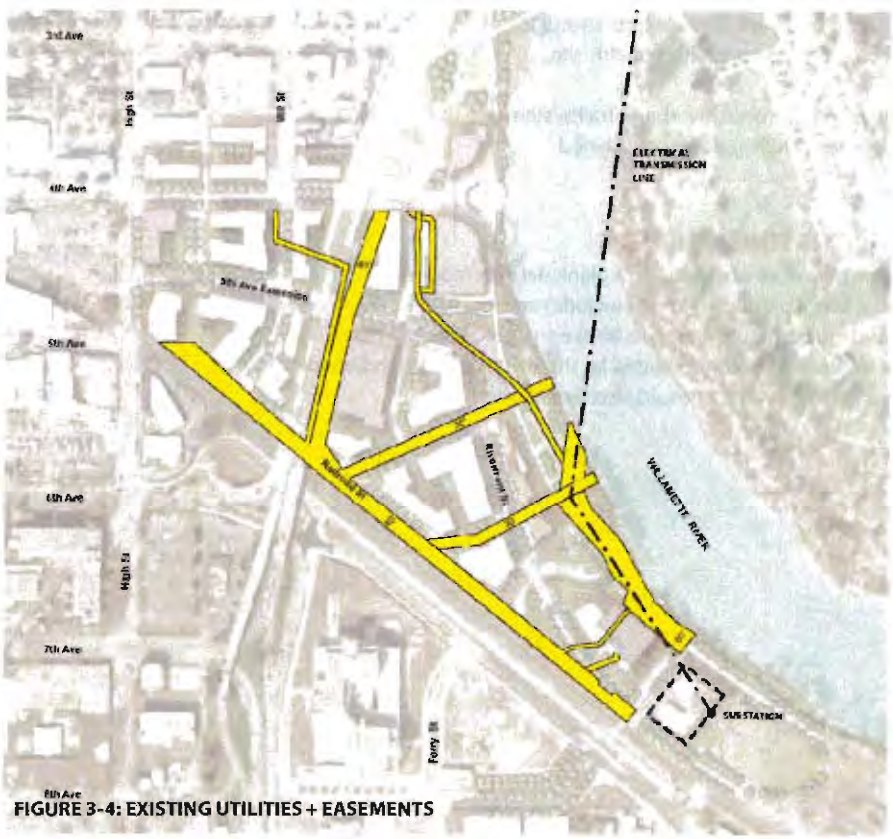


FIGURE 3-4: EXISTING UTILITIES + EASEMENTS

G. PHYSICAL CONTEXT

The Setting Out Diagram illustrates some of the key factors that influenced the development of the plan's urban form, circulation network, and open space:

1. 100' minimum distance on High Street from the railroad crossing to the new 5th Avenue extension for safety and Quiet Zone options.

2. The extension of 5th Avenue runs beneath the existing viaduct, approximately parallel to the face of the existing Operations Warehouse.

3. 5th Avenue reaches no closer to the river than the existing river-side face of the EWEB Headquarters Building.

4. Riverfront Street to run on the south/west side of the existing Steam Plant.

5. The new railroad crossing aligns with 8th Avenue.

6. The existing railroad crossing is relocated from Hilyard Street to 8th Avenue.

7. New secondary streets to coincide with existing underground utilities.

8. The Willamette River exerts strong forces and presents ecological opportunities on this site.

9. The continuous Riverbank Trail system and public open space will be established and maintained.

H. EXISTING UTILITIES

The plan does not presume a blank slate for redevelopment on the EWEB property. The site includes several major utility lines and infrastructure elements above and below grade. These elements are accommodated by the street network and open space framework, or could also be relocated.

4. DESIGN GUIDELINES

Form-based and urban design guidelines establish a framework for redevelopment and define uses only as necessary to articulate the vision for the riverfront property's redevelopment. Guidelines address site planning, building form, and the public realm (streets and open space).

As a whole, the design guidelines:

- Promote redevelopment that fulfills the established criteria and principles for the Downtown Riverfront.
- Allow for flexibility and unforeseen market conditions while achieving the fundamental vision and objectives of the plan.
- Establish redevelopment requirements and limits consistent with the Principles and Criteria of the Master Plan.

A. SITE DESIGN GUIDELINES

The plan's urban design supports the development of a high-quality public realm and legible, pedestrian-oriented urban fabric. The Site Design Guidelines facilitate this kind of redevelopment by allowing a wide variety of uses within a clear framework.

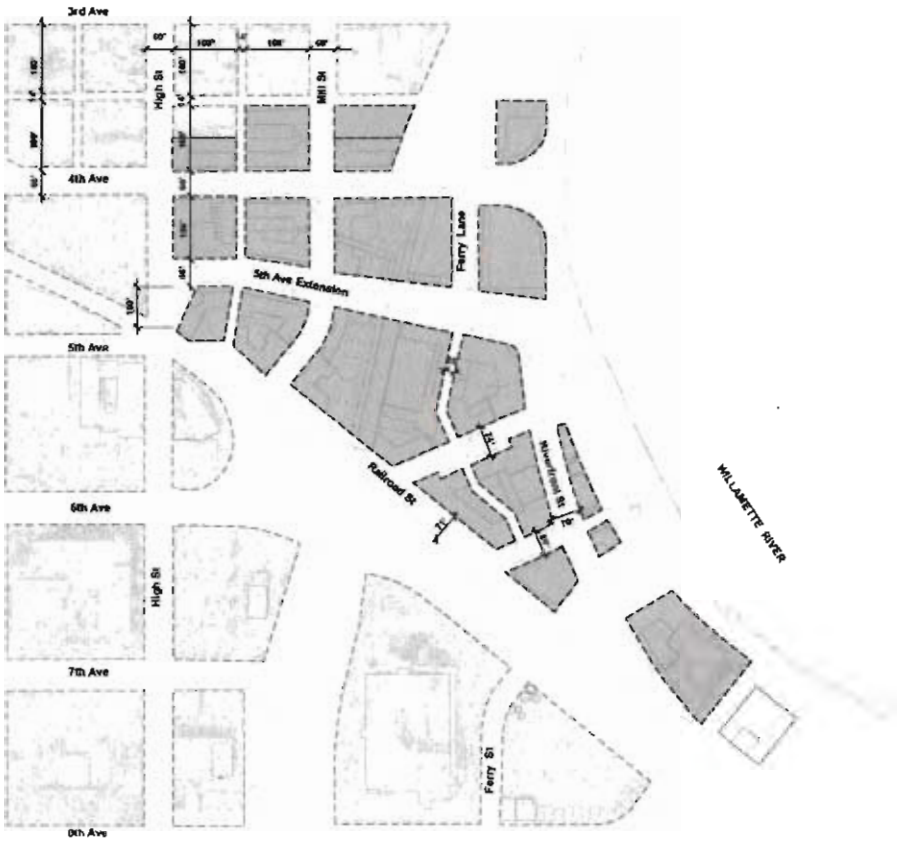


FIGURE 4-1: BLOCK PATTERN

BLOCK PATTERN

Eugene's typical block pattern measures 400' x 400' (centerline to centerline) and is subdivided by mid-block alleys in both directions. On the riverfront site, the block pattern is adjusted to respond to the arc of the river, railroad corridor, and location of existing buildings. New blocks are oriented to take advantage of beautiful views and establish view corridors down secondary streets to the river. Mid-block alleys are necessary for service and access but their locations can be flexible if connectivity requirements are met.

The block structure responds to immovable conditions (Willamette River, Ferry Street Viaduct, Union Pacific Railroad) and the need to create public access to the riverfront. Where possible, the block structure connects to Eugene's historic urban fabric and supports the creation of a vibrant, pedestrian-oriented public realm.

FIGURE 4-2: PARCELIZATION

PARCELIZATION

New blocks could be divided into parcels in multiple ways, all of which should reinforce the basic character and framework of streets and open space created by the master plan. Figure 4-2 illustrates how parcels can reinforce the framework and introduce a finer grain of urban form.

Block geometries and parcel dimensions have been tested for basic feasibility in relationship to known building types and parking strategies. Parcel recommendations also respond to the differing character of the property's sub-areas (e.g., the Central Blocks versus parcels West of the Viaduct).

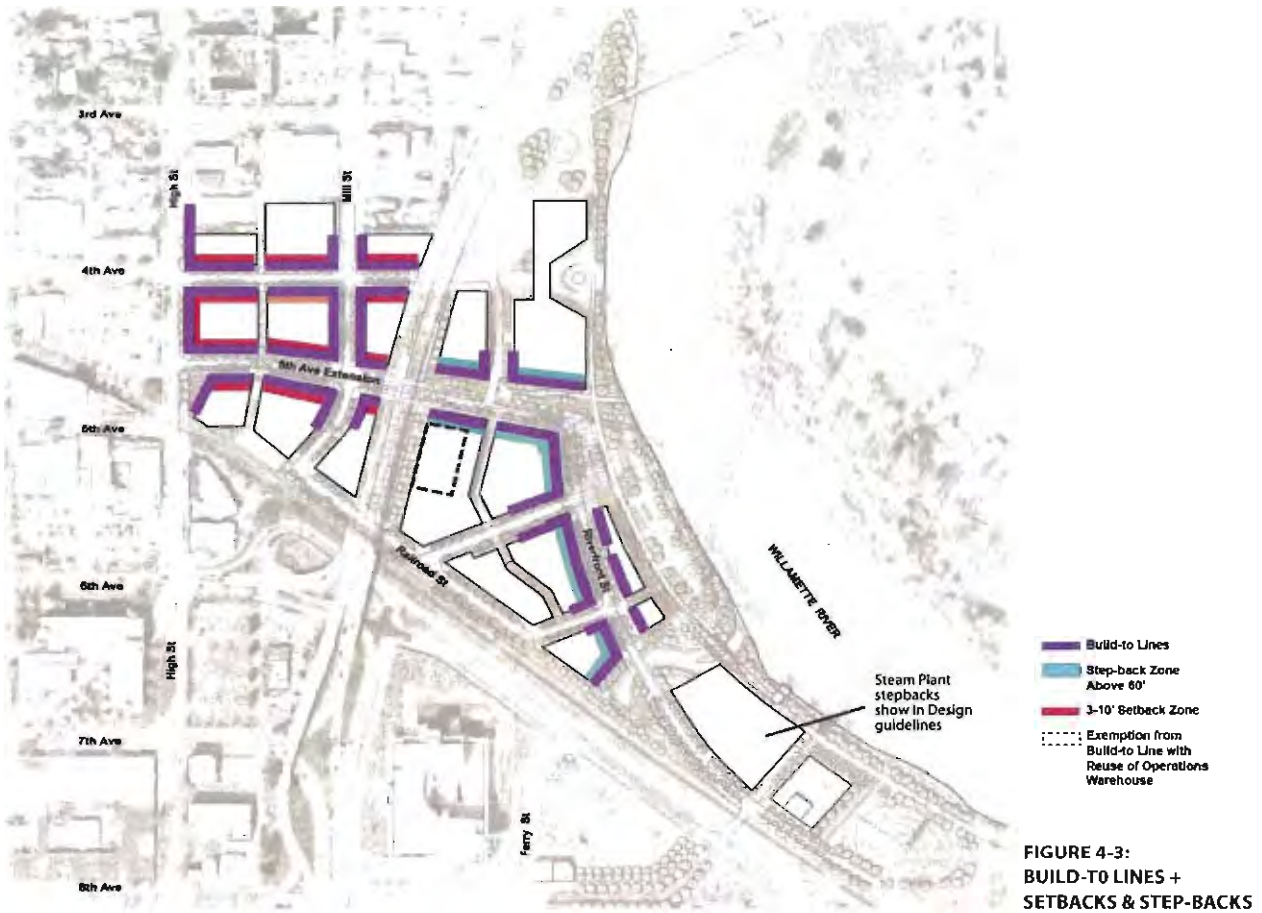


FIGURE 4-3: BUILD-TO LINES + SETBACKS & STEP-BACKS

BUILD-TO LINES

The proposed build-to lines establish strong street frontages that, in turn, support the development of a strong public realm. The build-to lines coincide with the street right-of-way lines in most cases, with the exception of the areas to the west of the viaduct where a required setback is noted (along 4th and 5th Avenues). In those cases, a setback up to 10' is allowed and is intended to provide privacy for ground-floor uses and to accommodate elements such as porches, stoops, balconies, landscaping and front yards.

SETBACKS, STEP-BACKS + ENCROACHMENTS

The street-edge property line defines the separation between the public right-of-way and the private realm. The recommended build-to lines define where buildings must be built to. A minimum percentage of the building face must be built to this line. On certain streets, such as Riverfront Street, the build-to line is at the street property line, because a continuous street wall with ground-floor retail or active uses is desirable.

On other streets likely to have a more residential character, a setback of 3' to 10' allows for landscaping, front porches, stoops and balconies and is intended to provide privacy for ground floor residential units as well as allow for level changes between the sidewalk and the ground floor of the building.

A step-back is a required change in the plane of the building façade above a certain height. Step-backs are required on the buildings facing Riverfront Street above 60' by a 10' horizontal dimension. This allows a roof-deck or terrace at the 60' level for additional units on the floors above. On high-density opportunity sites, this step-back is required at 40' for buildings over 80' in height. Additional bulk controls also apply.

Architectural elements such as balconies, bay windows, arcades, stoops and porches are permitted to encroach into the space beyond the setback or the build-to lines. Their maximum dimensions are defined in the form-based design guidelines.

FIGURE 4-4: VIEW CORRIDORS

VIEW CORRIDORS

Visual connection to the riverfront in the form of view corridors is one of the key objectives of the plan. Streets can provide unobstructed view corridors and the proposed street alignments are intended to afford several view corridors to the river.

Currently, 4th Avenue already terminates in a framed view between the two EWEB buildings. The new 5th Avenue extension offers a widening vista of the river once one has passed beneath the viaduct. The existing underground utility easements beneath Millrace Lane and Water Lane also offer two new tightly framed views of the river. The recently constructed alignment of Ferry Street where it meets 6th Avenue and Hilyard offers a broad vista of the river and park beyond, as does the new railroad crossing at 8th Avenue.

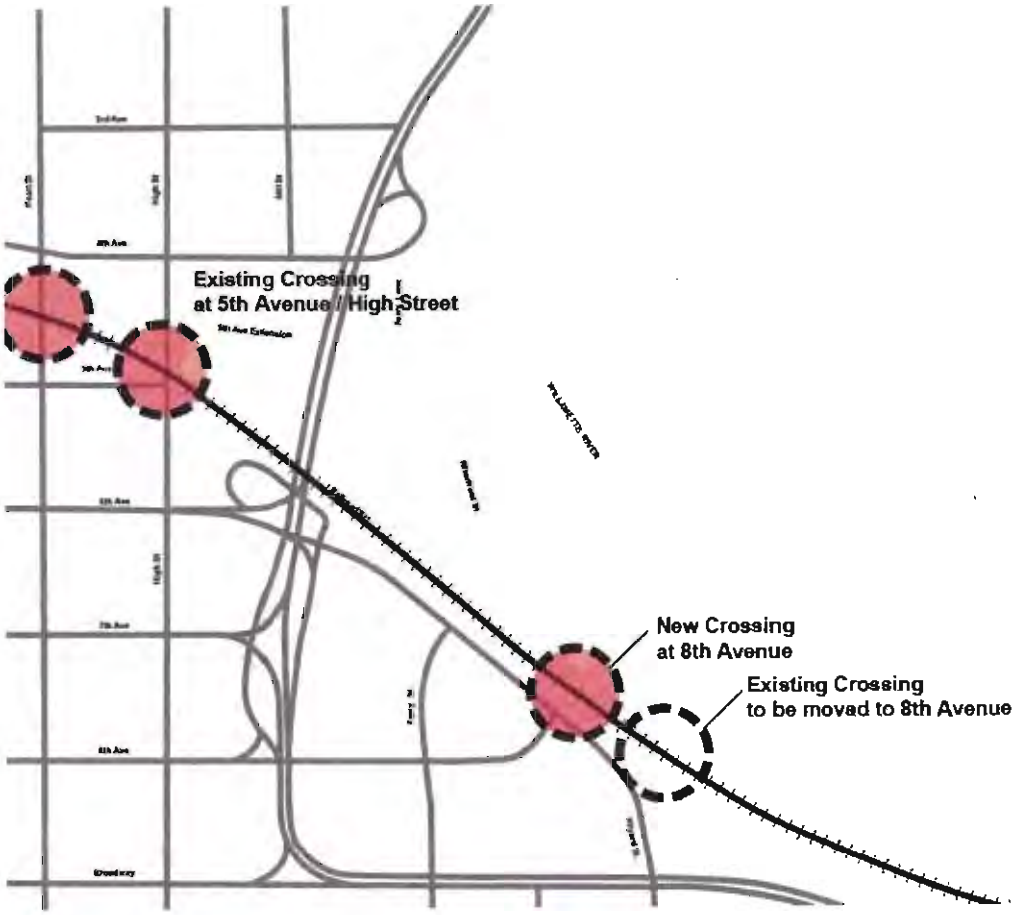


FIGURE 4-5:
RAILROAD CROSSINGS

RAILROAD CROSSINGS

The Courthouse District Plan anticipated the relocation of the existing at-grade crossing located at Hilyard Street to align with the Great Street of 8th Avenue. The plan assumes this relocation will occur to make a safe and direct connection across the railroad tracks to the riverfront. The existing crossings at Pearl Street and High Street will remain. The intersection of the 5th Avenue extension and High Street must be no closer than 100' from the track crossing to meet safety requirements. The quad gate security measures required to create a Quiet Zone in Eugene are technically feasible at the existing and relocated crossings.

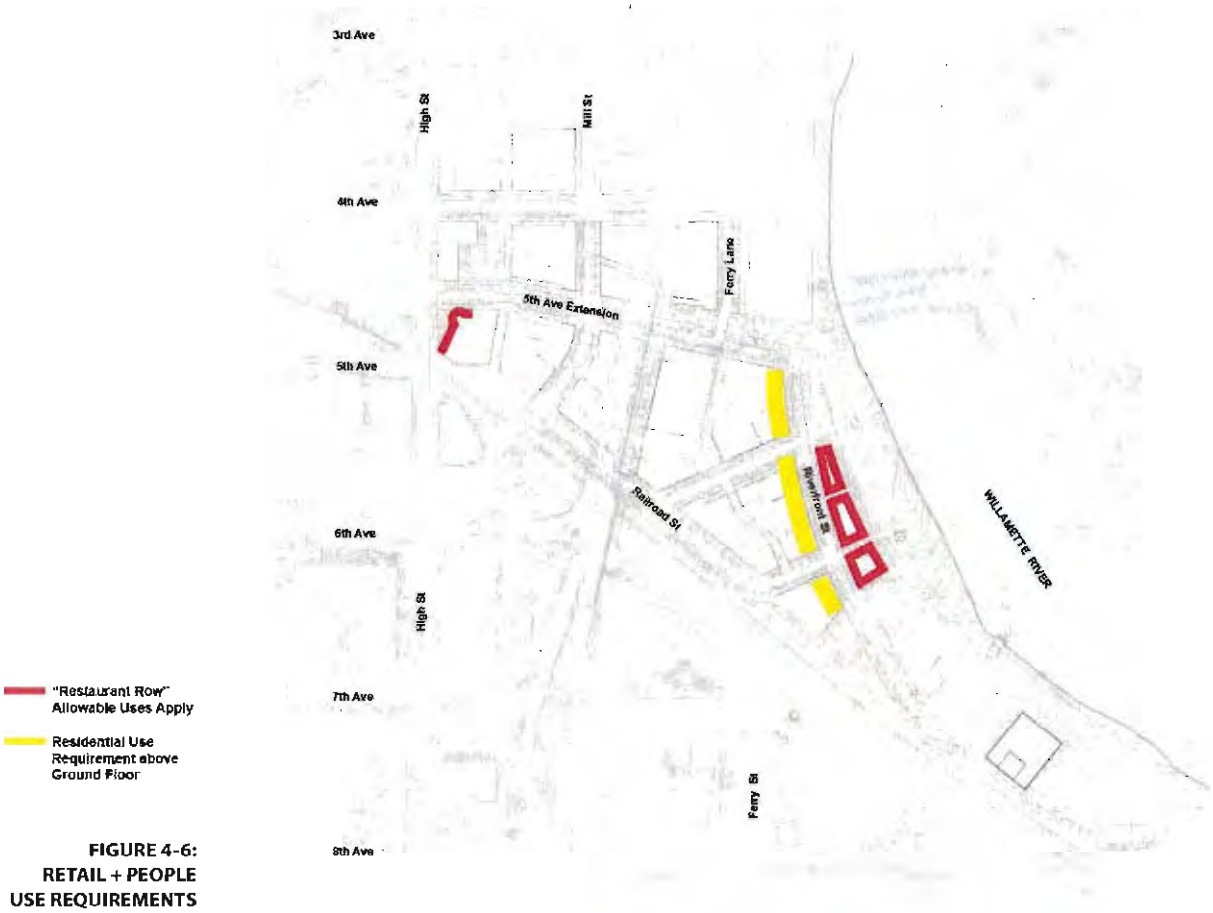


FIGURE 4-6: RETAIL + PEOPLE USE REQUIREMENTS

RETAIL + PEOPLE: USE REQUIREMENTS

Though the vision is primarily described by form-based guidelines, there are two zones with use requirements. To succeed on this site, retail will likely need to be tightly focused, facing or adjacent to other retail, and located in public, desirable locations. Thus, two areas have been identified with a retail/ commercial use requirement: Restaurant Row, where spaces should take advantage of their riverfront location while also addressing Riverfront Street, and at the corner of High and the extension of 5th Avenue. This use and the orientation of Train Whistle Plaza work together to guide pedestrians to the riverfront and complement adjacent amenities.

A residential use requirement above the ground floor on the west side of Riverfront Street ensures that the riverfront is a people place with a critical mass of residents to support good placemaking. This requirement puts "eyes on the park" and encourages the development of a new community that is active by day and night.

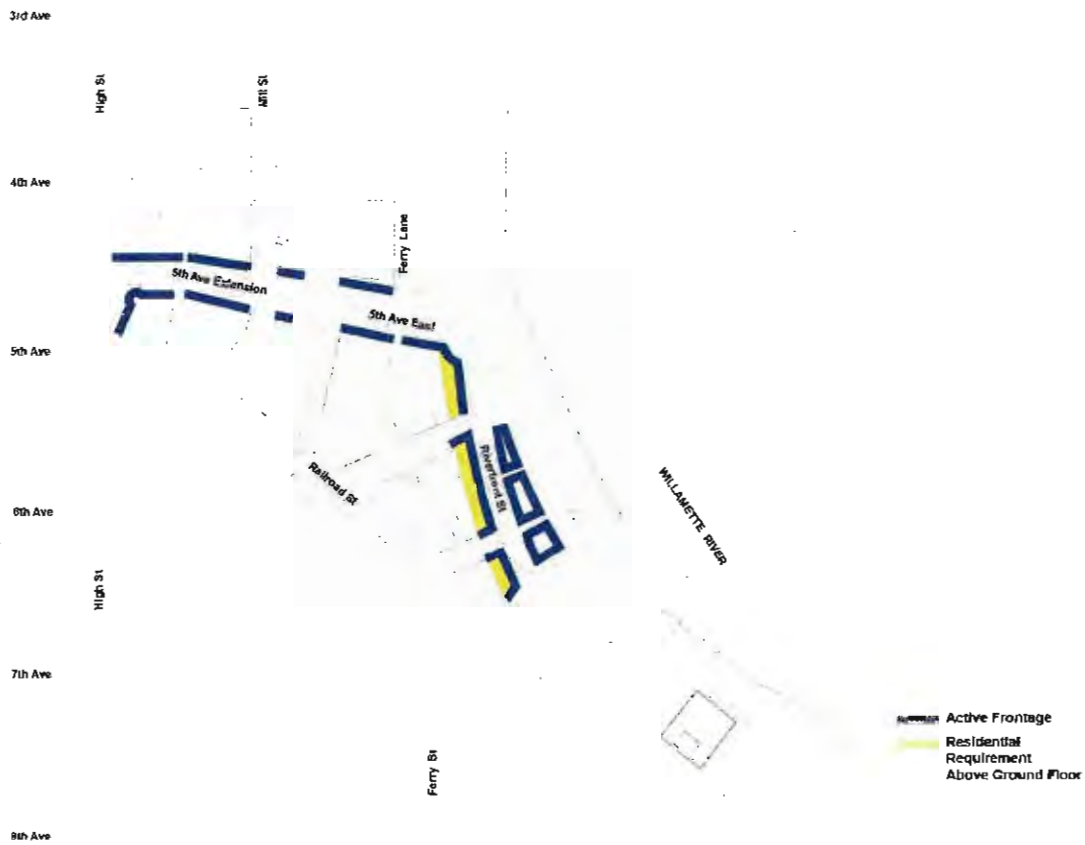


FIGURE 4-7:
ACTIVE FRONTAGE

ACTIVE FRONTAGE

Active frontages are required to have a high degree of ground-level transparency, entries facing the street, minimal driveway curbcuts, and active engagement with the sidewalk. Certain locations of the plan are required to have active frontage in order to support an enlivened public realm.

The frequency of entries and relationship to the street that are often associated with residential uses can do many things to support an active frontage. The decision to require residential uses above the ground floor along the west side of Riverfront Street reflects the desire to create a people-populated place with 24-hour activity.

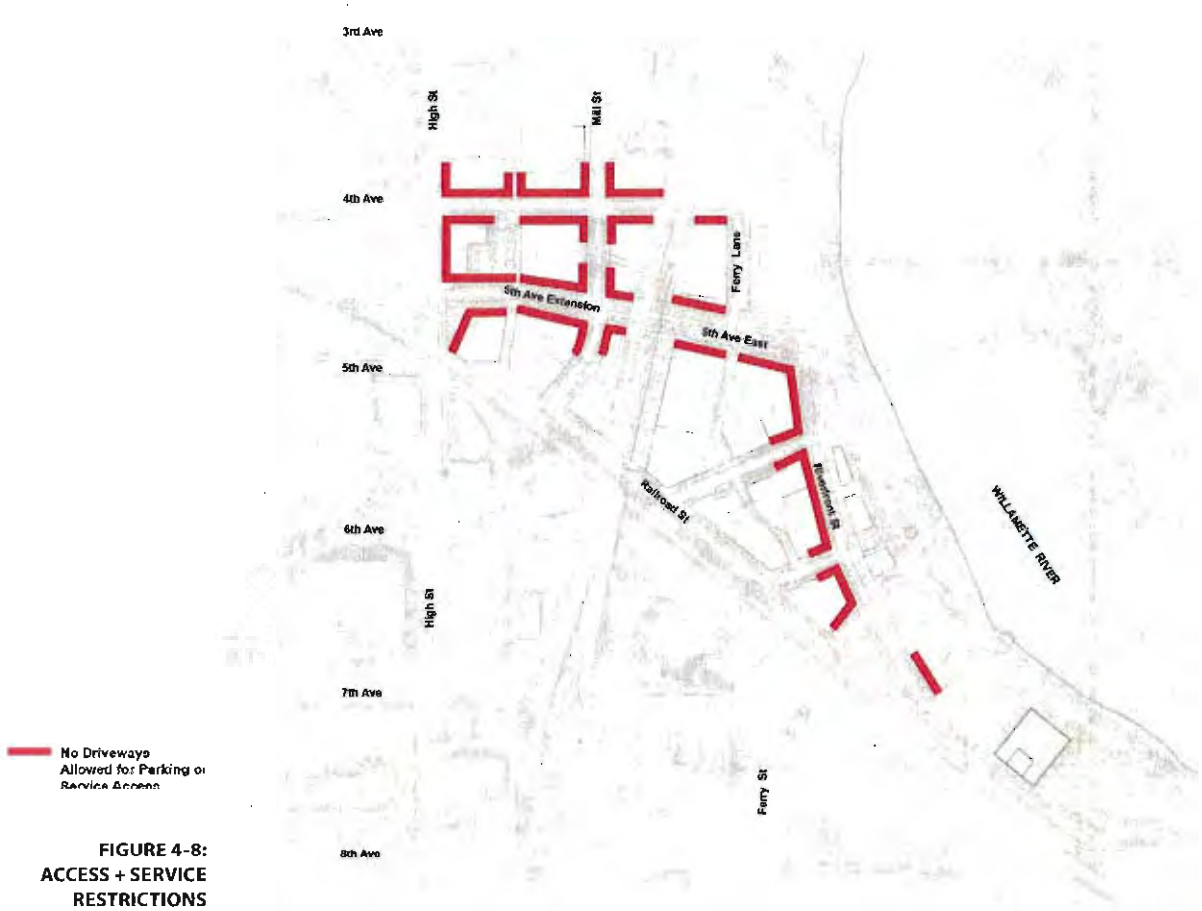


FIGURE 4-8: ACCESS + SERVICE RESTRICTIONS

ACCESS + SERVICE RESTRICTIONS

To support the quality of the public realm and a pedestrian-oriented streetscape, driveway access is restricted along certain street frontages. Parking and service access should occur either from side streets or from mid-block service alleys, courts or lanes.

By directing service access and loading to secondary streets and alleyways, the main street is freed to safely accommodate multimodal traffic and maintain storefront visibility. This design guideline does not impede service access to any parcel or prescribe specific locations for access. The secondary streets, service alleys and on-street delivery parking can adequately serve the redevelopment blocks.

FIGURE 4-9: PEDESTRIAN + BICYCLE CONNECTIONS

PEDESTRIAN + BICYCLE CONNECTIONS

This plan advances the City's stated goal of developing 8th Avenue as a primary bicycle and pedestrian route to the river and proposes a continuous, improved length of Riverfront Trail along the Downtown Riverfront.

All new streets will be multi-modal and pedestrian- and bike-friendly. New streets will integrate bicycle and vehicular traffic in shared, clearly marked lanes while also providing on-street parallel parking to buffer pedestrians and serve businesses. Clear connections will be made to existing designated bike routes.

A network of sidewalks and paths will accompany the new street system on the riverfront site. Pedestrian paths will occur on both sides of all streets and connect with the enhanced configuration of the existing riverfront path and bicycle route system. A boardwalk along Restaurant Row will provide opportunities for outdoor dining and activities overlooking the river and public open space. This boardwalk will be grade-separated from the continuous Riverbank Trail to facilitate safe, concurrent use by multiple modes.

FIGURE 4-10:
LOCAL TRANSIT

LOCAL TRANSIT

Connect to Existing Service: This diagram shows how existing bus service might be rerouted to serve the site. Currently, the Breeze turns down Pearl Street from 5th Avenue before turning along 7th Avenue to the viaduct. It would be possible to serve the site by looping the bus along 5th and 8th Avenues. The Breeze offers valuable connections with Downtown and the University and to the Coburg Road corridor.

Create a "Great Loop" with Public Transit: The creation of a new public transit service such as a streetcar or trolley service that connects Downtown with the riverfront and surrounding neighborhoods was popular during conversations with the community. This additional transportation alternative would provide additional access and visibility to the riverfront site.

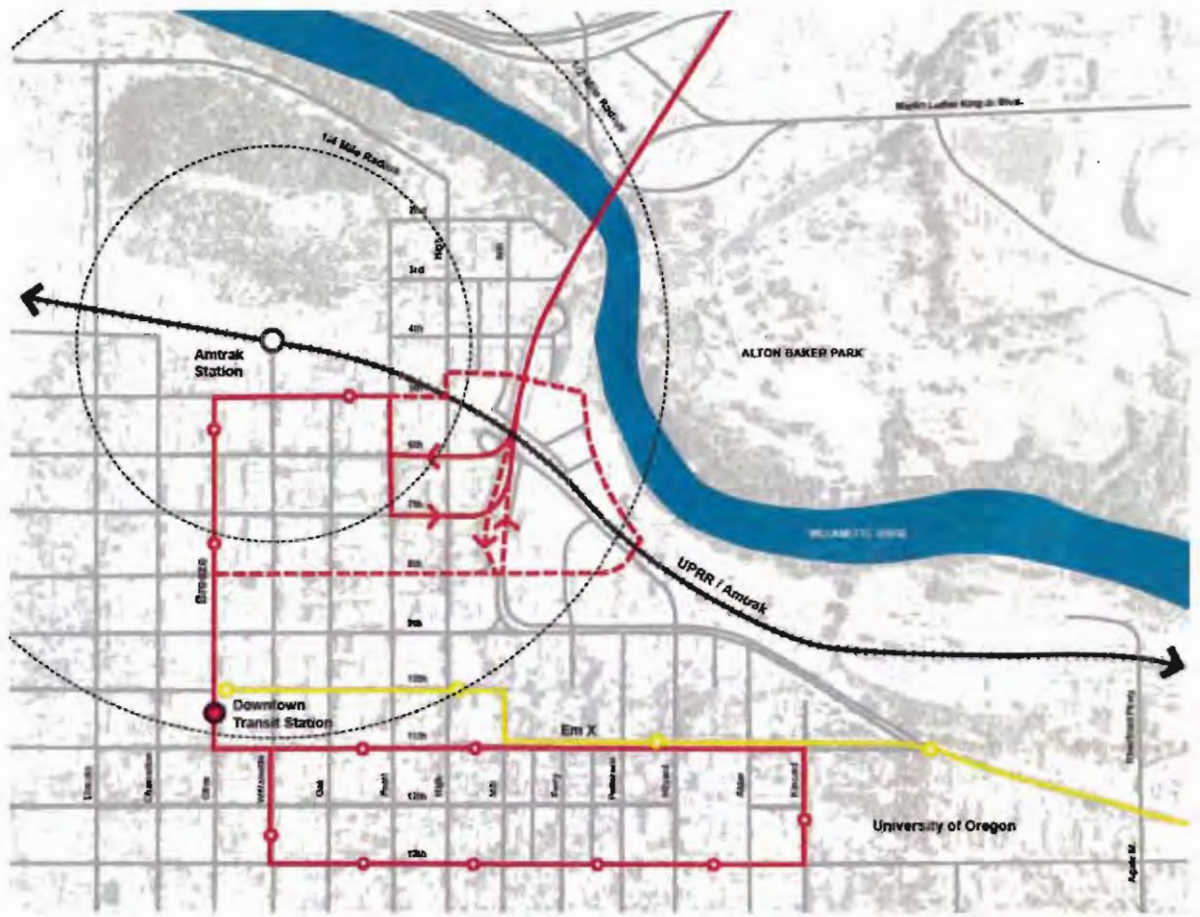


FIGURE 4-11:
REGIONAL + COMMUNITY TRANSIT

REGIONAL + COMMUNITY TRANSIT

Most of the EWEB property is within a 10-minute walking distance (equivalent to about a 1/2-mile) of the Eugene/Springfield Amtrak Station, which is a candidate for the improved Cascadia high-speed rail service. The property is also within reach of Lane Transit District's EmX Bus Rapid Transit service as well as the Breeze line serving the University, Downtown and areas north of the river.

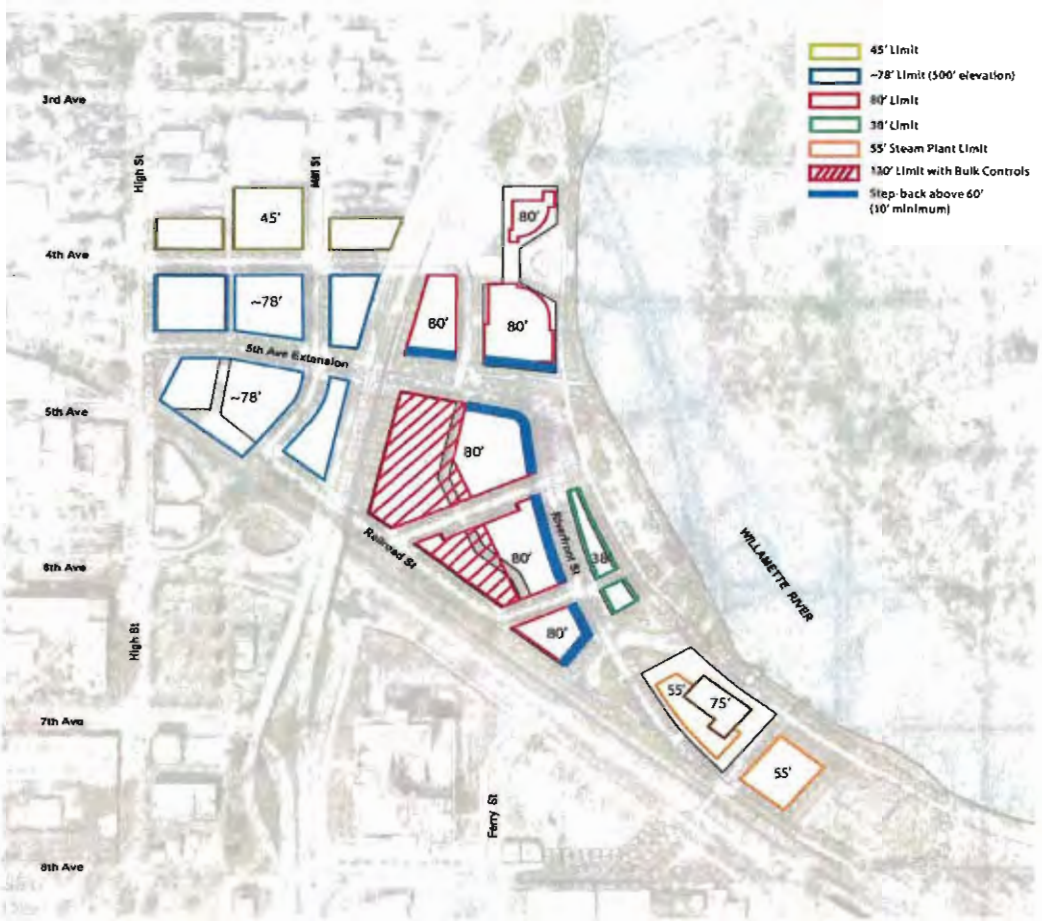


FIGURE 4-12: HEIGHT MAXIMUMS

HEIGHT MAXIMUMS

West of the Viaduct

The Whiteaker Area Plan and Skinner Butte Height Limitation zoning provide existing height restrictions in this area, and the plan proposals are consistent with these limits. To the north of 4th Avenue, a 45' height limit exists and is proposed for the EWEB properties guided by this master plan. To the south of 4th Avenue, where the average elevation on the EWEB property is 422', a 500' elevation limit already exists (this is noted as a ~78' limit).

Central Blocks / Restaurant Row / EWEB Headquarters

The height limits in the Central Blocks respond to known building type requirements and current construction type limits. Much of this sub-area is governed by an 80' height limit.

Along Riverfront Avenue, step-backs are required above 60' and a 120' limit exists for parcels adjacent to the viaduct. The height limit for Restaurant Row is two stories or a 38' maximum with a green roof/habitat requirement where rooftops are unoccupied.

Steam Plant Area

The existing Steam Plant provides the 55' height limit for any new construction in this zone. This 55' limit also applies to addition beyond the Steam Plant's existing footprint. Additions to the existing structure can reach 75' with a minimum of a 5' step-back at the roof of the existing structure (55').

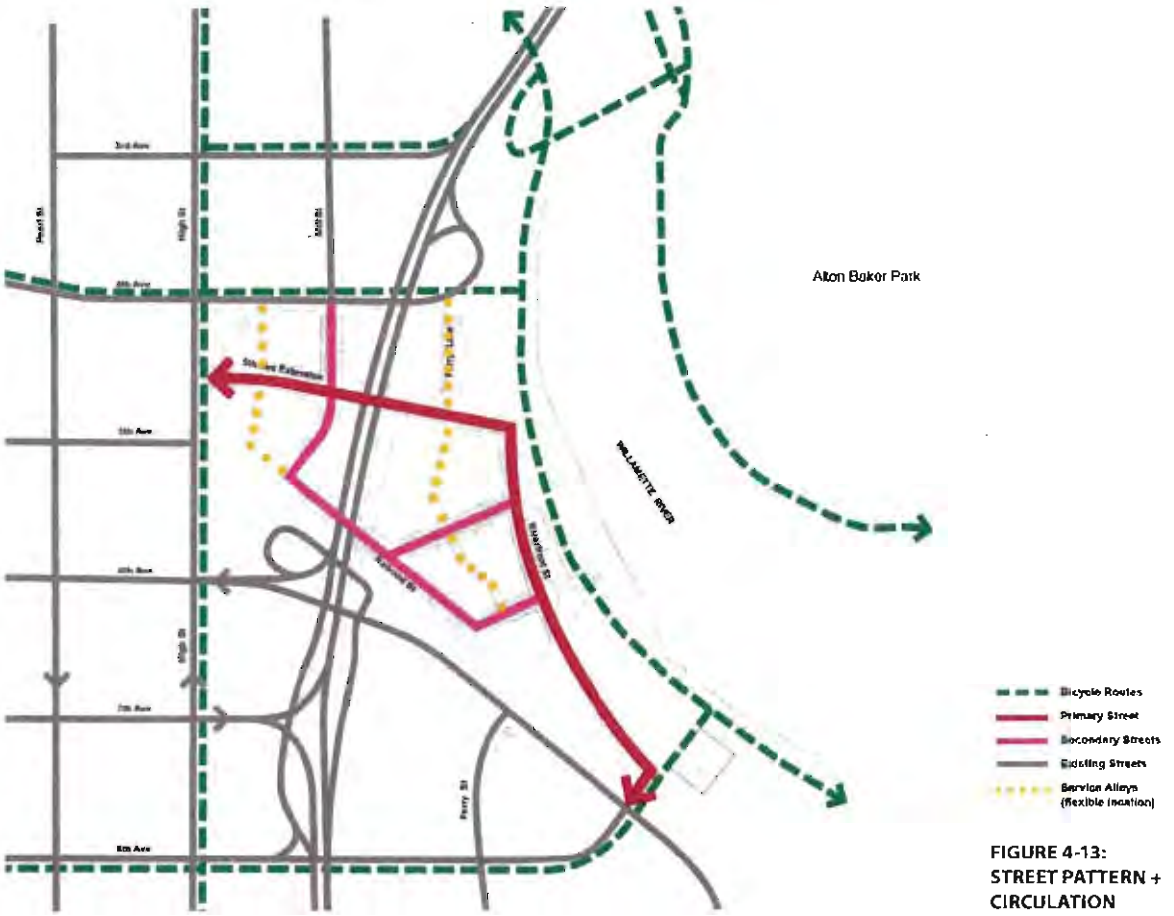


FIGURE 4-13:
STREET PATTERN + CIRCULATION

STREET PATTERN + CIRCULATION

The street pattern extends the City's "Great Street" concept to the riverfront and builds on existing street infrastructure where possible. The new primary street connects with an extension of 5th Avenue and with 8th Avenue to form a "Great Loop" that provides public access to the center of the riverfront site. Secondary streets provide redundant access and allow the primary festival street to be closed to vehicular traffic during events. All streets contribute to the plan's on-street parking strategy. Street standards establish the proposed composition, overall width, lanes, landscaping, edges and intersections for primary streets and paths.

New connections to existing streets are made at High and Mill Streets, and 4th, 6th and 8th Avenues. New connections to existing bike paths are in alignment with 8th Avenue and the Riverbank Trail system. Mid-block alley locations are flexible; the design intent is to provide block permeability, pedestrian routes, and service access (trash, recycling, etc.) away from the building's public face.

The plan indicates the development of a green street network that is multi-modal, accessible, and pedestrian-friendly. Streets are designed to integrate multiple modes of transportation and to prioritize the pedestrian and bicycle. Streets also include parallel and perpendicular parking spaces that support the retail uses.

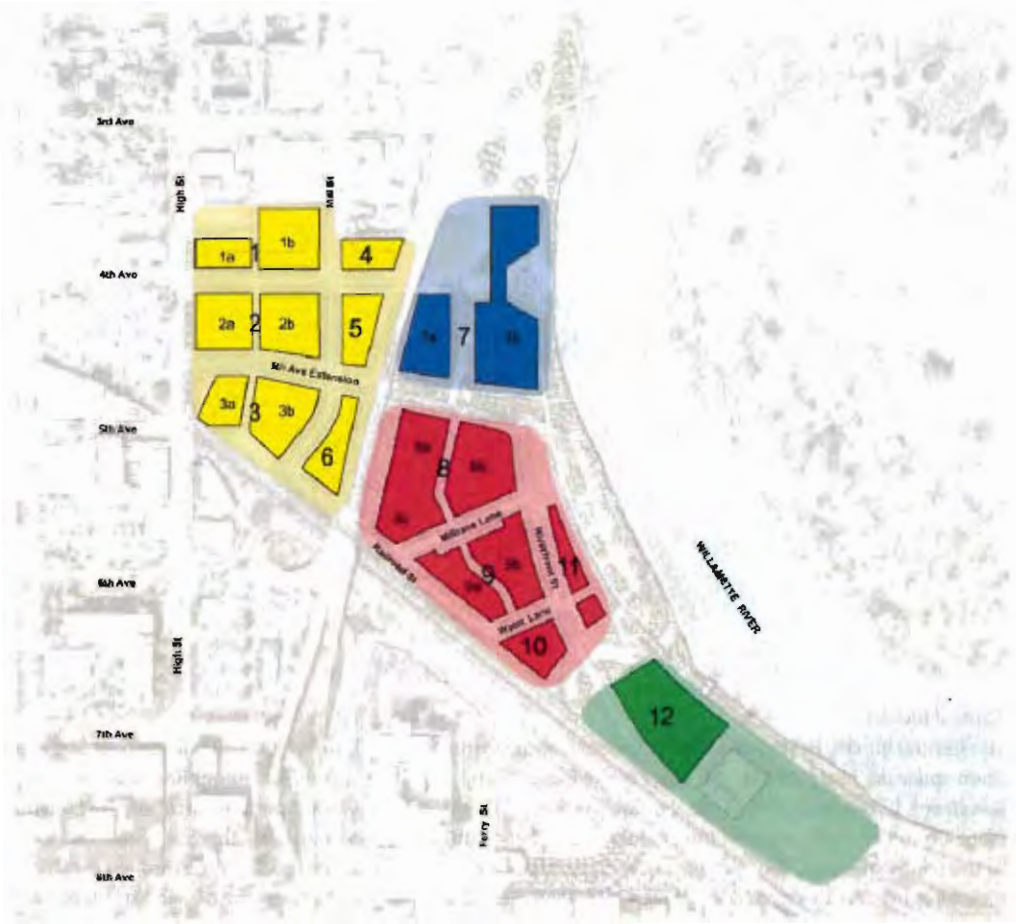


FIGURE 4-14: SUB- AREAS

SUB-AREA DESCRIPTIONS

West of the Viaduct

The EWEB property to the west of the viaduct is immediately adjacent to the historic Skinner Butte neighborhood and the vibrant retail destination of 5th Street Public Market and the 5th Avenue shops. The proposed scale of redevelopment responds to this surrounding residential character and makes strong connections to popular areas. Existing public streets (Mill and High Streets and 4th Avenue) provide access to some of these blocks.

Design guidelines for this area are set to reinforce the strong residential and mixed-use character of the 5th Avenue and Skinner Butte neighborhoods, with frequent entries marked by awnings, porches, stoops and landscaping. All buildings are oriented to the public street. Standards are also set to reduce the impact of curb cuts and driveways and to support the pedestrian experience of the public realm with setbacks, build-to lines and facade articulation as necessary.

EWEB Headquarters

The EWEB Headquarters provides an ideal location for office or institutional uses in a location that provides dramatic views of the Willamette River. These buildings frame a view of the river and provide a terminus to 4th Avenue at the EWEB fountain. Redevelopment recommendations for this area are consistent with the existing character and stated community goals.

Height limits, build-to requirements and setbacks are established for this area to allow office development, to buffer parking uses, and to match the proposed architectural character along 5th Avenue and Riverfront Streets. The guidelines also recognize the site across from the existing EWEB Headquarters Building as a potential location for new office use, mixed-use, or wrapped parking that could serve the EWEB site and eliminate the need for the existing surface parking lots on 4th Avenue.

Central Blocks

The Central Blocks, Restaurant Row and associated riverfront open space are proposed for the heart of the Downtown Riverfront. Bounded by the EWEB Headquarters and Steam Plant along the riverfront, and the viaduct and railroad corridor to the south and west, this area proposes three blocks of redevelopment with views to the Willamette River. Restaurant Row provides public amenities to the riverfront path system and proposed open space, and requires greenroof habitat where rooftops are unoccupied. The required uses along both sides of Riverfront Street provide "eyes on the park," generate a sense of shared concern for the public open space, and encourage vitality in this area by day and night.

Building massing and street composition support pedestrian activity, active streets and spatial definition that reinforce this unique riverfront setting. Buildings are oriented to the street. Other guidelines are set to reduce the impact of service driveways along Riverfront Street. Building step-backs are established to support the character of the public realm and maintain solar access to open space and public amenities.

High-Density Opportunity Sites

On the high-density opportunity sites, guidelines for the Central Blocks are set to promote pedestrian activity, support community vitality and resilience, and to allow for the development of a vibrant neighborhood. Buildings are oriented to the street. Access to off-street parking and loading is allowed. Building step-backs are established to support the pedestrian-oriented character of the area. Bulk controls are established to maintain views and restrict the visual impact of taller structures.

Restaurant Row

Located between Riverfront Street and the riverfront open space, Restaurant Row has the potential to be the most "active, vibrant people place" on the Downtown Riverfront. It includes a boardwalk that stretches the length of the riverfront's primary open space. Guidelines are established with the purpose of enhancing the public experience of the river. The deliberately small and permeable parcels of Restaurant Row provide a transition from the more urban to the more natural landscape. Urban habitat is provided on rooftops and terraces.

Steam Plant

The Steam Plant has the potential to create a celebrated riverfront destination with deep connections to the site's industrial history. The character of the original 1930s structure will be maintained with the contemporary reuse of this building. This area includes the EWEB substation, the former MGP site, and a required connection to the Riverbank Trail on axis with 8th Avenue. The plan re-purposes the former MGP site as public open space—a "pollinator prairie"—that terminates the view corridor of 8th Avenue offers a dramatic site for river overlook and ecological interpretation. EWEB will maintain ownership of this parcel and the substation.

Guidelines are set to both protect the architectural character of the original Steam Plant structure and its concrete-frame addition, and to allow for its adaptive reuse and the construction of an addition.

B. DESIGN GUIDELINES BY SUB-AREA

West of the Viaduct

BLOCKS: 1a, 1b, 2a, 2b, 3a, 3b, 4, 5 & 6

HEIGHT MAXIMUMS
North of 4th Avenue: 4 stories, 45 ft. maximum
Elsewhere: 500 ft. elevation above sea level (~76-80 ft.), set by Skinner Butte Height Restriction

BUILD-TO LINES
Required to match setback requirements.

SETBACKS
3-10 ft. along 5th Avenue, except within 30 ft. of a street intersection.

STEP-BACKS
None required.

USES + CONSTRUCTION REQUIREMENTS
Refer to Use Guidelines. LEED-NC certification standard.

GROUND LEVEL
Active frontage facing 5th Avenue. Canopies, balconies, awnings or other overhead elements should occur at regular intervals to identify retail, and/or mark entries and building lobbies. Porches, stoops, and multiple entries should occur where residential uses occur.

RECOMMENDATIONS
Multi-family residential, mixed-use, office, community services and screened parking to support uses. Tall retail storefronts should be oriented to the street and include a high degree of transparency. 'Bay window' encroachments of 5' maximum depth allowed above 12 ft., 14 ft. maximum width.

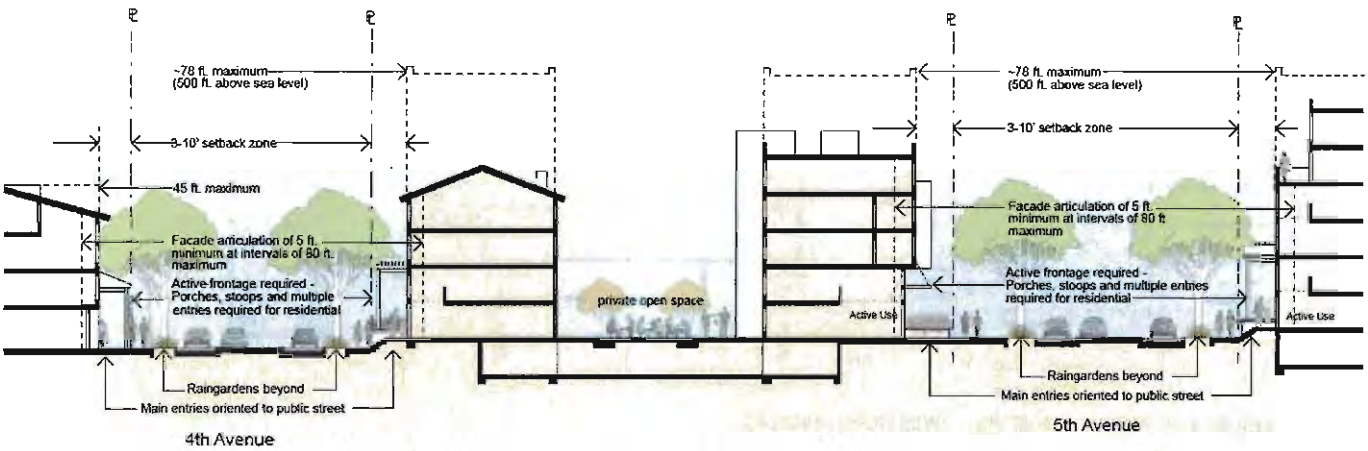


FIGURE 4-1S: DESIGN GUIDELINES - WEST OF THE VIADUCT

EWEB Headquarters

BLOCKS: 7a & 7b (EWEB Headquarters), references to 8a and 8b

HEIGHT MAXIMUMS
- 80 ft. with 10' minimum step-back above 60'
- 14 ft. minimum ground floor height, west side of Riverfront Street, mezzanine allowed

BUILD-TO LINES
Required along 5th Avenue

SETBACKS
None required

STEP-BACKS
10 ft. minimum required above 60 ft. along 5th Avenue

USES + CONSTRUCTION REQUIREMENTS
Refer to Use Guidelines. LEED-NC certification standard. Residential requirement above ground floor on block 8b.

GROUND LEVEL
Active frontage facing 5th Avenue and Riverfront Streets. Canopies, balconies, awnings or other overhead elements should occur at regular intervals to identify retail, and/or mark entries and building lobbies.

RECOMMENDATIONS
Office, mixed-use and parking. Storefronts should be oriented to the street and include a high degree of transparency. Double-height glazing for new construction facing Riverfront Street / 5th Avenue. 'Bay window' encroachments of 5' maximum depth allowed above 12 ft., 14 ft. maximum width.

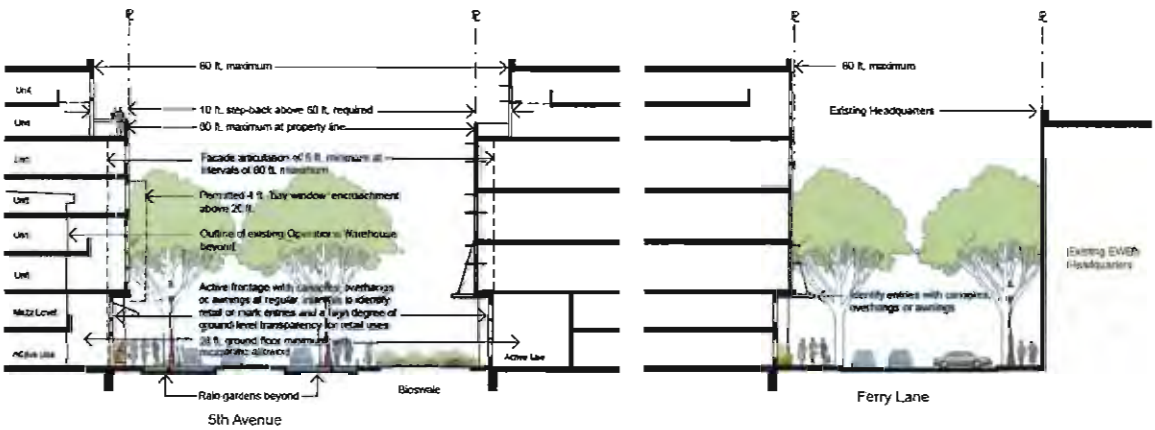


FIGURE 4-16: DESIGN GUIDELINES - EWEB HEADQUARTERS

Central Blocks

BLOCKS: 8a (Operations Warehouse Bldg), 8b, 8c, 9a, 9b & 10

HEIGHT MAXIMUMS
- 80 ft. with 10' minimum step-back above 60' height
- 11 stories or 120 ft. where noted, bulk controls apply
- 14 ft. minimum ground floor height, west side of Riverfront Street, mezzanine allowed

STEP-BACKS
10 ft. minimum required above 60 ft. along Riverfront Street

BUILDING ARTICULATION
Pedestrian pass-throughs required through Restaurant Row along View Corridors, connecting Riverfront Street to public open space.

USES + CONSTRUCTION REQUIREMENTS
Refer to Use Guidelines: Residential requirement above ground floor on west side of Riverfront Street and Restaurant Row allowable uses. LEED-NC certification standard. Habitat / greenroof requirement where roof unoccupied on Restaurant Row.

GROUND LEVEL
Active frontage required along Riverfront Street. Canopies, overhangs, awnings or other overhead elements should occur at regular intervals to identify retail and/or mark entries and lobbies. Storefronts, lobbies, common areas and entries to be oriented to the street and architecturally expressed using high quality materials, including a high degree of transparent glazing (clear glass). Multiple entries required where residential uses occur.

RECOMMENDATIONS
Multi-family residential, mixed-use, office, community services and internal-block parking to support uses. Porches, stoops and multiple entries are encouraged. Build to property line encouraged. Setbacks: 5 ft. maximum with residential development along Millrace, Water and Railroad Streets (applies to 85% of total building facade). 'Bay window' encroachments of 5' maximum depth allowed above 12 ft., 14 ft. maximum width.

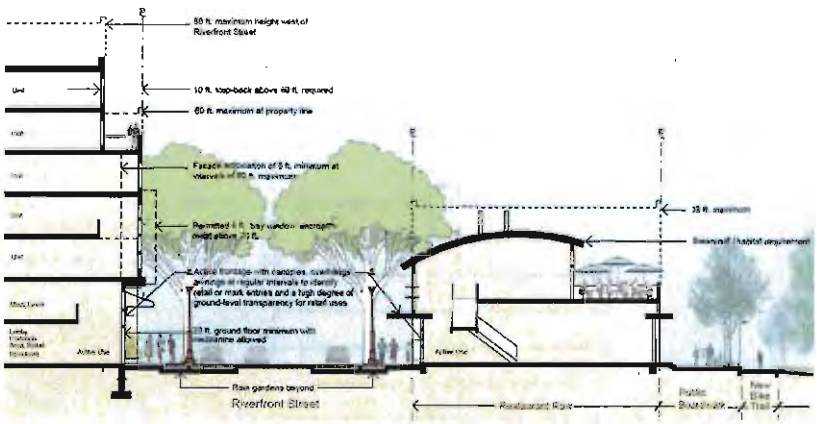


FIGURE 4-17: DESIGN GUIDELINES - CENTRAL BLOCKS

Central Blocks - High-Density Opportunity Sites

BLOCKS: 8a (Operations Warehouse Bldg), 8b, 8c, 9a, 9b & 10

HEIGHT MAXIMUMS
- 80 ft. with 10' minimum step-back above 60' height
- 11 stories or 120 ft. where noted, bulk controls apply, with 10' minimum step-back above 40' height

BULK CONTROLS
- Maximum floor plate of 8,000 sq. ft.
- Maximum plan dimension of 110 ft.
- Maximum diagonal of 140 ft.
- Minimum distance between towers to be 120 ft.

STEP-BACKS
10 ft. minimum required at 60 ft.

USES + CONSTRUCTION REQUIREMENTS
Refer to Use Guidelines. LEED-NC certification standard.

GROUND LEVEL
Active frontage required along Riverfront Street. Canopies, overhangs, awnings or other overhead elements should occur at regular intervals to mark entries and building lobbies. Storefronts, lobbies, common areas and entries to be oriented to the street. Multiple entries required where residential uses occur.

RECOMMENDATIONS
Multi-family residential, mixed-use, office, community services and internal-block parking to support uses. Porches, stoops and multiple entries should occur where residential uses occur. 'Bay window' encroachments of 5' maximum depth allowed above 12 ft., 14 ft. maximum width.

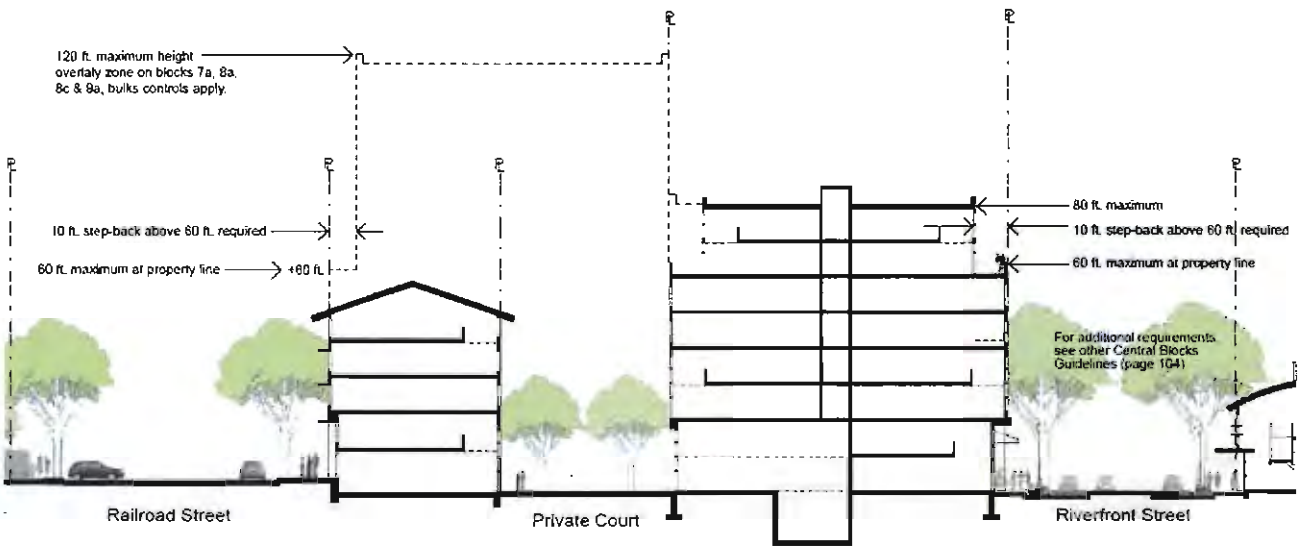


FIGURE 4-18: DESIGN GUIDELINES - CENTRAL BLOCKS HIGH-DENSITY OPPORTUNITY SITES

Restaurant Row

BLOCKS: 11

HEIGHT MAXIMUMS
- 30 ft. height limit
- 38 ft. height limit with residential uses above ground floor
- 14 ft. minimum ground-floor height
- Three-story maximum

BUILD-TO LINES
Required along Riverfront Street and public boardwalk

BUILDING ARTICULATION
Two pedestrian pass-throughs of 20 ft. minimum width each, align with View Corridors.

USES + CONSTRUCTION REQUIREMENTS
Refer to Use Guidelines. Greenroof requirement where rooftops unoccupied. LEED-NC certification standard.

GROUND LEVEL
Active frontage along Riverfront Street. Canopies, awnings or other overhead elements required at regular intervals to identify retail and mark entries. Storefronts, lobbies, common areas to include a high degree of transparent glazing (clear glass).

RECOMMENDATIONS
Restaurant, small retail, and public amenities. Outdoor seating along boardwalk, pass-throughs and Riverfront Street rooftop terraces. Canopies, overhangs, awnings and other elements at regular intervals to mark entries and building lobbies. Double-height storefronts oriented to the street with a high degree of transparency (clear glass). Facing the river to allow for outdoor terraces.

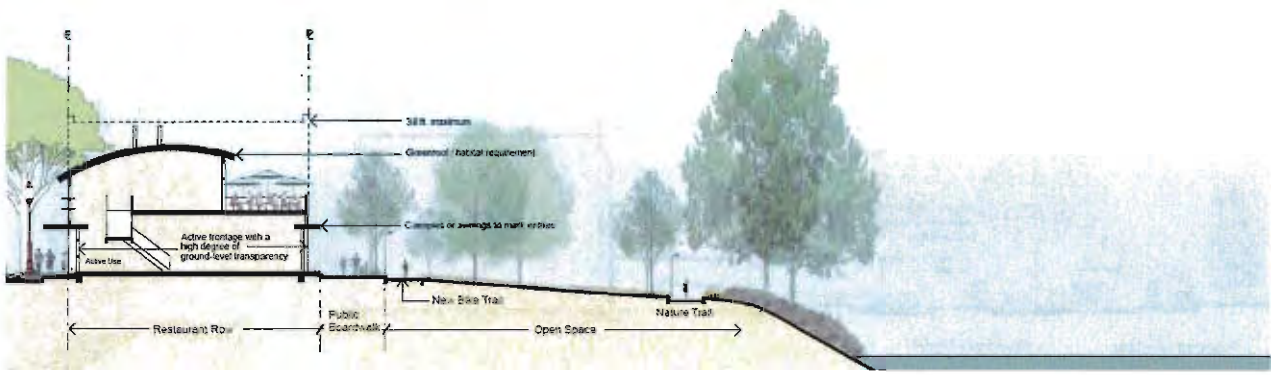


FIGURE 4-19: DESIGN GUIDELINES - RESTAURANT ROW

Steam Plant

BLOCKS: 12

HEIGHT MAXIMUMS
- 55 ft. for new construction
- Vertical additions within existing footprint can reach 75 ft.

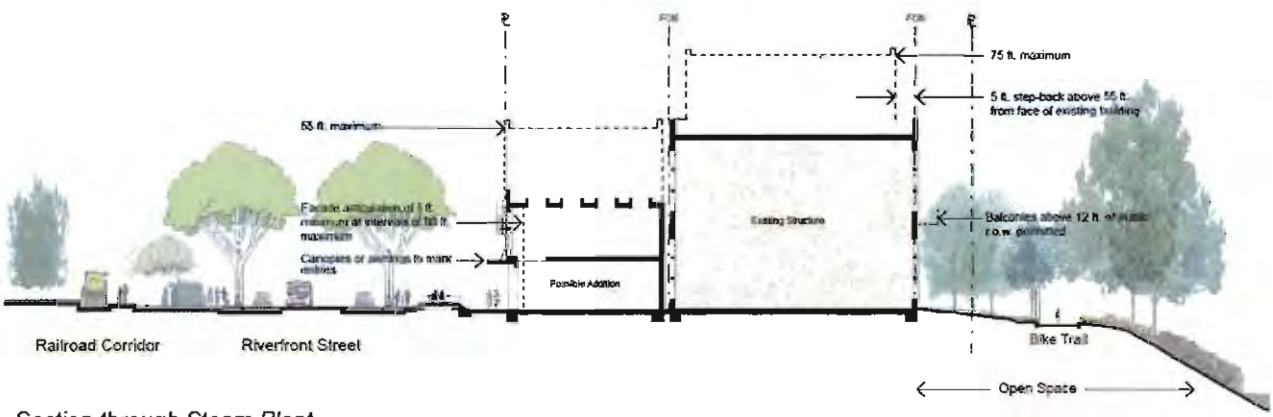
STEP-BACKS
5 ft. minimum required above 55 ft. with addition to existing structure.

USES + CONSTRUCTION REQUIREMENTS
Refer to Use Guidelines. LEED-NC certification standard.

GROUND LEVEL
Active frontage along Riverfront Street. Canopies, awnings or other overhead elements required at regular intervals to identify retail and mark entries. Storefronts, lobbies, common areas to include a high degree of transparent glazing (clear glass).

ARCHITECTURAL CHARACTER
Maintain architectural character of the original Steam Plant and concrete-frame addition with adaptive re-use and retrofit. Cantilevered or suspended balconies allowed. With new construction, façade articulation of 5 ft. minimum at intervals of 80 ft. maximum.

RECOMMENDATIONS
Commercial, institutional, multi-family residential mixed-use, community services and hospitality. Ground level and roof terraces allowed. Cantilevered or suspended balconies allowed above existing main level.



Section through Steam Plant

FIGURE 4-20: DESIGN GUIDELINES - STEAM PLANT

C. PUBLIC REALM

The development of new riverfront park space and a high-quality public realm are fundamental elements of the vision for the Downtown Riverfront's redevelopment.

OVERALL OBJECTIVES

- Provide a sense of identity that reflects, respects and builds on the unique history of this site
- Provide flexible spaces that maximize programming opportunities and create a "people place" on the riverfront
- Provide varied experiences at a variety of scales
- Enhance riparian habitat and develop new riverfront open space
- Integrate and harmonize the built and natural environments
- Include educational aspects and demonstrate dynamic natural systems
- Maximize universal access to parks and open space
- Integrate sustainable principles into the open space design
- Improve river-edge connectivity and visual connections to the water
- Incorporate the Willamette's natural resources and history into design
- Create biodiversity with a variety of habitat and open space
- Provide strong connections among parks, open space, and nearby neighborhoods
- Provide strong linkages that connect parks and open space using pathways, sidewalks, and pedestrian routes
- Emphasize streets as public, pedestrian-oriented spaces
- Ensure parks and open space include all-season interest, activities and functions
- Embrace sustainable programs and education in parks and open space

OPEN SPACE PRINCIPLES

Connectivity and permeability, diversity, and sustainability are also defining principles of the open space design. The public realm and open space have been designed to integrate with the river landscape, surrounding community, and urban form. Through project implementation these principles should remain a primary focus.

Connectivity + Permeability

Streets, alleys, paths and accessways provide a high degree of permeability for pedestrians, cyclists, and vehicles alike. These rights-of-way also provide access to natural light, fresh air, and circulation alternatives. When combined with specific design elements, this network supports the development of an active, pedestrian-friendly environment. The intent is to provide numerous pedestrian options and encourage non-vehicular transportation within the riverfront district.

Diversity

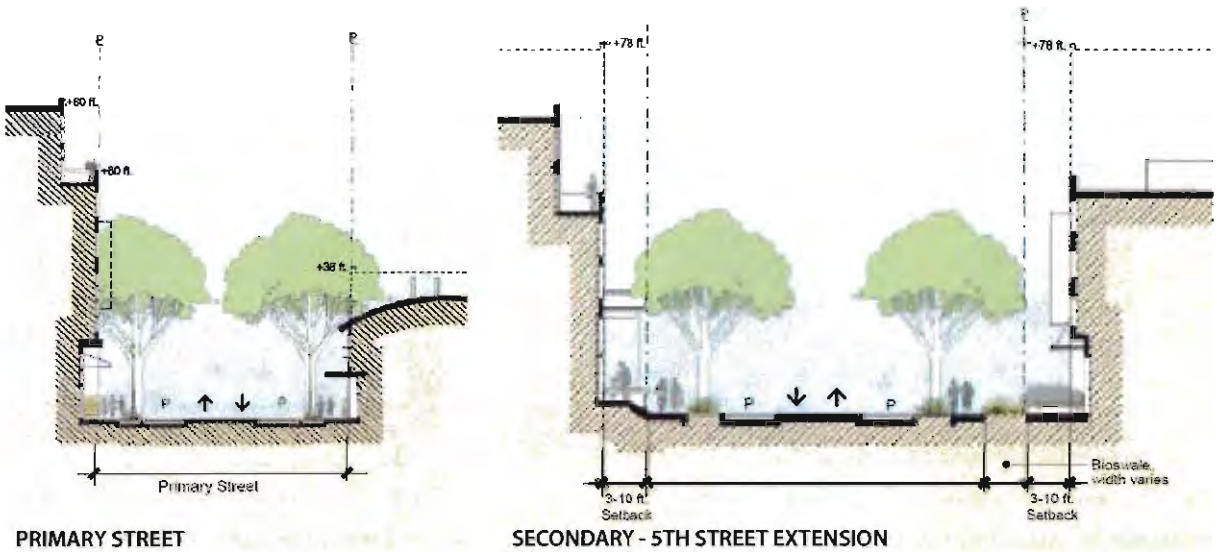
A variety of distinctive open spaces types, native plants, and streetscapes are proposed, and this diversity and character should inform the design of private open space as well. Connections should be made to the river context and site history. The intent is to generate a rich experience that blends from urban to naturalistic, and to offer a variety of spaces and activities in the public and private realms.

Sustainability

Sustainability is embedded in all aspects of the public realm and open space design. It is intended to guide the design, implementation, and approach to quality place-making for the riverfront property. Ecological initiatives focused on the Willamette River are an integral part of the public open space for this project. From bank enhancement to the creation of new habitat zones, the Willamette River environment informs the open space adjacent and connected to the river.

Stormwater management systems such as engineered wetlands, bioswales and rain gardens serve critical functions for the redevelopment and are primary landscape elements rather than added-on features. Various habitat zones will permeate the public realm and open space ensuring the environment is protected and enhanced. Urban agriculture, stormwater treatment, water conservation, material use, cost recovery, and waste are all aspects of sustainability that should be addressed in the design and implementation of the public realm and open space.

FIGURE 4-21: DESIGN GUIDELINES - OPEN SPACE TYPES



PRIMARY STREET

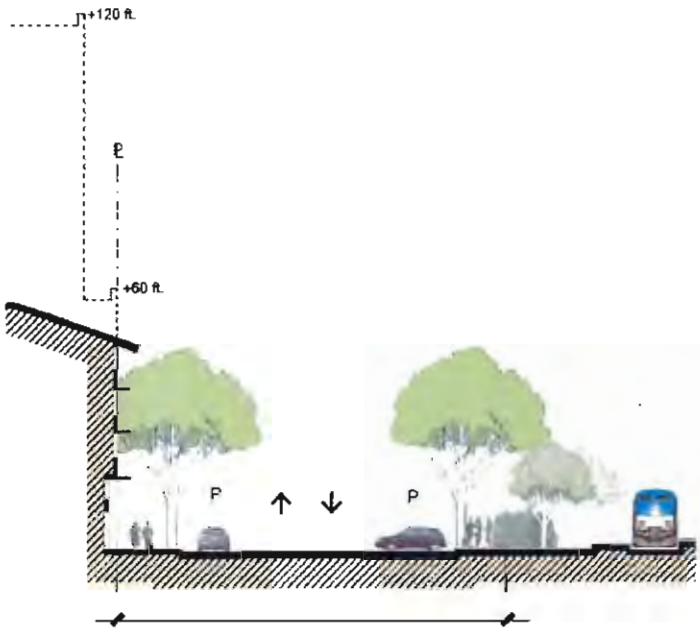
SECONDARY - 5TH STREET EXTENSION

FIGURE 4-22: STREET TYPES + STANDARDS

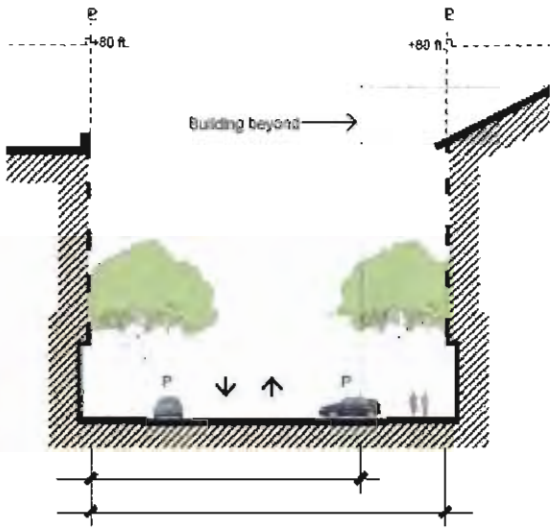
STREET TYPES

New public streets serving the riverfront property will provide public access to the riverfront, contribute critical functions to the landscape stormwater system, provide on-street parking for riverfront commercial activities, and connect what were once dead-end streets.

The new primary street connects 8th Avenue and the extension of 5th Avenue through the riverfront site. Secondary streets provide service access and on-street parking capacity, as well as redundant circulation through the site and connects to existing city streets.



SECONDARY - ADJACENT TO RAILROAD



SECONDARY - ALONG UTILITY EASEMENTS

Street Standards

All streets are envisions as local, low-speed, and public. All streets are two-way, with asphalt road surface and integrated bicycle traffic where dedicated bike lanes do not already exist.

All streets include two 10' drivelanes, an 8' parallel parking zone on each side, landscaped stormwater treatment (bioswales, bulbouts), and either 8' or 6' sidewalks on both sides, plus a 5' planting strip for bioswales and street trees on each side.

Corner bump-outs with rain gardens are included for traffic calming and stormwater collection. Permeable paving is recommended for the parallel parking areas.

OPEN SPACE PROGRAM

The variety of public open space types in the plan support a range of program opportunities on the riverfront site. These types include green infrastructure, parks, public plazas, and interpretive sites. Concepts related to the development of private open space are also noted. As a whole, the open space network contributes to the vision of the Downtown Riverfront as a vibrant, mixed-use, sustainable, and highly walkable community.

PARKS

Riverfront Park

The Riverfront Park has been designed to extend the entire length of the EWEB site to connect with greenways and other areas of open space and extend the riverfront character of the site into Downtown Eugene.

A significant aspect of the space will be the enhancement of the riverfront open space and habitat. This park will be comprised of predominantly native and non-invasive introduced species that require minimal supplemental water, fertilization or pest or disease-control. Where possible the existing riverbank will be cut back above the 100-year flood elevation to improve to the visual connection to the river and provide a more suitable grade for rehabilitation and management of invasive species. A series of river overlooks are planned along the top of bank. A naturalized meadow will allow for large public gatherings and also make an important ecological and educational contribution to the site. Pathways, low seating walls, and varied native plantings will create a series of naturalized garden spaces throughout the park.

A major pedestrian and bicycle path extends the length of the Riverfront Park and connects to the existing Riverbank Trail on either side of the EWEB property. This path is a combined pedestrian and cycling path through most of the park; however, along Restaurant Row the paths are separated for safety reasons and to support compatibility among multiple modes of transportation. There is also a more narrow nature trail along the top of bank, which creates a variety of seating opportunities along the edge of the river and connects to river overlooks. All pathways will be universally accessible.

Adventure Landscape

An adventure landscape is a natural play area connected to the Millpond Swale and located close to Restaurant Row, boardwalk, and Riverbank Trail. The park provides an opportunity for children to play near the edge of the Millpond Swale among a natural landscape.

Pollinator Park

This pollinator-friendly open space is situated near the southeast edge of the property, on a damaged site that must remain capped and can only be altered above-grade. Rather than re-purposing the entire site as a parking area or hardscape, a design concept presented the opportunity to create a man-made landform using excavated fill from on-site redevelopment and the reshaping of the riverbank. The site could also be planted as a naturalized meadow and include an accessible interpretive site. A viewing area would provide seating, weather protection, and interpretive signage. Raised garden beds or other urban agriculture could be located near the perimeter of this park.

GREEN INFRASTRUCTURE

Millpond Swale

The Millpond Swale is a major stormwater feature that provides park and open space opportunities adjacent to the Steam Plant and Restaurant Row. In addition to the stormwater treatment features, this park provides wetland habitat and biodiversity, interpretive and educational opportunities along the water edges, direct connections to the river, and a variety of seating and overlook features at the water's edge and through the park area. There is also a possibility that the Millrace could be connected to this water feature in the future. A series of weirs at bridge crossings could accommodate the elevation changes in the wetland to recirculate the water and cleanse it prior to its release into the river.

Green Streets

The green streets planned for the EWEB site are intended to provide a significant contribution to the open space character and site ecology. They are to be integrated with the parks and open space design, and they provide a functioning, vegetated edge to the new blocks. The streets will have a pedestrian focus with significant green infrastructure such as stormwater management, extensive planting, large trees, and flexibility for alternate uses such as café tables, shop displays, seating, markets, and public art. Streetscape materials and furnishings on the streets should be durable, locally available, cost effective, and have a sense of connection to this place.

5th Avenue Swale

The 5th Avenue Green Extension is the second major bioswale that serves as a stormwater management system as well as a landscape park and open space amenity. The swale extends from High Street to the river, gradually widening as it moves toward the riverfront. The park space will be planted with appropriate wetland and/or bioswale vegetation and will have a number of seating, overlook and interpretive opportunities along it. The 5th Avenue streetscape and the 5th Avenue Green Extension should be designed in concert and feel like one contiguous public space that draws pedestrians to the river from Downtown, provides a beautiful naturalized path, and serves a critical stormwater function. Maintaining service access to the south side of the EWEB Headquarters building is an important consideration to resolve with this element's design.

FIGURE 4-23: DESIGN GUIDELINES - OPEN SPACE PROGRAM

PUBLIC PLAZAS

There are a number of proposed urban plazas in the master plan that act as gateways, gathering places, landmark areas, or destinations on the site. Plaza spaces have been located in areas where activity, retail, sunlight, points of interest, and/or view corridors coincide.

5th Avenue Plaza

The 5th Avenue Plaza is intended to be one of the main gathering and meeting points for the downtown riverfront and for residents of Eugene. The plaza overlooks the riverfront open space, offers views to the water, and provides the northern terminus of Restaurant Row and the eastern terminus of 5th Avenue. The design allows for expansion of the plaza into the street when the Riverfront Street is closed to vehicles. Water features, seating and gathering opportunities, public art, and feature plantings are envisioned for this area. This plaza should also have the ability to accommodate temporary kiosks and carts during festivals and events. A strong visual connection to the Riverfront Park and a view corridor to the river is critical for the success of this significant public space.

RIPARIAN ZONE

Along the extent of the property, the existing riparian river edge will be enhanced as redevelopment occurs. This improvement and enhancement will provide significant habitat and ecological connectivity that will lead to a better environmental balance along this constrained river edge. Within the riparian zone, there will be limited direct access to the water's edge. Trails, structures, and any built elements within this zone will be sensitive to existing vegetation, site ecology and ecological footprint. Only native trees, shrubs, ground cover and herbaceous plant material will be utilized with the enhancement of the riparian zone. The application of large woody debris, invasive species control, and stormwater management can also support the creation of a functioning ecology within a managed landscape. Manipulation of the riverbank must take existing forces and cascading hydraulic risks into account and weigh these risks against potential benefits. Any new slope stabilization shall be sensitive to the existing vegetation and natural character, and endeavor to improve experiential connections and views to the river. It is well understood that activities below the 100-year-flood level come with hydraulic risks and that human activity is an expected component of this urban ecosystem.

OVERLOOKS + INTERPRETIVE SITES

There are a number of overlooks and viewpoints planned among the riverfront open space. These viewpoints are strategically located at street ends, high points, historic areas, or special gathering spaces where people might pause. Historic infrastructure on the site should be preserved and incorporated into these overlooks where possible. All primary overlooks and viewpoints should be universally accessible.

PRIVATE OPEN SPACE SUGGESTIONS

Restaurant Row + Pedestrian Boardwalk + 5th Avenue Plaza

The concept of Restaurant Row and the riverfront boardwalk generated broad community support and enthusiasm. Restaurant Row provides the backdrop to the pedestrian boardwalk and a bridge between the Central Blocks redevelopment and the riverfront open space. The plaza area is intended to provide a variety of seating and entertainment opportunities for those visiting the small-scale restaurants and stores in this precinct. Pedestrian connections and clear views along the boardwalk allow for a separated pedestrian and bike paths along this portion of the riverfront. Where vegetated, the rooftops of Restaurant Row are intended as a natural extension of the riverfront "natives garden" and provide rooftop habitat and interest for the area.

Train Whistle Plaza

Train Whistle Plaza was envisioned as an open space connection to 5th Street at one of the main gateways to the EWEB site. The plaza might have outdoor seating, street furnishings, interpretive sites and/or public art related to the railroad and Millrace history.

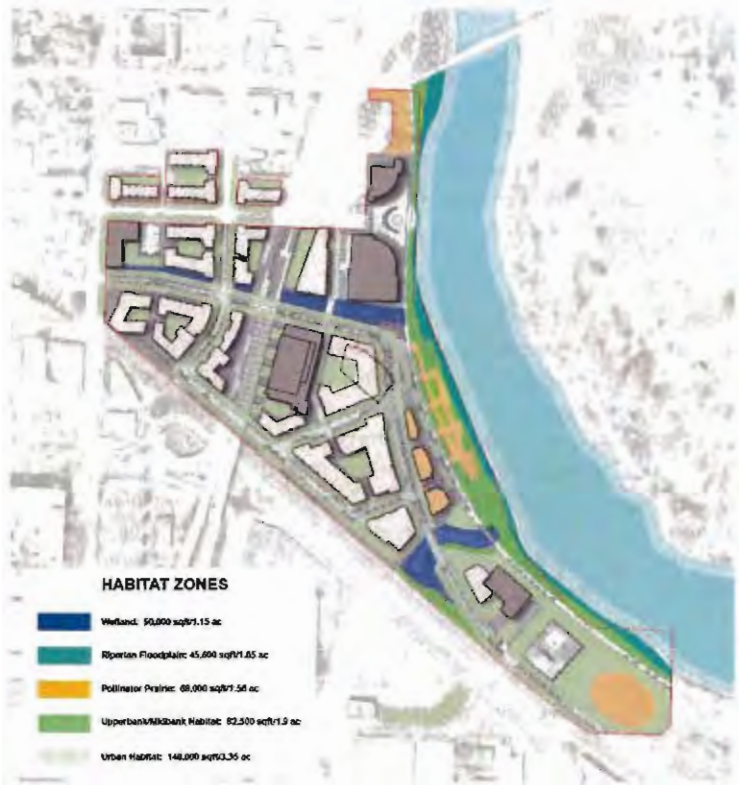


FIGURE 4-24: DESIGN GUIDELINES - HABITAT ZONES

FIGURE 4-25: DESIGN GUIDELINES - NATIVE PLANTS

HABITAT ZONES

The Downtown Riverfront includes five proposed habitat zones: wetland, riparian floodplain, midbank/upper bank, prairie and urban habitat. Each zone has its own set of environmental conditions such as access to water, sun exposure, and soil type that determine the community of plants that will grow. Together, these zones are designed to contribute naturalized habitat on site, and to integrate and connect larger areas of habitat and nearby open space. The proposed Habitat Zones were developed based on information from restoration professionals, the design team, and the Riverfront Ecological Analysis and Design Report (see Master Plan Appendix).

All zones would consist primarily of native species and non-invasive introduced species that require minimal supplemental water, fertilization or pest or disease control. To function as envisioned, these zones will need to be designed and maintained. The intent is to encourage biodiversity across the riverfront site, to support natural systems and processes with appropriate plantings and maintenance, and to create a managed, naturalized, educational landscape.

NATIVE PLANT COMMUNITIES

The Downtown Riverfront vision includes the use of native plant communities and non-invasive introduced species in the design the riverfront open space. A plant community is an assemblage of different species of plants growing together in a particular habitat. On the EWEB site, there are five plant communities that relate to the proposed habitat zones.

For a list of allowable plants, see Appendix B: Habitat Zones + Native Plant Communities.

In the riparian floodplain, the steep bank, variable water level, and large existing trees dictate smaller trees and shrubs that can withstand the shade and high water flows. Farther up the bank, there is bank-stabilizing riprap, less frequent high-water events, and tall existing trees. These challenging conditions call for a hardy suite of plants of mostly small trees, shrubs, and herbs that can provide valuable habitat for birds and pollinators. The conditions become much more variable in the upper bank zone with areas of sun and shade, and wet and dry. This variety translates into an assortment of plants each with its favored conditions, color, and texture. Lastly, the pollinator prairie is a mosaic of flowering herbs and small trees—all intended to attract pollinators and songbirds, and to provide habitat that is both functioning and educational.

FIGURE 4-26: DESIGN GUIDELINES - CULTURAL LANDSCAPE & OPEN SPACE

CULTURAL LANDSCAPE & OPEN SPACE

Eugene's downtown riverfront is a place that we share, making it an ideal landscape for community education and lessons from history. The overarching open space proposal is for a Cultural Landscape along the river—a community trove of green space, interpretive sites, public art, vistas and historic structures that teach about the history and culture embedded along the riverfront site. The intent is to use the riverfront landscape to teach and inspire inquiry into our community's history, in a variety of ways and at a variety of scales.

The ecological design of the open space was influenced by the Riverfront Ecological Analysis and Design Report as well as extensive input from the public meetings, numerous stakeholder interviews, relevant precedents throughout the Pacific Northwest, and the professional experience of the design team. Through this work and additional research, environmental education and habitat enhancement were identified as two primary ecological objectives of the open space design.

The Appendix includes a preliminary list of recommended interpretive site topics for the Cultural Landscape. The design guidelines on the pages that follow direct the design and construction of Cultural Landscape and Open Space areas.

DESIGN GUIDELINES

The design guidelines specified on the page that follows shall be used to direct the design and construction of Cultural Landscape and Open Space areas conceptually shown in the Downtown Riverfront Special Area Zone (S-DR) and in Figures 4-23, 4-24, and 4-26. For the purposes of these guidelines, the phrase "to the extent practicable" means that the guideline as described will be met to the extent possible while also allowing the design to: meet safety requirements, ensure compatibility between adjacent park and open space features, meet state and federal regulatory requirements including ADA accessibility requirements, stay within the construction and maintenance budget of the land managing agency, and ensure that the facilities can be sustainably maintained over their lifetime. This will require, in some cases, that the guidelines below will be met to a lesser degree in order to meet other requirements including those listed above.

Designs for development of any land that will be owned or managed by the City shall be reviewed and approved by the Eugene Parks and Open Space division prior to application for land use approvals and building permits.

CULTURAL LANDSCAPE & OPEN SPACE DESIGN GUIDELINES

PARKS + TRAILS + AREAS

Riverfront Park. To the extent practicable:

- The riverfront park surface shall be graded to slope downward from the relocated Riverbank Trail towards the Willamette River while retaining required coverage over existing buried infrastructure.
- The riverfront park shall include multiple clusters of trees. Trees may not be planted within view corridors shown in Figure 4-26.
- The riverfront park shall include accessible path connections from the relocated Riverbank Trail to the nature trail located near the top of bank.
- The riverfront park shall include one or more informal seating areas.
- The riverfront park shall include interpretive facilities that feature educational information related to the river, natural systems, cultural history, public art, or similar content.

Pollinator Park. To the extent practicable:

- Plantings within the pollinator park shall be comprised of a diversity of native grasses and wildflowers that provide pollen and nectar for adult insect pollinators, as well as larval host plants that provide food for caterpillars. The number and variety of species, their relative abundance, and their spatial organization shall be developed in conjunction with local native plant and pollinator experts and reviewed by City of Eugene Parks and Open Space staff.

Riverbank Trail. To the extent practicable:

- The Riverbank Trail shall be relocated and constructed as conceptually shown in Figure 4-26.
- The Riverbank Trail shall abut the proposed pedestrian boardwalk but at a lower elevation than the boardwalk. Grades for both trails shall be adjusted to provide functional separation appropriate to the site.

Adventure Landscape Area. To the extent practicable:

- The adventure landscape area shall include natural elements related to the river landscape or green infrastructure, such as rocks, boulders, logs, or recovered industrial artifacts.
- The adventure landscape area shall be located adjacent to green infrastructure.
- The adventure landscape area shall be designed to be compatible with adjacent uses.

GREEN INFRASTRUCTURE

Green Infrastructure

- Green infrastructure may include, but is not limited to, vegetated stormwater facilities that are designed to treat stormwater from adjacent streets and development.
- Green infrastructure may incorporate walking paths, accessible seating, and viewing boardwalks.

PUBLIC PLAZAS

5th Avenue Plaza. To the extent practicable:

- The plaza shall be designed to function as a public gathering space and/or event location.
- The plaza shall include a surface-grade kinetic water feature, interpretive display, or art feature.
- The plaza must be constructed of a hard surface material.
- Asphalt surfacing is prohibited.

OVERLOOKS + INTERPRETIVE SITES

Interpretive Sites and Overlooks. To the extent practicable:

- Two overlooks shall be provided in locations conceptually shown in Figure 4-23. River overlooks shall be designed to provide views upriver and downriver.
- Interpretive sites shall include: educational displays and materials related to the river, natural systems, cultural history, public art, or similar content; and seating.

Suggested interpretive facility locations include:

- At the east end of the green infrastructure system north of the Great Street/Festival Street.
- Near the Wiley Griffin historic home site near the intersection of 5th Avenue and Mill Street.
- Near the proposed recreational landscape area and green infrastructure systems.
- Near the existing water intake structure.

Additional optional guidelines for the construction and location of river overlooks and interpretive sites are included in Appendix B of the Downtown Riverfront Specific Area Plan.

HABITAT ZONES + NATIVE PLANT COMMUNITIES MANAGEMENT

Management Guidelines

- To ensure long-term fulfillment of cultural landscape and open space areas, management plans for public park and green infrastructure areas must be approved by the City of Eugene Parks and Open Space Division, and implemented as specified in the approved plans.
- Standards for the evaluation of management plans shall be based on reasonable, sustainable and cost-effective methods to maintain habitat values of the different zones per current best management practices, taking into account the impacts of planned human uses of these areas. Management plans shall include suggested performance targets for the control of invasive plant species and for native species diversity and cover, as well as sustainable and cost-effective management practices consistent with maintaining important habitat elements and structure.

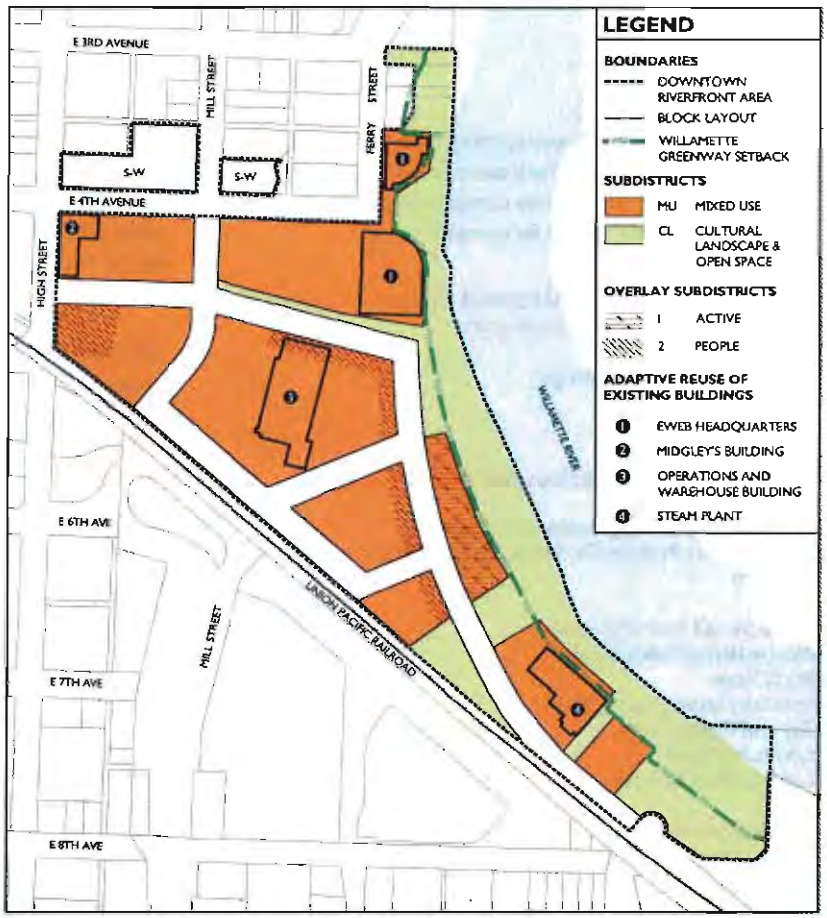


FIGURE 5-1: REGULATING PLAN

5. IMPLEMENTATION

A. LAND USE

Two primary sub-districts with two overlay subdistricts give structure to the redevelopment.

SUBDISTRICTS

S-DR/MU (Mixed-Use)

This subdistrict applies to areas designated for new mixed-use construction and/or the adaptive re-use of existing structures.

S-DR/Cultural Landscape + Open Space (CL/OS)

This subdistrict applies to properties designated as part of the Cultural Landscape & Open Space—an area that includes interpretive sites, parkland, open space, urban plazas and properties designated for green infrastructure services.

OVERLAY SUBDISTRICTS

S-DR/MU/1 (Active)

This overlay subdistrict requires an emphasis on retail, dining and/or active commercial uses that provide public amenities and have a strong relationship to the public street and adjacent open space.

S-DR/MU/2 (People)

This overlay subdistrict applies to areas along the primary street and near the intersection of High Street and the extension of 5th Avenue. It requires the inclusion of residential dwelling units above the ground floor in buildings with commercial uses including retail, office, restaurant, or similar nonresidential uses.

B. USES

The approved vision for the redevelopment of the Downtown Riverfront includes a mix of residential and commercial uses, new riverfront open space, green infrastructure, and improved public access to the riverfront open space.

C. CATALYST USES

There are two subdistrict overlays that direct the locations of uses on the riverfront site. The focus on retail and residential uses in these locations is intended to catalyze the development of an "active, people place" and to focus retail energy.

1. Restaurant Row: Ground Floor

Eating and Drinking Establishments
Restaurant
Specialty Food and Beverage
Bar and Tavern
Delicatessen

Education, Cultural, Religious, Social and Fraternal
Artist Gallery/Studio
Community and Neighborhood Center
Park and Non-Publicly Owned open Space Use
Museum

Trade (Retail and Wholesale)
Bicycle Rental/Sales/Service
Book Store
Specialty Store (e.g. gift store)
Toy and Hobby Store
Computer Store
General Merchandise

Personal Services
Barber, Beauty, Nail, Tanning Shop
Locksmith Shop
Shoe Repair Shop
Tailor Shop

2. Restaurant Row: Above Ground Floor

Office
Administrative, General and Professional Office
Scientific and Educational Research Center

Residential
Dwellings
Rowhouse
Four-Plex (Four-Family attached on the same lot)
Multiple-Family (3 or More Dwellings on same lot)

Lodging
Bed and Breakfast Facility
Hotel, Motel and similar business providing overnight accommodations

3. Residential Overlay: Above Ground Floor

Residential uses are required above the ground floor in the area described by the S-DR/MU/2 (People) subdistrict overlay.

D. USES NOT ALLOWED

The following uses are not allowed on the riverfront property. This list was developed using the allowable uses in the C-2 zone designation, according to the Eugene Development Code Table 9.2160 Commercial Zone Land Uses. Based on the C-2 zone designation, uses considered incompatible with the vision for the Downtown Riverfront were excluded.

These uses were determined to be incompatible with the vision for the redevelopment of the Downtown Riverfront as approved by the Community Advisory Team and EWEB Board of Commissioners.

Entertainment and Recreation
Golf Driving Range

Lodging
Recreational Vehicle Park

Medical, Health and Correctional Services
Correctional Facility, Excluding Residential Treatment Center

Motor Vehicle Related Uses
Motor Vehicle Sales/Rental/Service excluding recreational vehicles and heavy trucks
Parking Area not directly related to a primary use on the same development site
Recreational Vehicles and Heavy Truck, Sales/Rental/Service Repair, includes paint and body shop
Service Stations, includes quick servicing
Structured Parking, up to two levels not directly related to a primary use on the same development site
Tires, Sales/Service
Transit Park and Ride, Major
Transit Park and Ride, Minor

Residential
One-Family Dwelling
Duplex (Two-Family Attached on the Same Lot)

Trade (Retail and Wholesale)
Agricultural Machinery Rental/Sales/Service
Equipment, Heavy, Rental/Sales/Service –includes truck and tractor sales
Manufactured Dwelling Sales/Service/Repair

Other Commercial Services
Collection Center, Collection of used goods

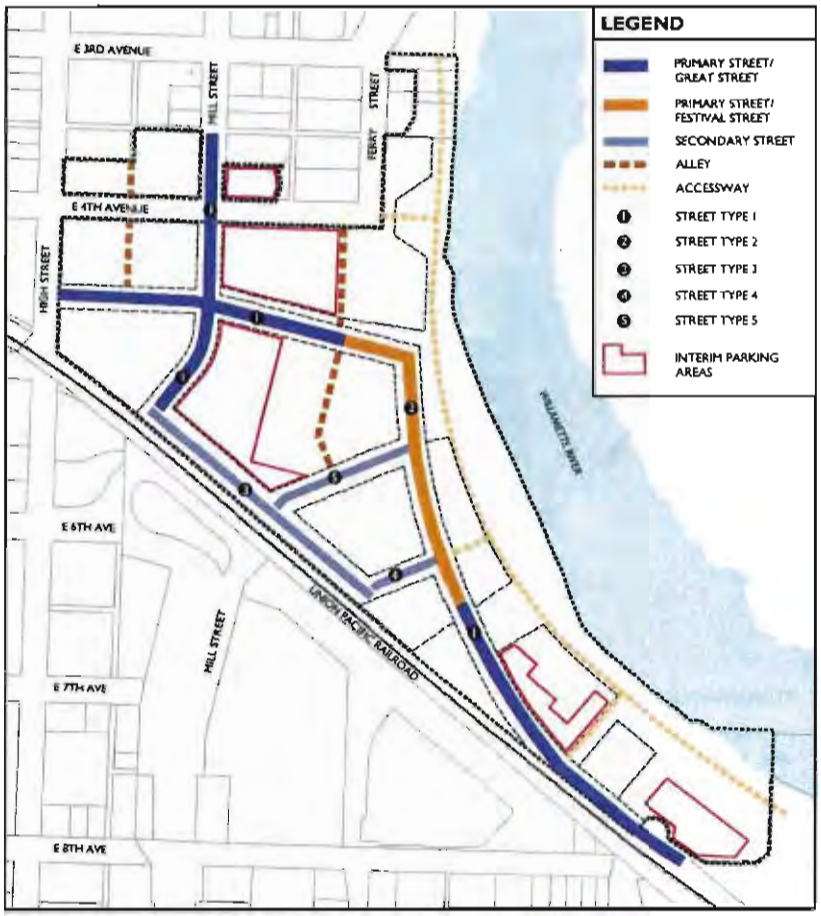


FIGURE 6-1: STREET TYPES

6. INFRASTRUCTURE

The existing riverfront property has infrastructure in place to support its current utility and office uses. Electric, water, natural gas, telecommunications and sewer utilities serve the property. Existing public rights-of-ways provide access from 4th Avenue to the Headquarters Buildings, EWEB Plaza and Midgley's Building, but the remainder of the property is inaccessible to the public.

New and additional infrastructure and public services (police, emergency response, etc.) will be needed to safely and efficiently serve the property and meet the vision of the riverfront master plan. The most important elements of new infrastructure are Riverfront Street—the primary right-of-way that gives public access to the riverfront and makes internal redevelopment blocks accessible—and the riverfront public open space.

Improvements to infrastructure are likely to be phased, and should be integrated with the overall re-development strategy. Individual improvements should be considered as part of the whole to help create synergies and lead to more expedient re-development. The stormwater strategy, for example, is closely tied to the public open space design. Riparian enhancement depends on relocation of the bike trail and riverfront utilities. Well-coordinated infrastructure phasing will help create a whole that is superior, and less expensive, than the sum of its parts.

FIGURE 6-2:
STORMWATER MANAGEMENT

STORMWATER MANAGEMENT

Managing the property's stormwater through retention and cleansing is strategic for sustainability principles that address water conservation and quality. The stormwater management strategy will seek to reduce the negative impacts of urban runoff typically associated with large volumes of untreated runoff, such as erosion and sedimentation, and the release of harmful chemicals into waterways.

The plan includes an integrated stormwater design that aims to mimic the hydrology of a natural, undeveloped site. This will reduce net runoff by utilizing a number of management systems:

- Bioswales
- Rain Gardens
- Open Water Channels
- Greenroofs
- Pervious Paving
- Rainwater Retention Basins
- Rainwater Harvesting and Storage Systems
- Water-wise Planting and Native Plant Communities

These systems are proposed throughout the site and incorporated into the fundamental vision in a variety of ways. Through the use of effective stormwater management, runoff can be reduced between 19% and 65%.

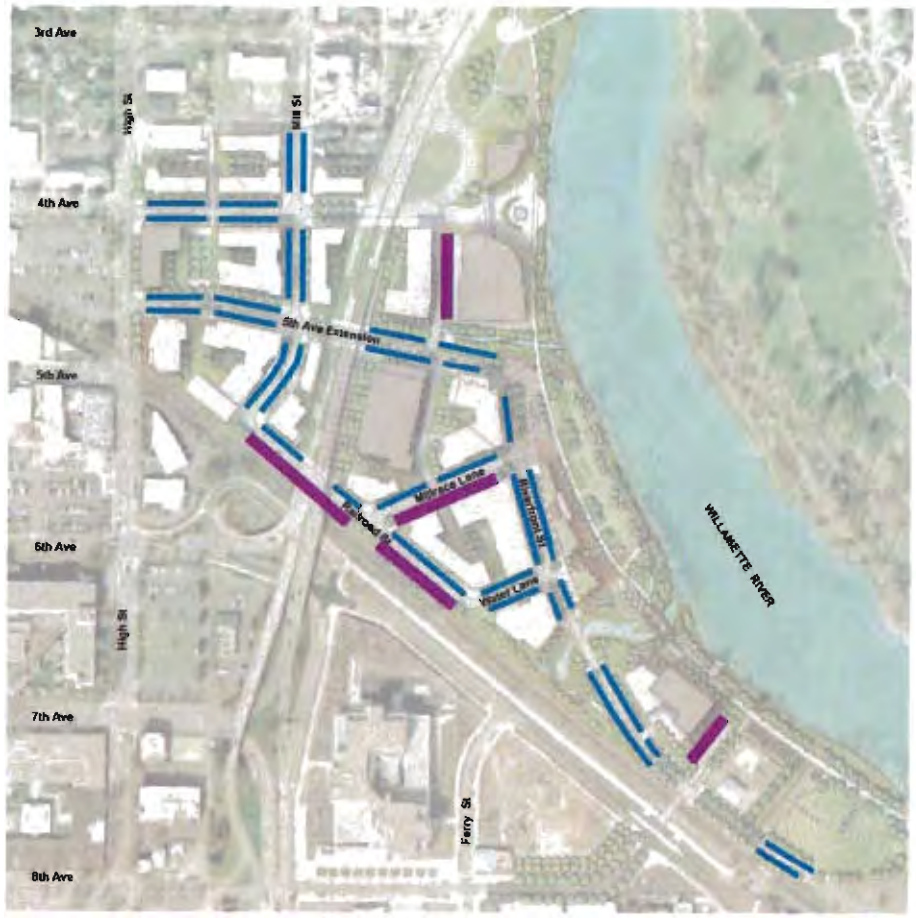


FIGURE 6-3:
ON-STREET PARKING

ON-STREET PARKING STRATEGY

The plan adopts a Downtown parking strategy: encouraging alternate means of transportation while recognizing the importance of adequate access and on-street parking to support retail uses.

With the exception of lots with six or fewer spaces, new surface parking is not an allowable use on the riverfront site. Small surface parking lots of up to six spaces are allowed in conjunction with buildings within the redevelopment. These lots should be located internal to blocks, not fronting 5th Avenue or Riverfront Street.

The on-street parking capacity of the plan is approximately 300 cars, all located within one or two blocks of the riverfront. This capacity meets the demand for the retail and commercial uses and is an important factor in the feasibility of Restaurant Row. Streets in the plan are designed to have parallel parking and perpendicular parking on one side to increase the on-street capacity. The south-west side of Railroad Street is particularly useful to increase parking capacity, with head-in parking along the length of the railroad frontage. With clear street connections along Millrace Lane and Water Lane to the river, this provides convenient parking within one block of the riverfront, but locates most automobiles away from the river edge open space. The Parking Locations diagram illustrates where parallel and perpendicular on-street parking are proposed.

Individual redevelopment blocks are required to "self-park" and accommodate parking for residential or other uses. All parking should be hidden from view from the sidewalk. Multi-story parking garages should have liner uses on the ground level when facing a sidewalk. The exception to this requirement is along Railroad Street, where private and shared garage access may face the railroad corridor. The Parking + Building Types diagram show a range of parking options for various types of residential redevelopment. The Building Type diagram shows how housing types can be arranged to fit a range of parcel sizes, from narrow lots to wider lots, and how a diversity of residential units can be accommodated with parking that is not visible from the street. With access to the bike path and improved connections to Downtown, it is expected that parking ratios can be smaller than in more auto-dominated parts of the city. Shared off-street parking between daytime and evening uses is also encouraged.

Bicycle parking should be provided near the riverfront open space, and incorporated with the sidewalk design.

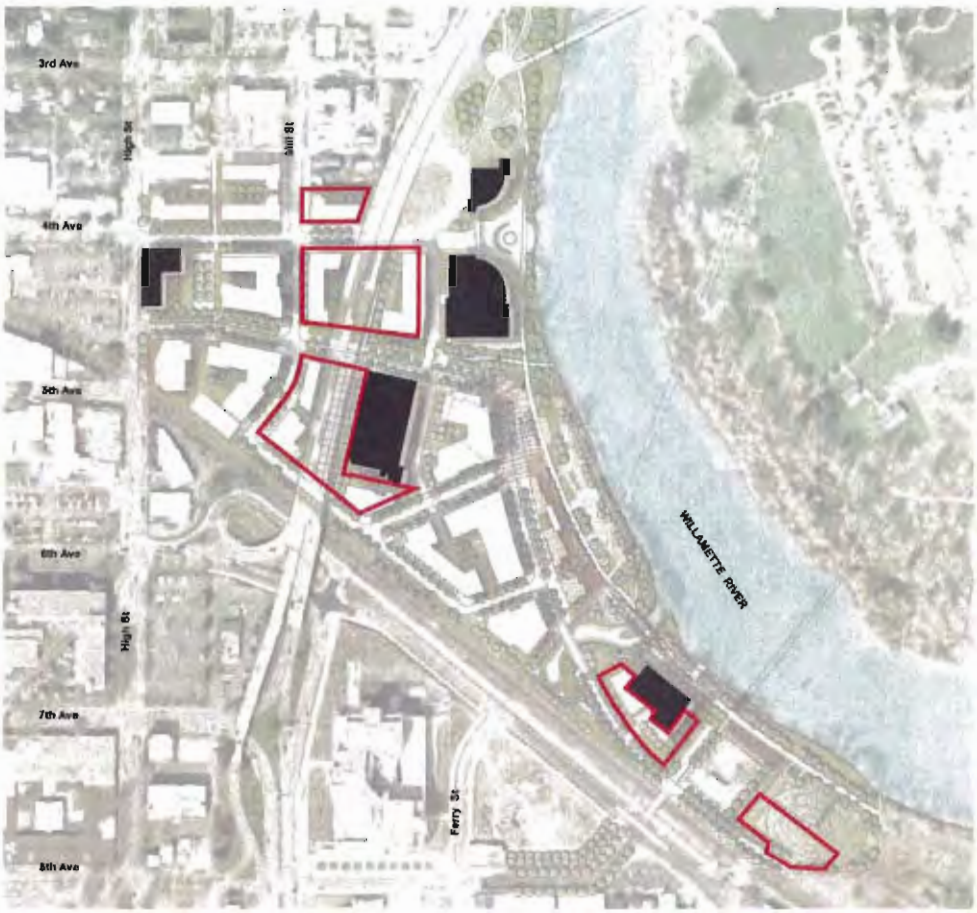


FIGURE 6-4:
INTERIM PARKING

INTERIM PARKING

To seed redevelopment and encourage the adaptive re-use of existing structures, Interim Surface Parking associated with the EWEB Headquarters Building, Operations Warehouse, and Steam Plant are allowed.

This allowable surface parking is independent of EWEB's presence on the site and preserves the current economic value of the existing buildings.

7. REDEVELOPMENT SCENARIOS

The redevelopment of Eugene's Downtown Riverfront presents a unique and compelling opportunity at the center of the city. During the master planning process, five use scenarios were developed early in the design process to support the development of a feasible and flexible redevelopment framework on the EWEB property. These scenarios are included in the "Preliminary Development Program Memorandum" prepared by Leland Consulting for Rowell Brokaw Architects. The full memorandum is included in the master plan's appendix.

Four refined redevelopment scenarios for the Downtown Riverfront apply the market research and use scenario analysis completed by Leland Consulting to the property's approved redevelopment framework. During the design phase, a redevelopment capacity of 200-450 residential units was estimated for the redevelopment, with sub-area densities ranging from 24 units/acre to 150 units/acre depending upon location, redevelopment envelope, and building type.

Base Scenario

Accomplishes a new redevelopment of 250 units across 10 acres (25 units/acre). Includes existing EWEB office uses and the development of Restaurant Row. New construction includes 3- and 4-story stacked flats with structured and/or screened parking. Townhouses proposed west of the viaduct. Residential use requirement above ground floor along Riverfront Street. Redevelopment Summary: 250 dwelling units, 36,000sf of retail/commercial, and 118,000sf of existing office.

Mixed-Use Neighborhood

Focuses on addition of higher-density residential capacity to the Downtown core. Includes 4- to 6-story stacked flats over some retail with structured and/or screened parking. Restaurant Row is developed and the existing Operations Warehouse is re-used for local retail/commercial. Townhouses, rowhouses and stacked flats over commercial are proposed west of the viaduct. Residential use requirement above ground floor along Riverfront Street. Redevelopment Summary: 404 dwelling units, 68,000sf of retail/commercial, 45,000sf of office, and 118,000sf of existing office.

New Industry District

Focus on small-scale, craft industries and residential in Downtown core. Includes 3- and 4-story structures and long-term utilization of interim parking locations. Live-work rowhouses and townhouses located west of the viaduct. Despite a focus on small industry, the housing requirement above the ground floor along Riverfront Street still puts "eyes on the park" along Restaurant Row and riverfront open space. Redevelopment Summary: 85 dwelling units, 116,000sf of retail/commercial, 175,000sf of office, and 118,000sf of existing office.

Civic Center

Directs redevelopment effort toward office uses. Includes 3- and 4-story buildings and presumes a parking structure on Block 7 as well as the need to retain greater areas of interim parking. Townhouses located west of the viaduct. Restaurant Row is developed with riverfront park space. Includes the housing requirement above the ground floor along Riverfront Street still puts "eyes on the park" along Restaurant Row and riverfront open space. Redevelopment Summary: 73 dwelling units, 76,000sf of retail/commercial, 275,000sf of office, and 118,000sf of existing office.

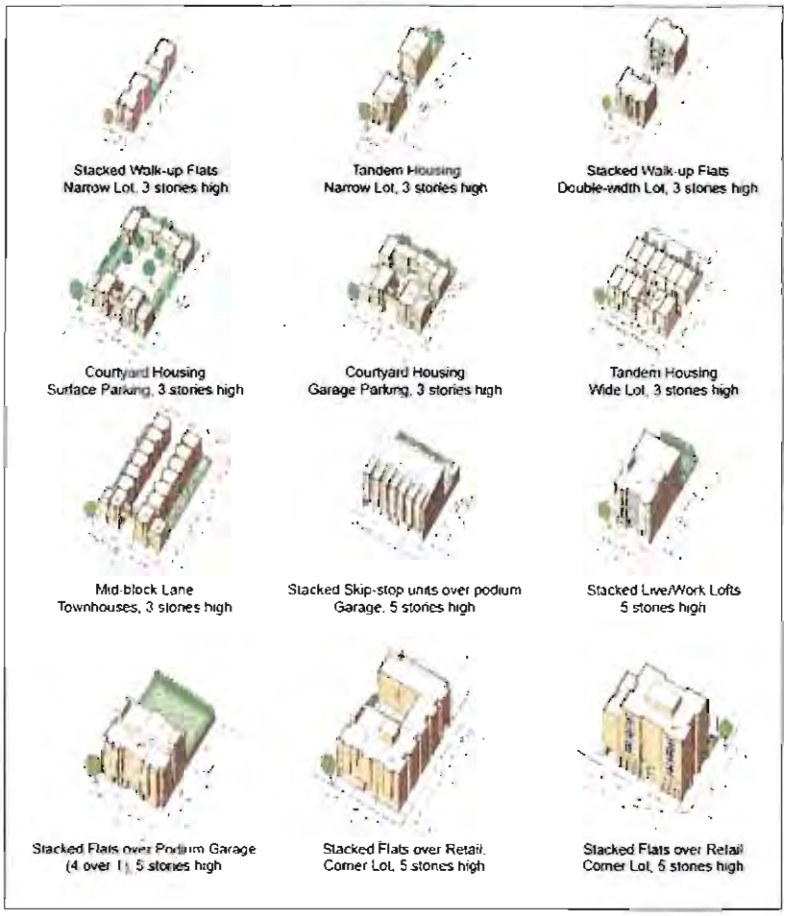


FIGURE 7-1:
HOUSING TYPES + DENSITY

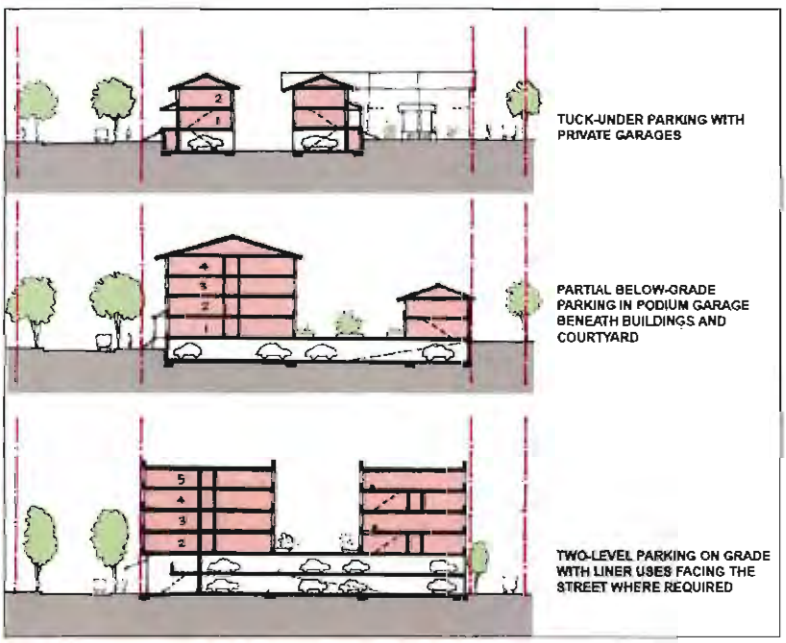


FIGURE 7-2:
HOUSING + PARKING STRATEGIES

Eugene Downtown Riverfront
Specific Area Plan
Appendix
FEBRUARY 2012

APPENDIX A: HABITAT ZONES + NATIVE PLANT COMMUNITIES

RIPARIAN FLOODPLAIN
The Riparian Floodplain extends the length of the riverfront below the existing top of bank. The intent of the master plan is to increase and enhance the riparian zone where possible. This would be achieved by:

- Removing invasive vegetation
- Enhancing existing native riparian vegetation in order to increase management species habitat, mitigate erosion, and increase river shading
- Increasing the area of riparian habitat above Ordinary High Water Mark
- Creating new habitat where space allows using native trees, shrubs, forbs, grasses, sedges and rushes

RIPARIAN FLOODPLAIN PLANT LIST

Tree Species
Alnus rhombifolia
Alnus rubra
Fraxinus latifolia
Populas trichocarpa

Small Tree & Shrub Species
Cornus sericea
Crataegus suksdorfi
Malus fusca
Physocarpus capitatus
Salix hookeriana
Salix lucida ssp. Lasiandra
Salix sitchensis
Symphoricarpos albus var. laevigatus
Viburnum ellipticum

Forb Species
Scutellaria lateriflora
Stachys cooleyae
Urtica dioica

Grass and Sedge Species
Carex obnupta
Carex hendersonii
Carex interupta
Juncus effuses ssp. Pacificus
Juncus occidentalis

WETLAND

The Wetland Habitat Zone consists of constructed wetlands and/or bioswales that address stormwater management for the site. These areas would receive stormwater from public streets and cleanse it prior to it being discharged into the river. These areas would consist of:

- Naturalized stormwater bioswales
- Millpond Swale
- Plantings with native wetland small trees, shrubs, forbs, grasses, sedges, and rushes

WETLAND PLANT LIST

Small Tree & Shrub Species
Acer circinutum
Cornus sericea
Crataegus suksdorfi
Malus fusca
Physocarpus capitatus
Salix hookeriana
Salix lucida ssp. lasiandra
Salix sessilifolia
Salix sitchenensis
Spiraea douglasii
Vibunum ellipticum

Forb & Fern Species
Allisa triviale (in water)*
Camassia leichtlinii
*Delphinium trolliifolium**
*Dicentra farmosa**
Lupinus polphyllus
Lysichiton americanum (in water)*
*Ranunculus orthorhyncus**
*Sidalcea cusickii**
*Sisyrinchium idahoense**
*Urtica dioica**
Veronica scutellata (in standing water)*
Dodecatheon hendersonii

Grass & Sedge Species
Agrostis exarata
Alopecurus geniculatus

Mill Pond Swale Only
Bromus carinatus
Bromus sitecehsis
Carex densa
Carex hendersonii
Carex leptopoda
Carex obnupta
Carex stipata
Danthonia califamica
Deschampsia cespitosa
Festuca romerii
Eleocharis accicularis
Eleocharis ovata
Eleocharis palustris
Glyceria occidentalis
Glyceria striata
Hordeum brachyantherum
Juncus acuminatus
Juncus effuses ssp. Pacificus
Juncus occidentalis
Juncus patens
Juncus tenuis
Schoenoplectus acutus (in water)
Schoenoplectus americanus (In water)
Schoenoplectus tabernaemontanani in water)
Scirpus microcarpus
Scirpus validus
Spaganium (in water)

UPPER BANK / MIDBANK

The Upperbank and Midbank Habitat Zones connect to the Riparian Zone and extend across a large area of the riverfront open space. These areas would address:

- Removal of invasive vegetation
- Joint planting of native shrubs (e.g., willow) in riprap areas at/above Ordinary High Water Mark
- Bank alteration and reduction of steep slopes where possible to encourage plant establishment and improve maintenance
- Plantings with native small trees, shrubs, forbs and grasses that have habitat value for birds, insect pollinators and other wildlife species
- Maintaining of views to the river and good lines of sight in public areas

MID-BANK/UPPER BANK PLANT LIST

Tree Species
Acer macrophyllum
Arbutus menziesii
Fraxinus latifolia
Quercus garryana
Quercus kelloggii

Small Tree & Shrub Species
Acer circinatum
Amelanchier alnifolia
Aruns dioicus
Baccharis pilularis
Berberis aquiifolium
Ceonanthus sanguineus
Ceonanthus velutinus
Corylus cornuta var. californica
Halodiscus discolor
Lonicera invulucrata
Oemleria cerisformis
Philadelphus lewisii
Prunus emarginata var. mollis
Prunus virginiana var, demissa
Rhamnus purshiana
Ribes sanguineum
Rubus parviflorus
Salix scoulerina
Sambucus racemosa
Symphoricarparpos albus var. laevigatus
Viburnum ellipticum

Forb & Fern Species
Aquilegia Formosa
Artemesia douglasiana
Asclepias speciosa
Clarkis amoena
Clarkis purpurea var. purpurea
Claytonia sibirica
Collomio grandiflora
Delphimium menziesii
Delphimium trolliifolium
Dicentra Formosa
Erysimun capitatum var. catitatum
Eschscholzia californica
Fragaria vesca var. bracteata
Fragaria virginiana var. platypetela
Geranium areganum
Gilia capitata
Hechera lanatum
Heuchera micrantha
Hydraphyllum tenuipes
Iris chrysophylla
Iris tenax
Lomatium dissectum
Lomatium nudicaule
Lomatium utriculatum
Lupines rivularis
Mertensia platyphylla
Plectris congesta
Polystichum munitum
Plectritis congesta
Potentilla gracilis
Prunella vulgaris ssp.lanceolota
Ranuculus occidentalis
Sidalcea malviflora var. virgata
Sisyrinchium idahoense
Solidago canadensis
Symphyratrichum hallii
Symphyratrichum subspicatum
Triteleia hyocinthine
Viola adunca
Wyethia angustifolia

Grass & Sedge Species
Carex tumulicola
Danthonia californica
Elymus glaucus
Festuca roemeri
Koeleria macrantha

POLLINATOR PRAIRIE

The Pollinator Prairie Habitat Zone encompasses all zones that have a grassy, meadow character and would incorporate:

- Native grassland meadow
- Planting of native species that serve as nectar/food and host/shelter sources for native pollinators as well as songbirds
- Educational and interpretive measures that inform the public about native pollinator and songbird habitat
- Habitat greenroofs on adjacent buildings

POLLINATOR PRAIRIE PLANT LIST

Small Tree & Shrub Species
Amelonchier alnifolia
Berberis aquifolium
Corylus cornuta var. californica
Holodiscus discolor
Oemleria cerisformis
Philadelphus lewisii
Prunus emarginata var. mollis
Prunus virginiana
Rhamnus purshiana
Ribes sanguineum
Syphoricarpos albus var. laevigatus

Forb Species
Achillea millefolium
Anaphalis margaritacea
Aquilegia Formosa
Brodiaea coronaria ssp. coranaria
Clarkia amoena
Clarkia purpurea var purpurea
Collinsia grandiflora
Collomia grandiflora
Delphinium menziesii
Epilobium ciliatum var. glandulosum
Epilobium densiflorum
Eriophyllum lanatum
Erysimum capitatum var. capitatum
Eschalltzia califarnica
Fragaria virginiana var. platypetela
Geronium oregonum
Gilia capitata
Heuchera micrantha
Iris tenax
Lomatium dissectum
Lomatium nudicaule
Lomatium ultriculatum
Lupinus bicolor
Lupinus polyphyllus
Mertensia platyphylla
Plectritis congesta
Potentilla gracilis
Prunella vulgaris ssp. lanceolata
Ranunculus occidentalis
Sidalcea virgata (syn=malviflaro var. virgata)
Sisyrinchium idahoense
Solidago canadensis
Symphyotrichum hallii
Symphyotrichum subspicatum
Triteleia hyacinthine
Viala adunca
Wyethia angustifolia

Grass & Sedge Species
Carex tumicola
Danthonia californica
Elymus glaucus
Festuca roemeri
Koeleria macrantha

URBAN HABITAT

Urban Habitat is the landscape associated with the redevelopment sites, streets, perimeter planting, and public open spaces for urban agriculture, play areas, and plazas. These areas would consist primarily of native species and non-invasive introduced species that require minimal supplemental water, fertilization or pest or disease control. The Urban Habitat Zone includes:

- Installation of stormwater bioswales and rain gardens using native species adapted to the specific conditions of each feature
- Planting of native species similar to Upperbank Habitat species that provide additional habitat for birds and pollinators
- Streetscape plantings, landscape boulevards, and private courtyards using mostly native species supplemented by non-invasive introduced species that require minimal supplemental water, fertilization, pest or disease control

URBAN HABITAT PLANT LIST

The allowable plant list for the Urban Habitat Zone includes all plant materials noted in the Upper/Midbank Plant List, in addition to the following urban trees:

Tree Species
Acer rubrum varieties
Carpinus betulus
Quercus accutissima
Quercus frinetto
Quercus phellos
Arbutus menziesii
Fraxinus latifolia
Quercus garryana
Quercus kelloggii
Zelkova serrata

APPENDIX B: CULTURAL LANDSCAPE INTERPRETIVE SITES

The following interpretive topics were recurring themes during public discussions about the redevelopment of the riverfront property. They represent an incomplete collection of stories and topics that are appropriate for inclusion in the Cultural Landscape.

Wiley Griffon's House
Wiley Griffon is widely considered to be Eugene's first African-American resident. Well-known and popular, Griffon was the driver and de facto operator of a mule-driven streetcar service that carried early residents from West Eugene to the University of Oregon campus. A Sanborn map from 1912 shows Griffon's house to be located near the intersection of 4th and Mill Street, on the riverfront property near to the present-day EWEB Employee's Credit Union. On Eugene Skinner's first plat, Griffon's residence is located on Block 10, Lot 4.

Born in 1867, Griffon came to Eugene from Texas in 1891 with Henry W. Holden, the railway entrepreneur who employed him. Wiley died in Eugene in 1913, at age 46, and was buried in the Masonic Cemetery among Eugene's other pioneer citizens. The location of his grave in the Masonic, and the fact that the local Elks paid for his funeral, says a great deal about the respect Griffon earned during his 22 years as a member of Eugene's community. By all accounts, he was a well-liked, respected man who made recognized contributions to the daily lives of others. He worked for many businesses during his time in Eugene, and purchased his small home overlooking the Millrace in 1909. It is a simple story of a popular man made remarkable by that fact that Griffon lived in Eugene at a time when Oregon laws still barred African-Americans from residing in the state. Griffon's home site also provides as a connection between two adjacent sites of historic significance to the African-American community: the Mims House and Ferry Street Community site.

Ferry Street Community
More African-Americans came to Eugene, despite the discriminatory laws and ethic, in the 1930s-1950s, with the Southern Pacific Railroad. In the 1940s, some of these new residents came together in a small community along the northern banks of the Willamette River, near the Ferry Street Bridge and just beyond Eugene's city limits.

The Ferry Street Community was Eugene's first African-American neighborhood. It was located near the foot of the DeFazio Footbridge, on the north side of the river. The houses are remembered as being square in plan, wood-framed, and with simple roofs made from solid materials or canvas. The homes were constructed primarily from scavenged materials. Today, no physical evidence of the settlement exists. In July 1949, a Lane County Court ordered that the Ferry Street Settlement be razed and residents evicted. Newspaper articles reported that some families did not even have an opportunity to remove their belongings before the small structures were bulldozed. At that time, the community was reported to include 101 people, 65 of whom were "colored," 36 of whom were white, and most of whom were poor. In a 2006 interview, Mattie Reynolds, who lived on the site with her husband and children, recalled the names of eight families who lived on the site in 1948: Johnson, Mims, Nettles, Lester, Garrets, Holt and Henry, and Frenchwell. Newspaper articles from 1949 also reference at least three white families named Barber, Walker and Owens.

Following demolition, Eugene's African-American community was dispersed to three separate areas of town: West Eugene, High Street and Glenwood. The land where several families relocated in West Eugene was without water or sewer service, and marked by seasonal flooding. Lyllye Reynolds Parker was among the children who were forced to move when the Ferry Street Community was demolished. Sam Reynolds Street in West Eugene is named for her father. Views to the area once occupied by the Ferry Street Community are afforded from the northern edge of the EWEB property, presenting an opportune location for historic interpretation and commemoration.

Rivers + Hydrology
On a calm day, the Willamette River exudes a bucolic character that belies its power and area of influence. On average, this waterway carries 32,000 cubic feet of water per second (cfs); during the 1996 flood, that rate was 460,000 cfs, or 14 times its average flow. The Willamette watershed encompasses nearly 12,000 square miles and the river itself is 187 miles long, flowing north from the southern end of the Willamette Valley to its confluence with the Columbia River in Portland. Life teams in its waters, and

along its banks: more than 70% of Oregon's population lives within this watershed. River overlooks provide the opportunity for interpretative sites addressing hydrology, river systems and water quality.

Historic Infrastructure
The EWEB property is literally filled with industrial relics, and there are numerous opportunities to repurpose these items. Most notably, the Steam Plant sits near the southern terminus of the riverfront open space, forming a historic backdrop to the riverfront property. Completed in 1931, the Steam Plant is historically significant for its use as a power plant. The structure is a highly recommended candidate for renovation and adaptive reuse.

Natural Systems + Habitat
Stormwater runoff poses a major threat to the health of rivers, and loss of habitat in urban areas threatens pollinator species and songbirds. The master plan proposes new habitat but also recommends interpretive sites along the Millpond Swale and atop the Pollinator Knoll to share this knowledge and present action-item solutions to community members.

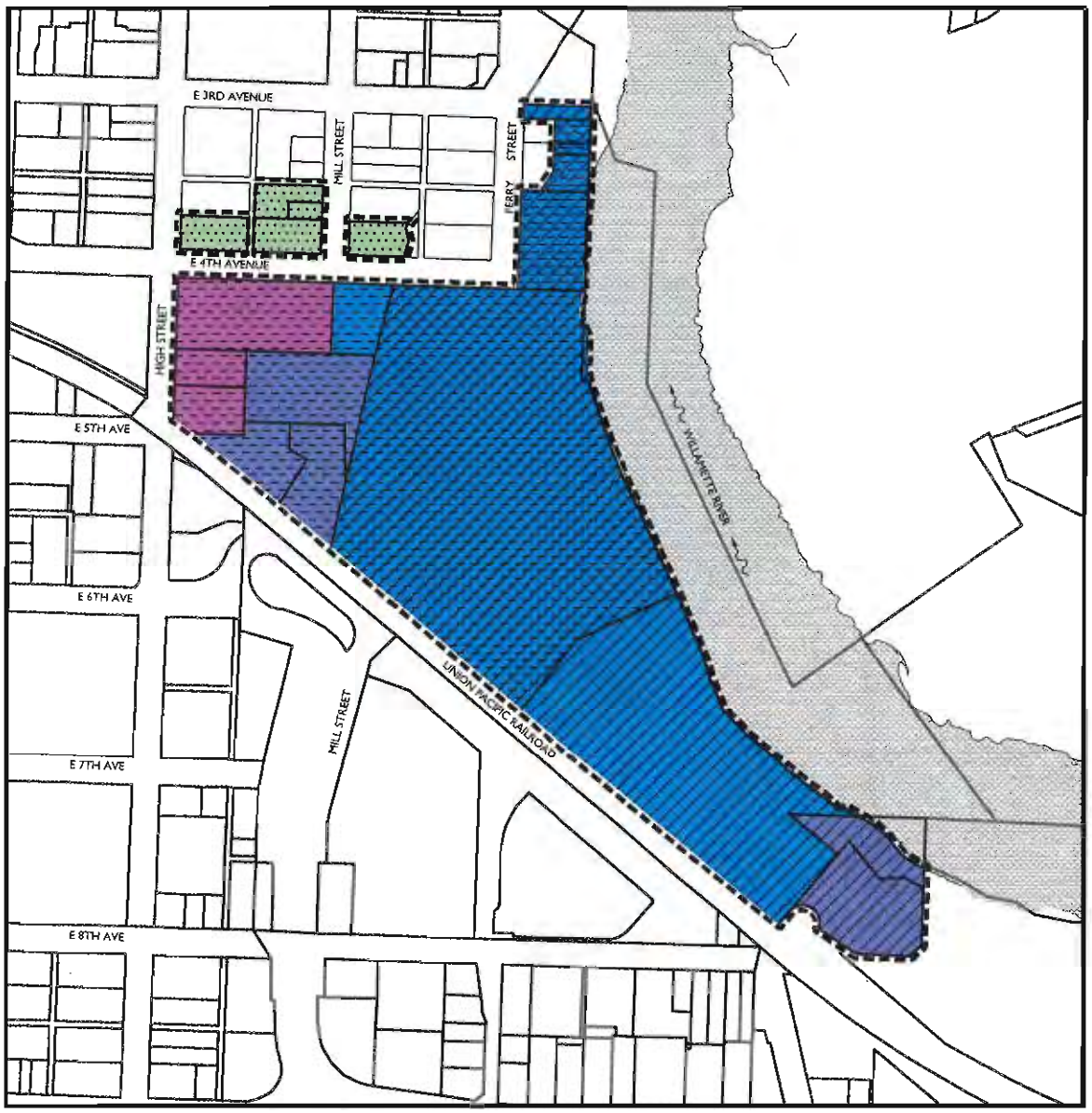
Skinner's Mudhole + Ferry Crossing
The riverfront property is part of our city's earliest history and a river overlook is an ideal location to share this history lesson.

EWEB Downtown Riverfront Zoning Amendments

ASSESSOR'S MAP & TAX LOT NUMBERS	SIZE	BASE ZONE & OVERLAY ZONE	
17-03-29-33		**Existing**	**Proposed**
1400	0.12 acres	PL/WR	S-DR/WR
1600	0.11 acres	PL/TD/WR	S-DR/WR
1800	0.05 acres	PL/TD/WR	S-DR/WR
2000	0.19 acres	PL/TD/WR	S-DR/WR
2600	0.25 acres	S-W/SR	S-W/SR
2700	0.48 acres	PL/TD	S-DR
2900	0.86 acres	PL/TD/WR	S-DR/WR
17-03-30-44		**Existing**	**Proposed**
7400	0.29 acres	S-W/SR	S-W/SR
8200	0.21 acres	S-W/SR	S-W/SR
8300	0.08 acres	S-W/SR	S-W/SR
8400	0.29 acres	S-W/SR	S-W/SR
8500	1.41 acres	I-2/TD	S-DR
17-03-31-11		**Existing**	**Proposed**
100	0.29 acres	I-2/TD	S-DR
300	0.52 acres	I-2/TD	S-DR
17-03-32-22		**Existing**	**Proposed**
100	11.89 acres	PL/TD/WR	S-DR/WR
300	1.12 acres	I-3/TD	S-DR
400	0.53 acres	I-3/TD	S-DR
401	0.65 acres	I-3/TD	S-DR
800	5.86 acres	PL/WR	S-DR/WR
1500	1.16 acres	I-3/WR	S-DR/WR
1600	0.70 acres	I-3/WR	S-DR/WR

I-2 - Light-Medium Industrial
I-3 - Heavy Industrial
PL - Public Land
S-W - Whitaker Special Area Zone
S-DR Downtown Riverfront Special Area Zone (proposed)
/SR - Site Review Overlay
/TD - Transit Development Overlay
/WR - Water Resource Conservation Overlay

Exhibit 3



EWEB Downtown Riverfront
Existing Zoning Designations

LEGEND

SAZ BOUNDARY

OVERLAY ZONES

/TD Transit Oriented Development

/SR Site Review

/WR Water Resource Conservation

BASE ZONES

I-2 Light-Medium Industrial

I-3 Heavy Industrial

PL Public Land

S-W Whiteaker Special Area Zone

Exhibit 3

EWEB Downtown Riverfront
Proposed Zoning Designations

LEGEND

SAZ Boundary

OVERLAY ZONE

/WR Water Resource Conservation

/SR Site Review

BASE ZONE

S-DR Downtown Riverfront Speical Area Zone

S-W Whiteaker Speical Area Zone

S-DR Downtown Riverfront Special Area Zone

9.3130 Purpose of S-DR Downtown Riverfront Special Area Zone.

(1) Purpose. The purpose of the Downtown Riverfront Special Area Zone (S-DR) is to support the creation of an active, vibrant, people place along Eugene's downtown riverfront that achieves an appropriate balance between redevelopment certainty and flexibility; to further economic development; to incorporate educational aspects; to support the appropriate enhancement of riverfront habitat; and to promote a mix of uses that complement and support existing downtown and riverfront uses.

(a) The intent of the S-DR Zone is to implement the vision of the EWEB Riverfront Master Plan and the goals, principles, standards, and guidelines of the *Downtown Riverfront Specific Area Plan* (SAP).

(b) S-DR Zone use regulations provide for a range of residential, commercial, employment, cultural, and recreational uses; support the development and an active, vibrant, people place; and compliment and support existing downtown and riverfront uses.

(c) S-DR Zone transportation system standards implement the street hierarchy and circulation framework in Figure 4-13 Street Pattern and Circulation in the *Downtown Riverfront Specific Area Plan* and the "Great Street" concept in the *Eugene Downtown Plan.*

(d) S-DR Zone parking requirements implement the parking strategy in the *Downtown Riverfront Specific Area Plan* and promote the development of an attractive, pedestrian-oriented neighborhood.

(e) S-DR Zone cultural landscape and open space requirements implement the open space program, habitat zones, and cultural landscape framework in Figure 4-23 in the *Downtown Riverfront Specific Area Plan.*

(f) S-DR Zone view corridor requirements implement the view corridors framework in Figure 4-4 in the *Downtown Riverfront Specific Area Plan.*

(g) S-DR Zone specific development standards implement the urban design guidelines in the *Downtown Riverfront Specific Area Plan.*

(2) Design Objectives. The design objectives of the S-DR Zone are:

(a) Create a "people place" that is active, vibrant, accessible, and multi-use.

(b) Provide appropriate setbacks, deeper where environmental or habitat issues are critical, and shallower in other areas.

(c) Incorporate appropriate building and site design techniques that address environmental concerns.

(d) Include educational aspects that teach about the city, river, and history.

(e) Implement Nodal Development policies in the Eugene-Springfield Comprehensive Plan (Metro Plan). .

(f) Implement the Growth Management policies adopted by the City of Eugene.

(g) Foster the redevelopment of a pedestrian-oriented, livable riverfront district consistent with the framework, essential features, and objectives of the *Downtown Riverfront Specific Area Plan.*

9.3135 S-DR Downtown Riverfront Special Area Zone Subdistricts and Overlay Subdistricts.

(1) Subdistricts. Within the S-DR Zone, the two subdistricts are:

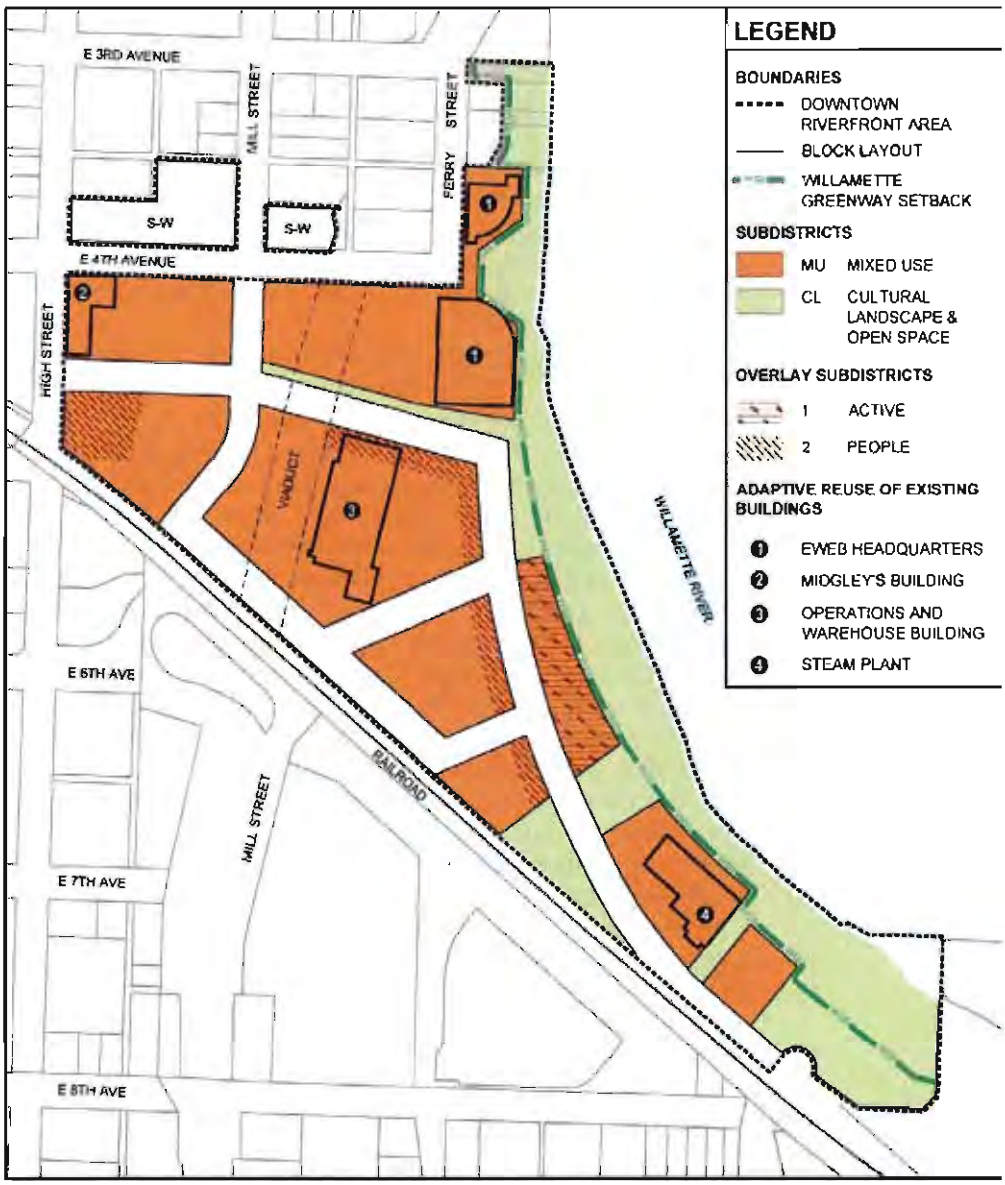
(a) S-DR/MU (Mixed-Use).

(b) S-DR/CL (Cultural Landscape and Open Space).

(2) **Overlay subdistricts**. Overlay subdistricts provide special regulations and standards that supplement regulations and standards of the S-DR/MU subdistrict. Within the S-DR/MU Zone, the two overlay subdistricts are:
(a) S-DR/MU/1 (Active).
(b) S-DR/MU/2 (People).

(3) The boundaries of subdistricts and overlay subdistricts are shown on Figure 9.3135 S-DR Zone Regulating Plan.

Figure 9.3135 S-DR Zone Regulating Plan.



9.3140 <u>S-DR Downtown Riverfront Special Area Zone Siting Requirements</u>. In addition to the approval criteria at EC 9.8865 Zone Change Approval Criteria, the site must be included within the Downtown Riverfront area depicted on Figure 9.3135 S-DR Zone Regulating Plan. When a property is rezoned to S-DR as part of the rezoning process,

the City shall identify the subdistrict designation applicable to the property, in accordance with EC 9.3135 S-DR Downtown Riverfront Special Area Zone Subdistricts and Overlay Subdistricts.

9.3145 S-DR Downtown Riverfront Special Area Zone Permitted Uses. The uses listed at EC 9.3145(1) through (8) are permitted in the S-DR Zone as specified below, except as limited at EC 9.3146 S-DR Downtown Riverfront Special Area Zone Prohibited Uses and EC 9.3147 S-DR Downtown Riverfront Special Area Zone Willamette Greenway Setback. Accessory uses as defined at EC 9.0500 are permitted.

(1) Retail Sales and Service Uses. Permitted as specified in (a) through (c) below. This category of uses refers to the sale, lease, or rent of products to the general public; personal services; entertainment; product repair; or services for consumer and business goods.

(a) Retail Sales-Oriented. Permitted in S-DR/MU, S-DR/MU/1, and S-DR/MU/2. Examples include, but are not limited to:
1. Consumer home and business goods stores;
2. Consumer vehicle stores (including passenger vehicles, motorcycles, light and medium trucks, boat and watercraft, bicycles, and other recreational vehicles) provided the activity is within a building;
3. General merchandise stores (including supermarket and department stores).

(b) Personal Service-Oriented. Permitted in S-DR/MU, S-DR/MU/1 (above ground floor only), and S-DR/MU/2. Examples include, but are not limited to:
1. Banks and credit unions;
2. Business, arts, and other trade schools;
3. Dance or music studios;
4. Mail, photo, copy, and package services;
5. Personal care services;
6. Urgent medical care.

(c) Entertainment-Oriented. Permitted in S-DR/MU, S-DR/MU/1, and S-DR/MU/2. Examples include, but are not limited to:
1. Artist galleries and studios;
2. Health clubs, gyms, membership clubs, and lodges;
3. Hotels, motels, and other temporary lodging;
4. Indoor or outdoor entertainment activities (including pool halls, bowling alleys, ice rinks, and game arcades);
5. Restaurants, cafes, delicatessens, taverns, and bars;
6. Theaters.

(2) Office Uses. Permitted in S-DR/MU, S-DR/MU/1 (above ground floor only), and S-DR/MU/2 (above ground floor only). This category of uses refers to activities conducted in an office setting generally focused on business, professional, medical, or financial services. Examples include, but are not limited to:
(a) Financial businesses (including lenders, brokerage houses, bank headquarters, and real estate agents);
(b) Medical and dental clinics and laboratories;
(c) Professional services (including lawyers, accountants, engineers, architects, and planners);
(d) Sales offices;
(e) TV and radio studios.

(3) Residential Uses. Permitted in S-DR/MU, S-DR/MU/1 (above ground floor only), and S-DR/MU/2. This category of uses refers to the residential occupancy of a dwelling unit by one family. Tenancy is arranged for a minimum of 30 days or

longer. Uses where tenancy may be arranged for a shorter period are not considered residential. They are considered to be a form of temporary lodging and are listed under "Retail Sales and Service". Examples of residential uses include, but are not limited to:

(a) Apartments and retirement center apartments (including those with accessory services such as food service, dining rooms, and housekeeping);
(b) Condominiums;
(c) Rowhouses.

(4) Institutional Uses. Permitted in S-DR/MU and S-DR/MU/2 (above ground floor only). This category of uses refers to activities of a public, nonprofit, or charitable entity, which provide a local service to the community. Generally, they provide the service on the site or have employees at the site on a regular basis. Examples include, but are not limited to:

(a) Community centers;
(b) Daycare, preschools, and nursery schools;
(c) Government services;
(d) Libraries, museums, and interpretive centers;
(e) Municipal services (including drive-through facilities);
(f) Public and private schools, colleges, and universities;
(g) Religious institutions;
(h) Senior centers;
(i) Transit stations.

(5) Manufacturing and Production Uses. Permitted in S-DR/MU. This category of uses refers to the manufacturing, processing, fabrication, packaging, or assembly of goods. Examples include, but are not limited to:

(a) Breweries, distilleries, and wineries;
(b) Catering establishments;
(c) Processing of food and related products;
(d) Production of energy;
(e) Weaving or production of textiles or apparel;
(f) Woodworking (including cabinet makers).

(6) Industrial Service Uses. Permitted in S-DR/MU. This category of uses refers to the repair or servicing of industrial, business, or consumer machinery, equipment, products, or by-products. Examples include, but are not limited to:

(a) Electric motor repair;
(b) Printing, publishing, and lithography;
(c) Research and development laboratories;
(d) Repair of scientific or professional instruments;
(e) Sales, repair, or storage for building, heating, plumbing or electrical contractors;

(7) Parks and Open Space Uses. Permitted in S-DR/MU, S-DR/MU/1, and S-DR/MU/2. Permitted in S-DR/CL subject to EC 9.3190 S-DR Downtown Riverfront Special Area Zone Design Review. This category of uses refers to natural areas; large areas consisting mostly of vegetative landscaping; outdoor recreation features or facilities; community gardens; public squares, plazas, or boardwalks used for public recreational activities; and areas having scenic, biological, or ecological significance identified for preservation or enhancement. Examples include, but are not limited to:

(a) Parks, public squares, plazas, boardwalks, fountains, arboretums, trails, multi-use paths, gardens, and natural areas;
(b) Park furnishings (including play equipment, picnic tables, benches, bicycle racks, and interpretive signage);

(c) Park structures (including kiosks, gazebos, pavilions, picnic shelters, pergola, arbors, and restrooms);
(d) Green infrastructure (including infiltration planters, rain gardens, flow-through planters, vegetated swales, vegetated filter strips, and water quality ponds, basins, and wetlands).

(8) Utilities and Communications Uses. Permitted in S-DR/CL and S-DR/MU. This category of uses refers to infrastructure services that include, but are not limited to:
(a) Water, gas, sanitary sewer, storm sewer, electric, telephone, and cable service infrastructure;
(b) Pumping stations, underground transmission facilities, and substations;
(c) District heating and cooling systems (including geothermal wells);
(d) Related physical facilities that do not include buildings regularly occupied by employees, parking areas, or vehicle, equipment, or material storage areas.

9.3146 S-DR Downtown Riverfront Special Area Zone Prohibited Uses. The following uses are not permitted in the S-DR Zone.

(1) The following "Retail Sales and Service Uses" are not permitted.
(a) Agricultural Machinery Rental;
(b) Casinos;
(c) Drive-through facilities, except as permitted at EC 9.3145(4)(e);
(d) Indoor firing ranges;
(e) Heavy Equipment Sales;
(f) Kennels;
(g) Mortuaries;
(h) Outdoor sales or leasing of consumer vehicles, including passenger vehicles, motorcycles, light and medium trucks, boat and watercraft, and other recreational vehicles;
(i) Recreational vehicle parks;
(j) Recycling or transfer stations (with the exception of small recycling center as defined at EC 9.0500);
(k) Taxidermists;
(l) Vehicle service such as motor vehicle repair, tires sales and service, gas station, or car wash.

(2) The following "Residential Uses" are not permitted.
(a) Detached single-family dwellings;
(b) Duplexes;
(c) Manufactured housing.

(3) The following "Institutional Uses" are not permitted.
(a) Cemeteries;
(b) Correctional facility.

(4) The following "Manufacturing and Production Uses" are not permitted.
(a) Concrete batching and asphalt mixing;
(b) Feed lots;
(c) Lumber mills, pulp and paper mills, and other wood products manufacturing;
(d) Production of pre-fabricated structures (including manufactured homes;
(e) Slaughterhouses and meatpacking).

(5) The following "Industrial Service Uses" are not permitted.
(a) Auto and truck salvage and wrecking;
(b) Exterminators;
(c) Fuel oil distributors;
(d) Heavy truck servicing and repair;
(e) Machine shops;

(f) Salvage or wrecking of heavy machinery, metal, and building materials;
(g) Solid fuel yards;
(h) Tire re-treading or recapping;
(i) Towing and vehicle storage;
(j) Truck stops;
(k) Welding shops.

(6) The following "Parks and Open Space Uses" are not permitted.
(a) Camping;
(b) Community and neighborhood centers within with S-DR/CL subdistrict (permitted in the S-DR/MU subdistrict);
(c) Golf course (including driving range);
(d) Dwellings.

(7) The following "Utilities and Communications Uses" are not permitted. Telecommunications facilities, except for telecommunications collocation and antenna, as defined at EC 9.0500 and in accordance with EC 9.5750, where applicable.

9.3147 S-DR Downtown Riverfront Special Area Zone Willamette Greenway Setback.

(1) In accordance with the requirements at EC 9.8815(5)(a), a setback line is established to keep structures separated from the Willamette River to protect, maintain, preserve, and enhance the natural, scenic, historic, and recreational qualities of the Willamette Greenway as shown in Figure 9.3135 S-DR Zone Regulating Plan and on Exhibit [reference] (Ordinance No. [reference]).

(2) Uses permitted in the S-DR/CL subdistrict listed at EC 9.3145(7) have been determined to be consistent with the establishment of the setback, are permitted within the setback, and are considered water-related or water-dependent activities.

9.3148 S-DR Downtown Riverfront Special Area Zone Special Use Standards for Adaptive Reuse of Existing Buildings.

(1) For any alterations, expansions, or changes of use of the EWEB Headquarters, Steam Plant, Midgely's Building, and Operations Building/Warehouse, as identified on Figure EC 9.3135 S-DR Zone Regulating Plan, the General Standards for All Development at EC 9.6200 through EC 9.6255, EC 9.6400 through EC 9.6440, EC 9.6500 through EC 9.6505, EC 9.6700 through EC 9.6797, and EC 9.6800 through EC 9.6875 do not apply.

(2) Alterations and expansion are limited to three additional stories, shall not exceed applicable maximum building height standards at EC 9.3155(3), shall not increase the existing building footprint more than 30 percent, and in no case shall encroach within the Willamette Greenway Setback for a use that is not water-related or water-dependent.

(3) Minimum ground floor height standards at EC 9.3155(3) and outdoor storage standards at EC 9.3155(10) do not apply.

9.3150 S-DR Downtown Riverfront Special Area Zone Lot Standards.

(1) **Lot Frontage Minimum**. Except for rowhouse lots, all lots within the S-DR Zone shall have a minimum lot frontage of 40 feet. Lot frontage minimums do not apply to rowhouse lots.

(2) **Lot Depth Minimum**. Lots within the S-DR/MU/1 overlay subdistrict must have frontage on a public street and extend the full lot depth from the street to the property line.

(3) Design Review. As an alternative to compliance with (1) and (2) above, an applicant may apply for approval of an alternative through the Design Review process in accordance with the provisions of EC 9.3190.

9.3155 S-DR Downtown Riverfront Special Area Zone General Development Standards (applicable to all property).

(1) Application of Standards. The Special Development Standards for Certain Uses at EC 9.5000 through 9.5350 and the General Standards for All Development at EC 9.6000 through 9.6885 apply within the S-DR Zone, except as provided in (9) and (14) below, and, except as provided at EC 9.3148 through EC 9.3185. In the event of a conflict, the provisions of EC 9.3148 to EC 9.3185 shall control.

(2) Setbacks (Building and Yard). Unless otherwise specified at EC 9.3180 through EC 9.3185, there are no minimum front or interior yard setbacks for a building or structure.

(3) Building Height. Minimum and maximum building heights shall be determined using Figure EC 9.3155(2) S-DR Zone Height Regulating Plan and Figures EC 9.3155(3)(a) through (g). In the event of a conflict between the written text and the figures, the figures shall control.

(4) Building Stepbacks. Required building stepbacks in the S-DR Zone are shown on Figures EC 9.3155(3)(a) through (g) and on Figure 4-3 of the *Downtown Riverfront Specific Area Plan*. Stepbacks are measured from the front of the building facing a primary street and, where applicable, from the side of the building when abutting the S-DR/CL subdistrict.

(5) Building Orientation. All buildings within the S-DR Zone shall be oriented to a public street, except when buildings cannot be oriented to the street due to less than required lot frontage, as specified at EC 9.3150(1). In this case, buildings may be oriented to a private street, which shall be developed in accordance with EC 9.3160.

(6) Building Entrances. Buildings fronting on a street shown in Figure EC 9.3160(1) S-DR Zone Street Network must provide a main entrance on the facade of the building facing the street. A main entrance is the principal entry through which people enter the building. A building may have more than one main entrance. Buildings having frontage on more than one street shall provide at least one main entrance oriented to a street, or to the corner where two streets intersect.

(7) Building Projections. Building projections such as bay windows and articulated balconies are permitted for no more than 50 percent of the length of the affected floor. No projection shall extend to more than 5 feet over the public right-of-way.

(8) Weather Protection. Weather protection features such as canopies, awnings, or arcades shall be provided over at least the full width of all building entrances to a depth of at least 3 feet beyond the face of the building.

(9) Multiple-Family Standards. The Multiple-Family Standards at EC 9.5500(1) through (14) are not applicable in the S-DR Zone, except for the following. The requirements at EC 9.5500(9)(a), (b), and (d) apply within the S-DR Zone.

(10) Outdoor Storage. For non-residential development, no outdoor storage is permitted except for equipment used by an outdoor restaurant or cafe.

(11) Outdoor Lighting. Outdoor lighting shall conform to standards specified at EC 9.6725 as indicated below:

(a) Notwithstanding any other provisions of this code, outdoor lighting of a building facade is permitted if provided in accordance with the standards for a building of exceptional symbolic or historic significance (refer to EC 9.6725(13)).

(b) Outdoor lighting in the S-DR/MU subdistrict shall conform to standards specified at EC 9.6725(8)(c) – Medium Ambient.

(c) Outdoor lighting in the S-DR/CL subdistrict shall conform to standards specified at EC 9.6725(8)(a) – Low Ambient.

(12) Delivery and Loading Areas. All delivery and loading areas in the S-DR/MU subdistrict shall meet the following standards.

(a) Maneuvering and circulation related to delivery and loading is not permitted between the street and the portion of a building used to comply with building setback requirements.

(b) All loading spaces shall be off the street, shall be in addition to required motor vehicle parking spaces, and shall be served by service drives, alleys, private accessways, or maneuvering areas so that no backward movement or other vehicle maneuvering within a street will be required.

(c) All off-street loading spaces shall be on interior service courts, alleys, or screened from view from all adjacent property lines according to EC 9.6210(4) High Wall Landscape Standards (L-4).

(d) The above standards do not apply to development in the S-DR/MU/1 overlay subdistrict.

(13) Signs. Signs shall conform to standards specified at EC 9.6670 Central Commercial.

(14) Pedestrian Circulation. The provisions of EC 9.6730(3)(c) do not apply within the S-DR Zone.

(15) Structured Parking. One percent of the total cost of the structure must be used to include public art as a component of the parking structure. Public art used to comply with this standard shall be located on the exterior of the parking structure. Compliance with this standard shall be demonstrated at the time of building permit.

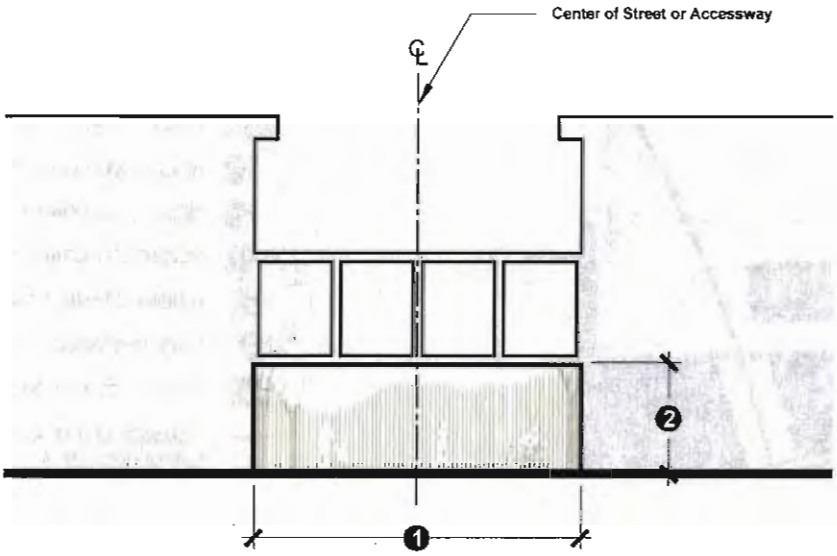
(16) View Corridor Requirements. To ensure that development provides view corridors in those areas identified on Figure 4-4 of the *Downtown Riverfront Specific Area Plan*, in addition to compliance with other applicable standards of the S-DR Zone, development shall comply with the following:

(a) Sky-bridges, pedestrian walkways, and similar elements that connect buildings are permitted encroachments within view corridors.

(b) Permitted encroachments shall be consistent with the minimum dimensions shown in Figure 9.3155(1) S-DR Zone Encroachments.

(17) Prior Developed Areas. The standards and requirements at EC 9.4900 through EC 9.4980 do not apply to prior developed areas pursuant to EC 9.4920(5) as identified on Exhibit [reference] (Ordinance No. [reference]) that remain consistent with the *Downtown Riverfront Specific Area Plan*.

Figure 9.3155(1) S-DR Zone Encroachments.



NOTES

1. Encroachments:
   20 feet minimum width measured offset from the centerline of the view corridor.
2. 12 feet minimum in height above grade

PURPOSE

The purpose of Figure 9.3155(1) is to demonstrate how permitted encroachments shall be designed consistent with View Corridor requirements.

Figure EC 9.3155(2) S-DR Zone Height Regulating Plan.

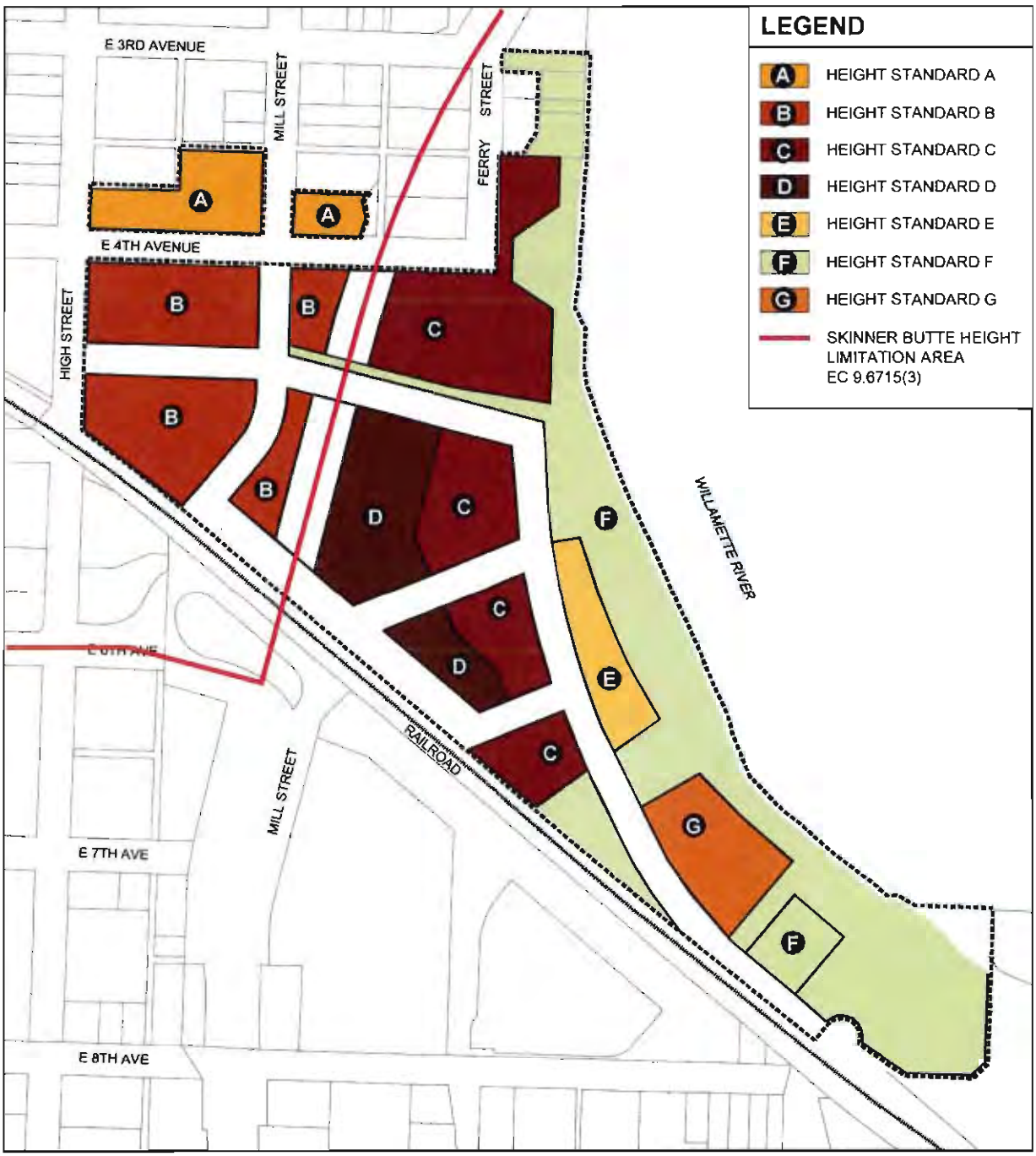


Figure 9.3155(3)(a) S-DR Zone Height Standard "A".
The height limitations in EC 9.3915(7) apply.

Figure 9.3155(3)(b) S-DR Zone Height Standard "B".

KEY

Build-to line (BTL)
Property Line

Maximum building envelope

Minimum building envelope

❶ Buildings shall be a maximum elevation of **500** feet above sea level.

❷ Buildings shall be a minimum of three stories; with **50** percent of the building footprint allowed to be one story.

❸ The ground floor height shall be a minimum of **14** feet measured from floor to floor.

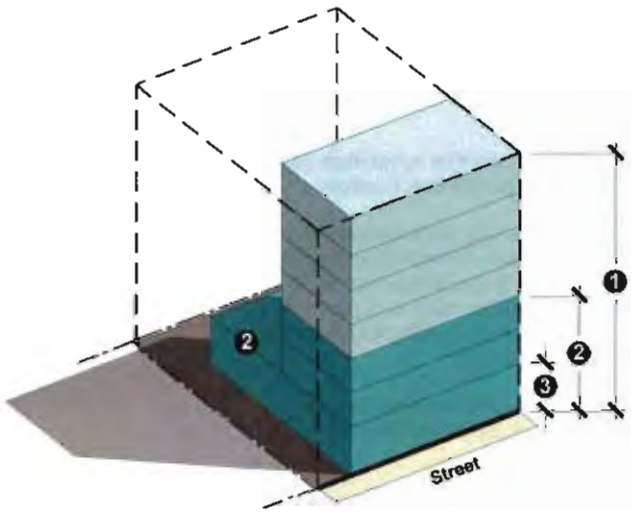


Figure 9.3155(3)(c) S-DR Zone Height Standard "C".

KEY

Build-to line (BTL)
Property line

Maximum building envelope

Minimum building envelope

❶ Buildings shall be a maximum height of **80** feet.

❷ Buildings shall be a minimum of three stories; with **50** percent of the building footprint allowed to be one story.

❸ The ground floor height shall be a minimum of **14** feet measured from floor to floor.

❹ A minimum **10**-foot stepback is required above **60** feet, measured from the front of the building facing a primary street.

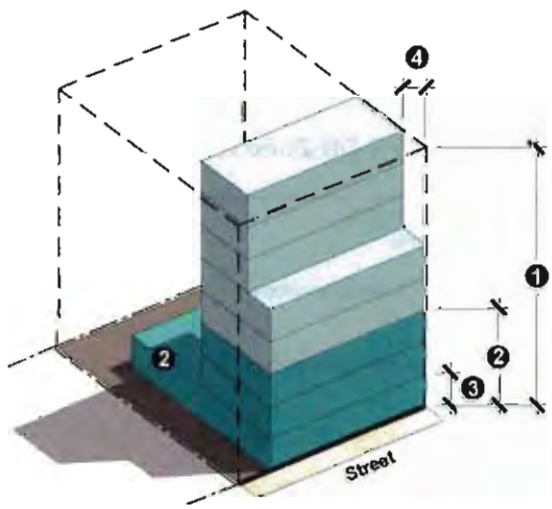


Figure 9.3155(3)(d) S-DR Zone Height Standard "D".

KEY

Build-to line (BTL)
Property line

Maximum building envelope

Minimum building envelope

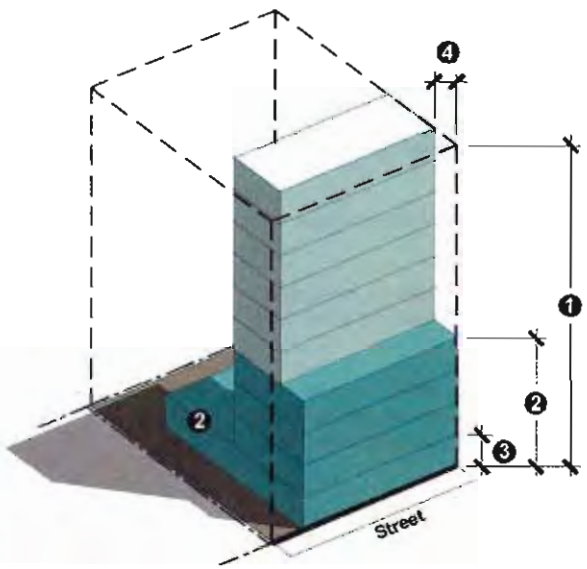
❶ Buildings shall be a maximum height of 120 feet with Bulk Controls.

❷ Buildings shall be a minimum of four stories, with the exception of buildings containing residential uses, which shall be a minimum of three stories; with 50 percent of the building footprint allowed to be one story.

❸ The ground floor height shall be a minimum of 14 feet measured from floor to floor.

❹ A minimum 10-foot stepback is required above 50 feet, measured from the front of the building facing a primary street. For buildings less than 80 feet in height, the stepback standards in Figure 9.3155(3)(c) apply.

❺ 8,000 SF Maximum Footprint Bulk Control applies to buildings taller than 80 feet in height.



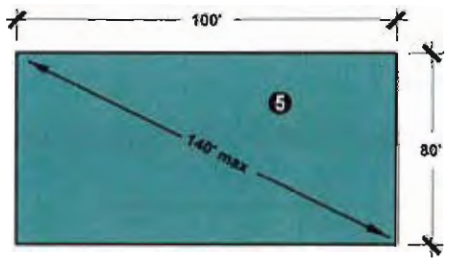


Figure 9.3155(3)(e) S-DR Zone Height Standard "E".

KEY

Build-to line (BTL)
Property line

Maximum building envelope

Minimum building envelope

❶ Residential Uses: Maximum height of 38 feet.
Non-residential Uses: Maximum height of 30 feet.

❷ Buildings shall be a minimum height of 14 feet.

❸ The ground floor height shall be a minimum of 14 feet as measured from floor to floor.

❹ Rooftop trellises or weather protection may project a maximum of 10 feet above the maximum building height.

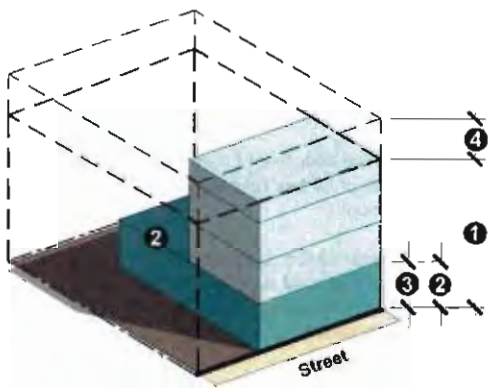


Figure 9.3155(3)(f) S-DR Zone Height Standard "F".

KEY

Property line

Maximum building envelope
No Minimum

❶ Buildings shall be a maximum height of **30** feet.

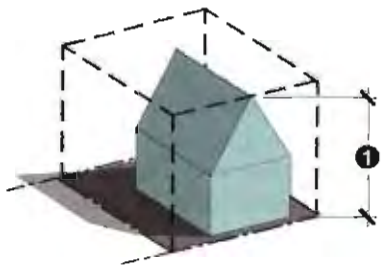


Figure 9.3155(3)(g) S-DR Zone Height Standard "G".

KEY

Build-to line (BTL)
Property line

Existing building envelope

Building addition envelope

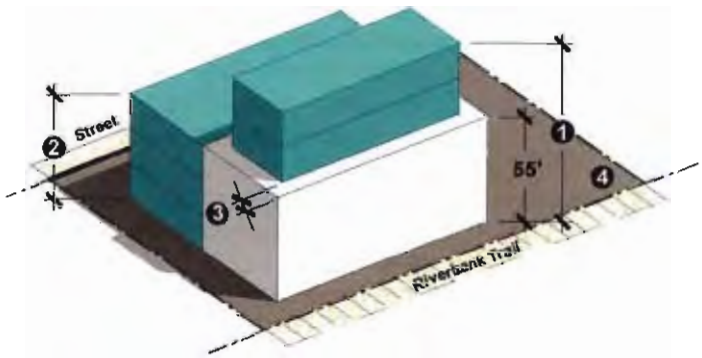
❶ Within the existing building footprint, additions shall be a maximum height of **75** feet.

❷ Outside the existing building footprint, additions shall be a maximum height of **55** feet.

❸ A **5** foot minimum stepback is required above **55** feet, measured from all sides of the existing building.

Upon demolition of the Steam Plant The following standards apply:

❹ New development shall be a maximum height of **55** feet. The standards at EC 9.3180(2) are not applicable.



9.3160 S-DR Downtown Riverfront Special Area Zone Transportation System Standards.

(1) General Application of Standards. Transportation facilities shall be located and constructed to standards at EC 9.6505 and EC 9.6800 through 9.6875, unless otherwise specified herein. In the event of a conflict between standards, the specific standards at EC 9.3160 shall control.

(2) Transportation Network. The Street Connectivity Standards at EC 9.6815 do not apply in the S-DR Zone. The location of streets, alleys, and accessways shall be consistent with Figure EC 9.3160(1) S-DR Zone Street Network. The following requirements shall guide the location and design of streets within the S-DR Zone.

(a) The planned Great Street/Festival Street shall connect to High Street, in a location at least 100 feet north of the railroad tracks, and the planned at-grade railroad crossing at the extension of 8th Avenue to form a continuous great loop.

(b) The planned Mill Street shall be extended through the S-DR Zone to connect with the planned street adjacent to the Railroad line.

(c) The planned Secondary Street adjacent to the Railroad line shall connect to the planned extension of Mill Street and the planned street connection to the Festival Street, or extend itself to the Festival Street.

(d) A minimum of one street shall connect the planned street adjacent to the Railroad line with the Festival Street.

(e) Mid-block public alleys or accessways shall be provided, as conceptually shown on Figure 9.3160(1) S-DR Zone Street Network, for access to properties fronting streets or public open space.

(3) Street Classifications. Except for alleys and accessways, all streets in Figure EC 9.3160(1) S-DR Zone Street Network are classified as public local commercial-industrial streets.

(4) Minimum Street Rights-of-Way and Street Design Standards. The Street Width Standards at EC 9.6870 do not apply in the S-DR Zone.

(a) Street right-of-way must be the minimum width indicated in Figures EC 9.3160(2)(a) through (e).

(b) Streets shall be constructed as indicated in Figures EC 9.3160(2)(a) through (e).

(c) Streets shall include on-street parking as indicated in Figures EC 9.3160(2)(a) through (e).

(d) Stormwater runoff from streets shall be treated by curbside green infrastructure systems identified at EC 9.3145(7)(d).

(e) Curb extensions shall be provided at street intersections and mid-block crossings.

(f) Street trees shall be provided at a minimum spacing of 25 feet on center.

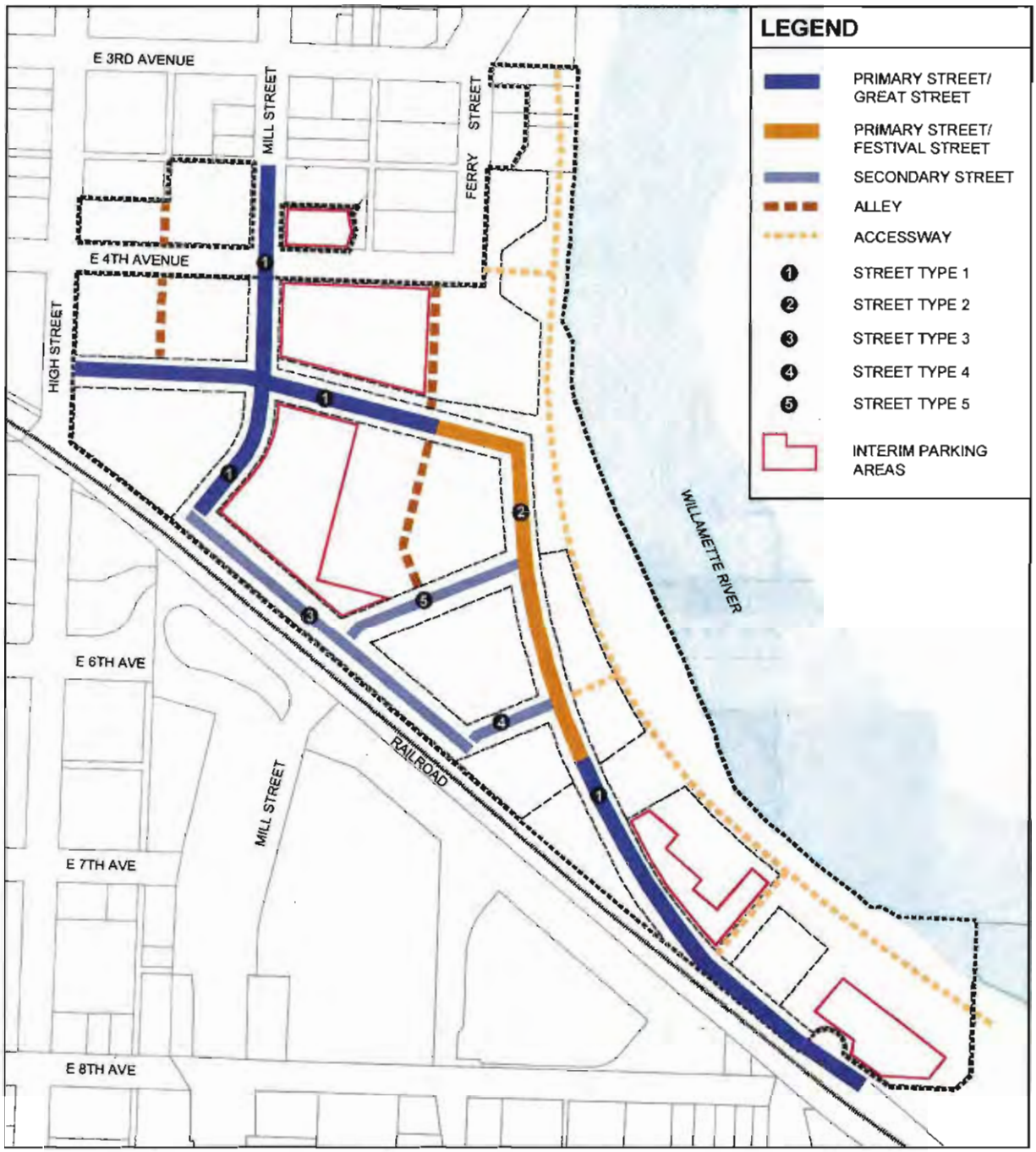
(g) Curb cuts other than required for alleys or accessways along the planned Great Street/Festival Street are prohibited unless the curb cut provides access to the Steam Plant.

(5) Alleys. Alleys shall have a minimum width of 14 feet and a maximum width of 20 feet.

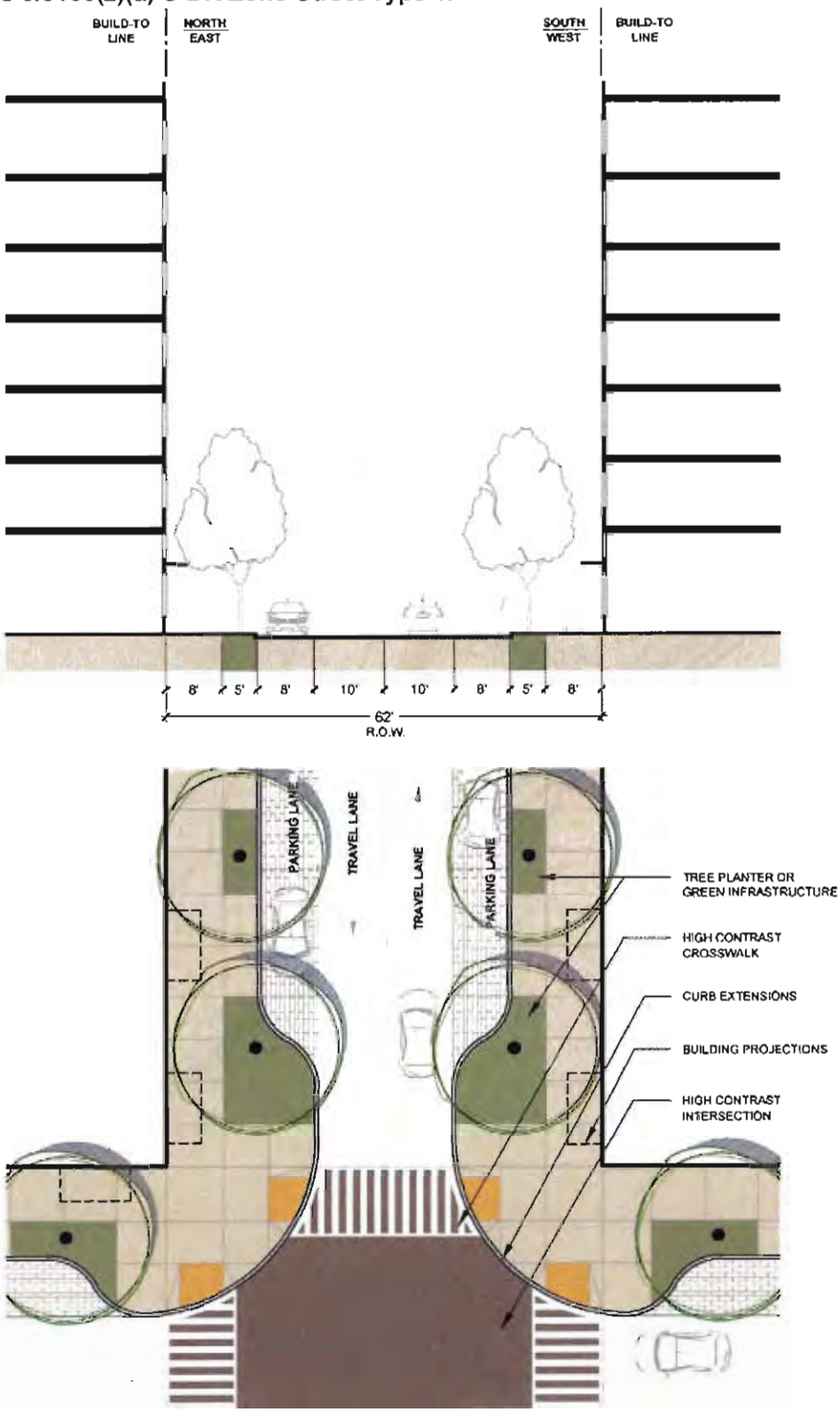
(6) Accessways. Accessways shall have a minimum width of 10 feet and a maximum width of 12 feet.

(7) Design Review. As an alternative to compliance with (2), (4), (5), and (6) above, an applicant may apply for approval of an alternative through the Design Review process in accordance with the provisions of EC 9.3190.

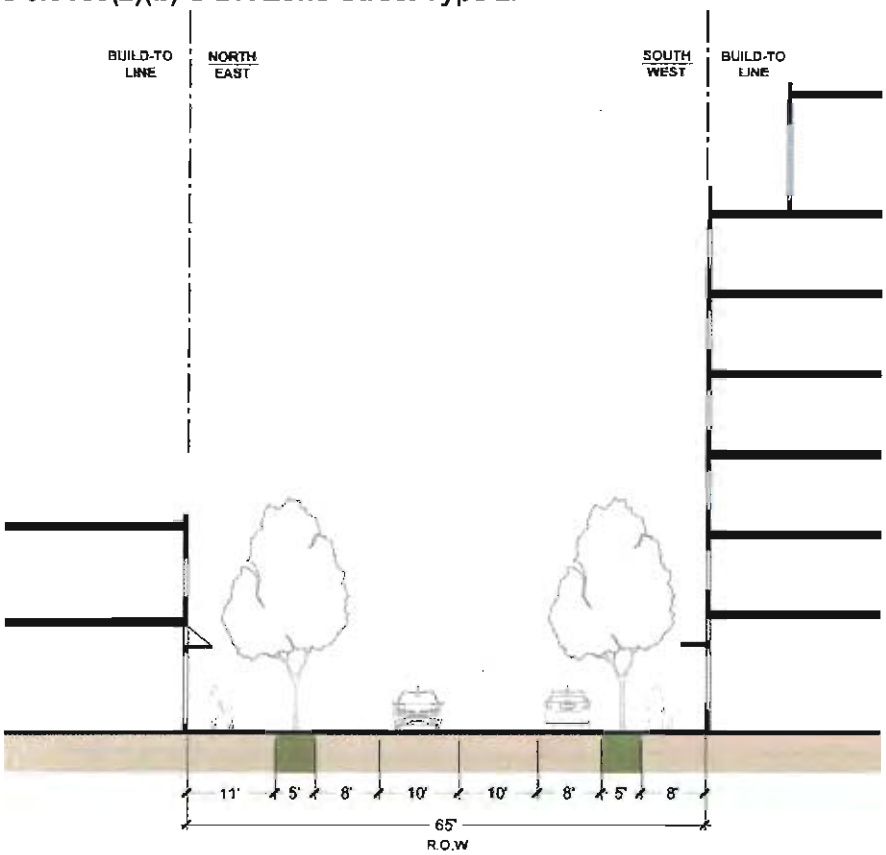
Figure 9.3160(1) S-DR Zone Street Network.

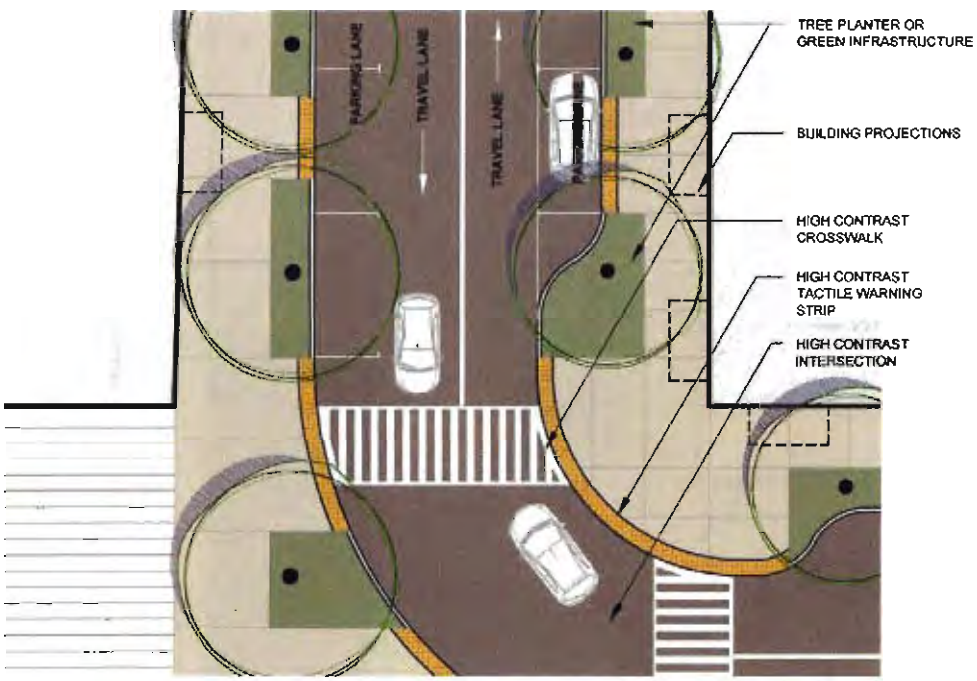


Figures 9.3160(2)(a) S-DR Zone Street Type 1.

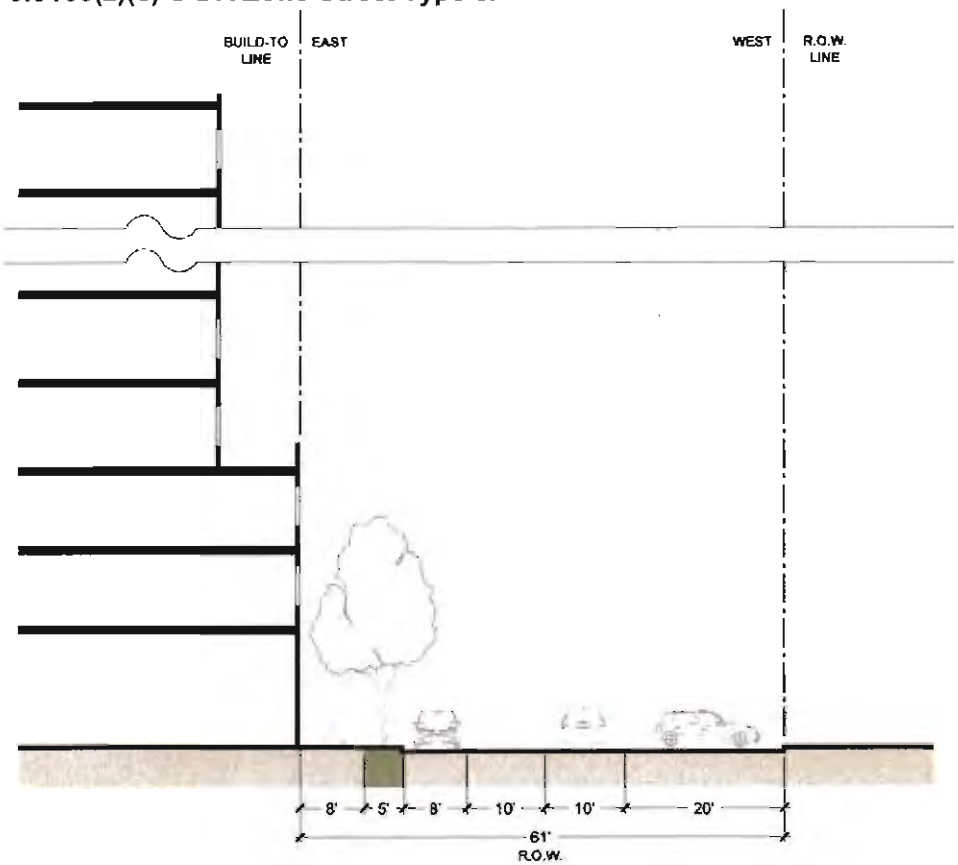


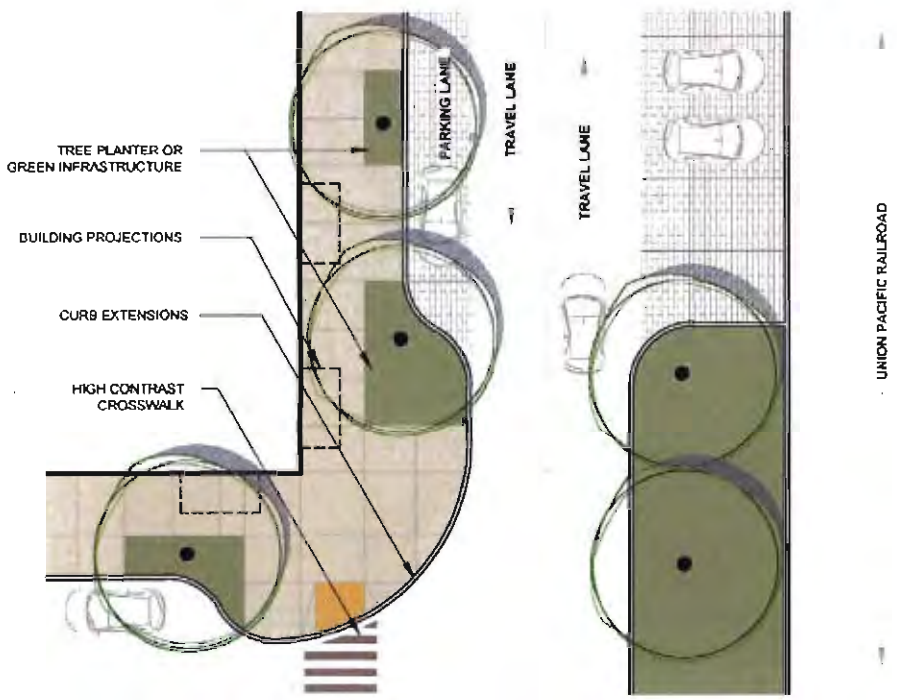
Figures 9.3160(2)(b) S-DR Zone Street Type 2.



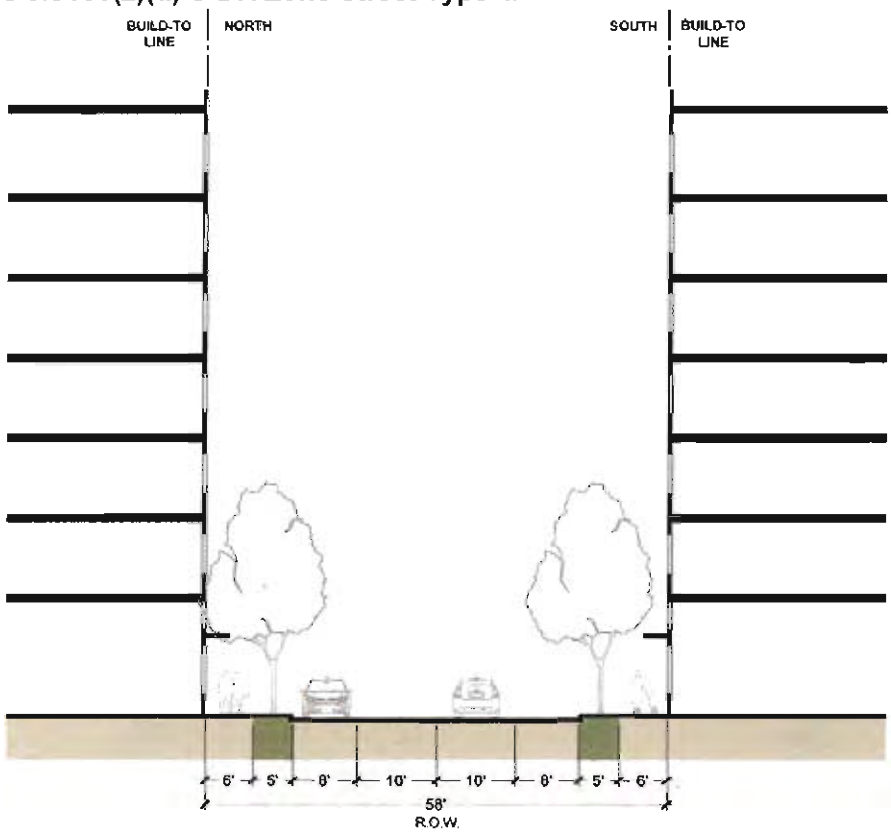


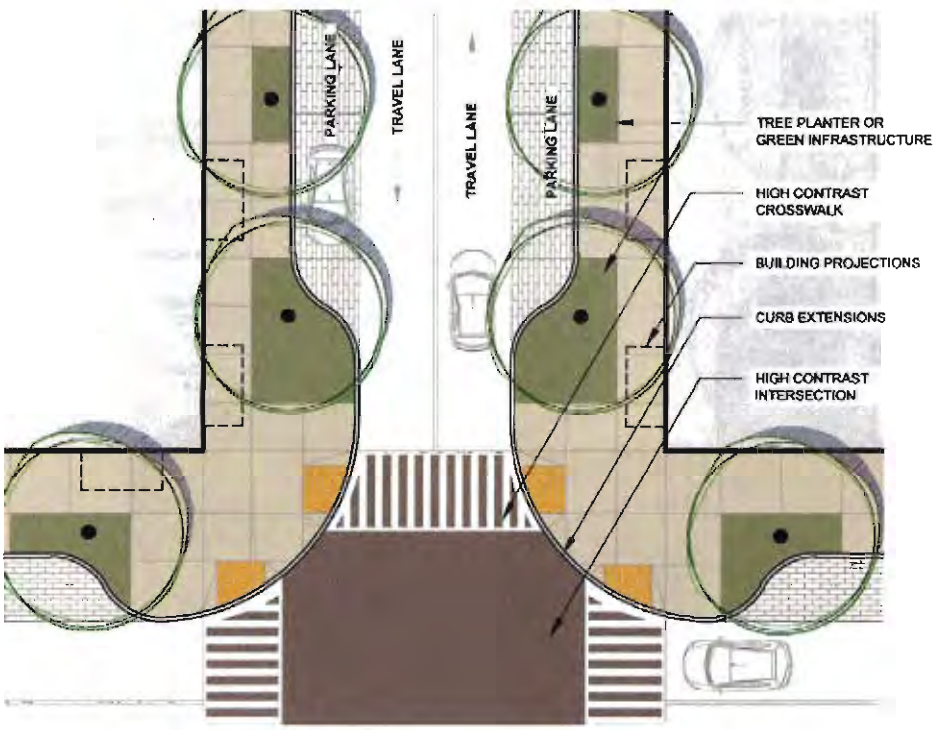
Figures 9.3160(2)(c) S-DR Zone Street Type 3.



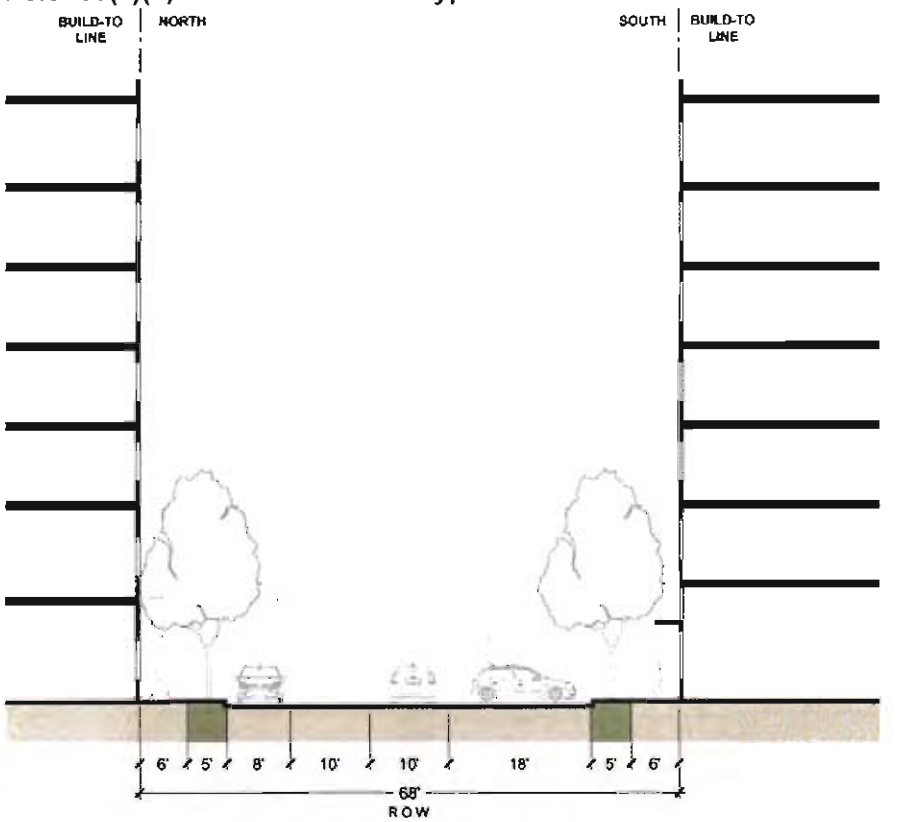


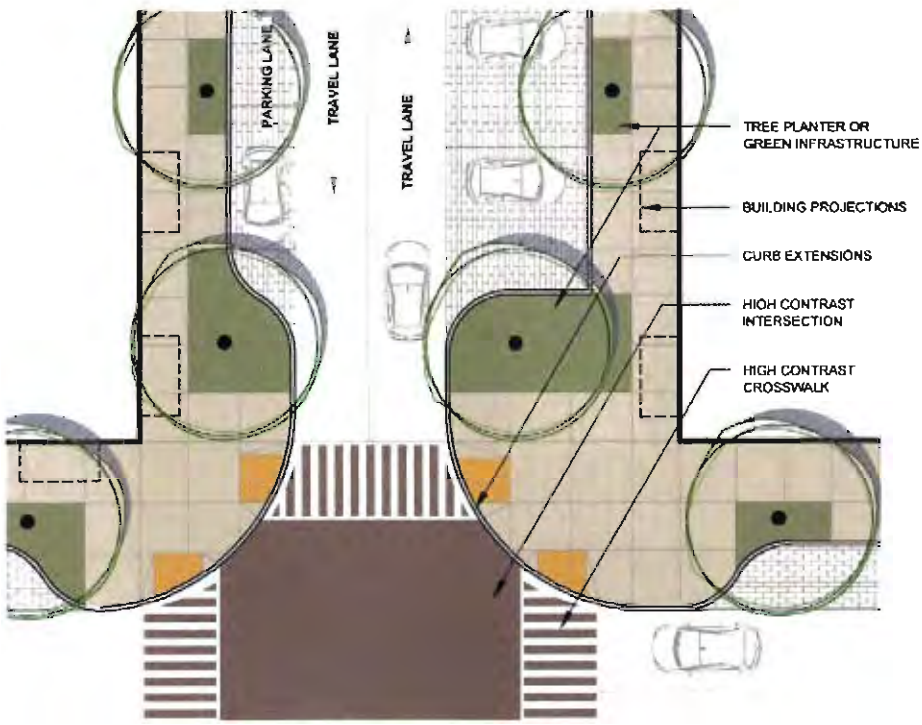
Figures 9.3160(2)(d) S-DR Zone Street Type 4.





Figures 9.3160(2)(e) S-DR Zone Street Type 5.





9.3165 S-DR Downtown Riverfront Special Area Zone Parking Requirements.

(1) Required Off-Street Motor Vehicle Parking. Within the S-DR Zone, the minimum and maximum parking standards in Table EC 9.3165(1) apply instead of the standards in Table EC 9.6410.

Table 9.3165(1) S-DR Motor Vehicle Parking Requirements		
Use	**Minimum Number of Off-Street Parking Spaces**	**Maximum Number of Off-Street Parking Spaces**
Residential	Except as permitted through Design Review pursuant to EC 9.3190, the minimum number of required parking spaces shall be 0.75 parking spaces per dwelling unit.	Except for required parking spaces for persons with disabilities, a maximum of 2.25 parking spaces are allowed per dwelling unit.
Non-Residential	No minimum	Except for required parking for persons with disabilities, and spaces within structured parking with two or more levels, the maximum number of parking spaces is 1 parking space per every 250 square feet of gross floor area.

(a) Location of Required Off-Street Parking. Required off-street parking shall be located on the development site, anywhere within the S-DR Zone boundary, or within ¼ mile (or 1,320 feet) of the S-DR Zone boundary, in accordance with EC 9.6410(1)(a).

(b) Location of On-Site Surface Parking. On-site surface parking must be located at the rear of the building or, in the absence of alley access or a shared private alley, to the side of the building.

(c) Maximum Number of On-Site Surface Parking Spaces. New on-site surface parking areas are limited to 6 spaces total. On-street parking spaces within the public right-of-way and on-site parking spaces for persons with disabilities shall not be counted towards this requirement. Underground, structured, courtyard, and podium parking areas are exempt from this requirement.

(d) Siting and Design. The provisions at EC 9.6415(2); EC 9.6420(1), (2), (3)(a), (3)(b), (3)(e), (4), (5), and (6), apply to the siting and design of parking and loading facilities in the S-DR Zone.

(e) Parking Access. Parking access shall be from an alley. In the absence of an existing or proposed alley, access may be from a secondary street. In the absence of an alley or secondary street, access may be from the front or side of the property. Access must be consistent with the below requirements.

1. Driveways and access connections shall be no more than 20 feet wide.
2. No more than one access connection per tax lot per street frontage shall be allowed except as provided at EC 7.410.
3. Driveways and access connections are not permitted within 50 feet of any intersection of two or more streets, as measured from the nearest property corner abutting the intersection.

(f) (Parking Area Landscaping. The parking area landscaping standards at EC 9.6205 and EC 9.6420(3) apply to off-street parking areas in the S-DR Zone, except the parking area standards at EC 9.6420(3)(c), which are not

applicable in the S-DR Zone. All surface parking areas shall have a landscaped bed around the perimeter measuring 5 feet in width and landscaped to a minimum of the L-2 standard.

(2) Interim Parking. Uses permitted in the S-DR Zone in accordance with EC 9.3145 may use interim parking areas shown on Figure EC 9.3160(1) S-DR Zone Street Network. Interim parking areas are exempt from the requirements at EC 9.6420(3) through (4) and EC 9.6791 through EC 9.6797 until a new use is permitted within the subject area.

(3) Bicycle Parking. The minimum and maximum parking standards in Table EC 9.3165(3) apply instead of the standards in Table 9.6105(4).

Table 9.3165(3) S-DR Bicycle Parking Requirements

Use	Minimum Number of Bicycle Parking Spaces	Maximum Number of Bicycle Parking Spaces	Type and % of Bicycle Parking
Residential	1.5 per dwelling.	No maximum.	10% long term 90% short term
Non-Residential	1 per 2,000 square feet of floor area.	No maximum.	25% long term 75% short term

9.3170 S-DR Downtown Riverfront Special Area Zone Landscape Requirements.

(1) Developments must conform to landscaping requirements at EC 9.6205 through 9.6255, except as provided at subsection (2) below.

(2) Enhanced pedestrian amenities and urban plazas (as defined at EC 9.0500) may be provided in lieu of landscaping, except that shade trees are still required at the ratio of one tree for every 250 square feet of urban plaza area.

9.3175 S-DR Downtown Riverfront Special Area Zone Open Space Requirements.

(1) Multi-family development sites shall include a minimum of 400 square feet of common open space with no minimum dimension of the open space less than 15 feet.

(2) Either 10 percent of the development site or 10 percent of the livable floor area, whichever is greater, shall be provided as open space on the development site.

(3) Up to 50 percent of the required open space under subsections (1) and (2) above may be provided on the development site through the provision of private open space, such as balconies, porches, patios, and eco-roofs.

9.3180 S-DR/MU Downtown Riverfront Special Area Zone Mixed-Use Subdistrict Specific Development Standards.

(1) Applicability. The standards in this section apply to areas shown on Figure 9.3135 S-DR Zone Regulating Plan as S-DR/MU, S-DR/MU/1, and S-DR/MU/2, except as provided in EC 9.3181 and EC 9.3182.

(2) Specific Development Standards.

(a) **Build-to Lines and Setbacks.**

1. Buildings shall face the street and the first two stories shall not be set back from the front property line, except for the following:

a. For buildings that include only residential uses, the entire building shall be set back from the front property line a minimum of 3 feet and a maximum of 8 feet, as shown in Figure EC 9.3180 Note 2.
b. For all other uses, up to 50 percent of the building may be set back from the front property line a maximum of 15 feet, as shown in Figure EC 9.3180 Note 3.
c. The setback area must be an enhanced pedestrian amenity or urban plaza as defined at EC 9.0500.
d. Recessed entries are excluded from the build-to line and setback requirements.

2. Buildings shall be provided along a minimum of 60 percent of the length of the street facing property line, as shown in Figure EC 9.3180 Note 1.
3. Buildings that are chamfered at the corner may be set back from the property line where the chamfer occurs. The maximum width of a chamfered building corner is 20 feet, as shown in Figure EC 9.3180 Note 4.

(b) **Building Transparency**.

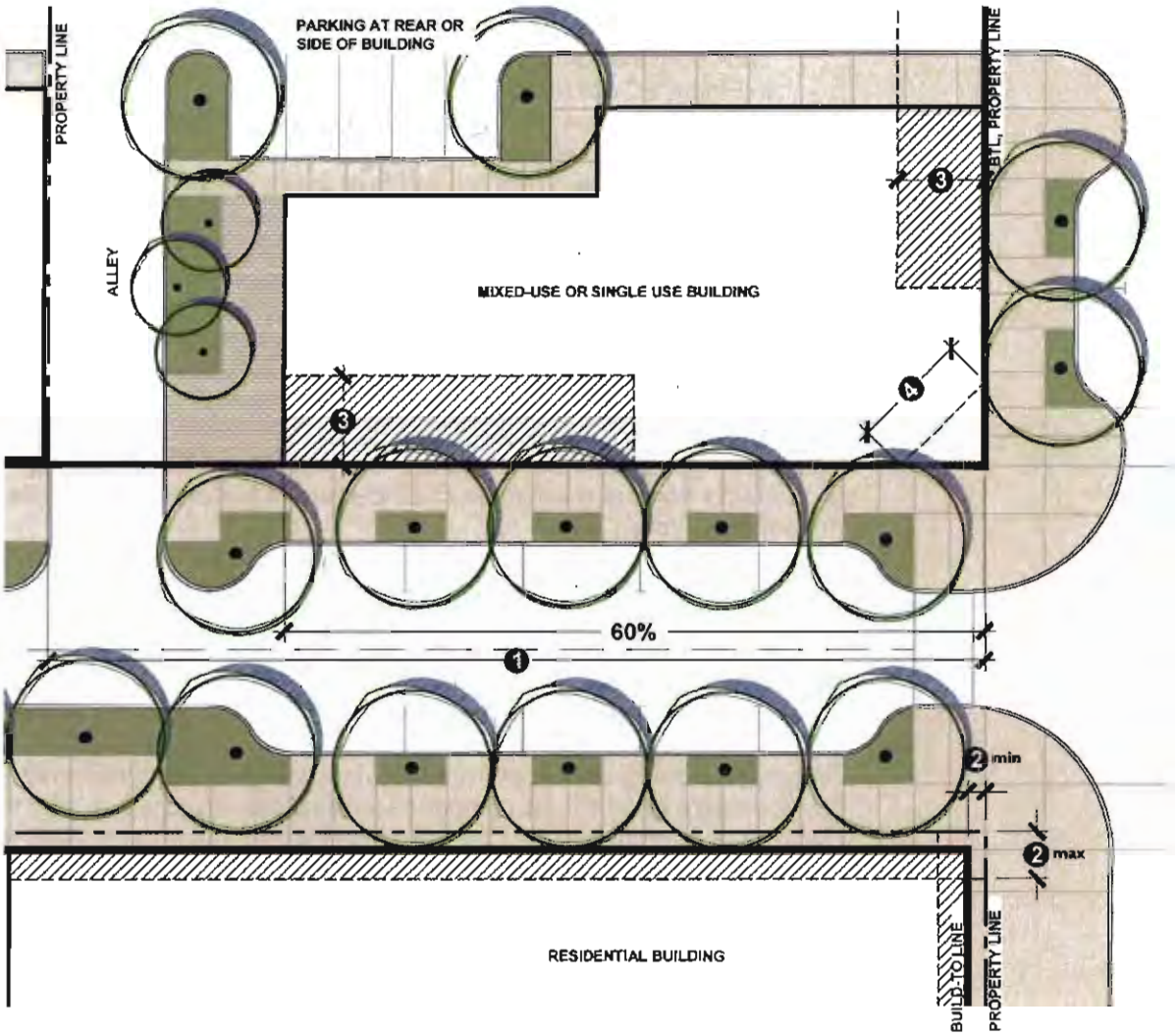
1. Windows, openings, or doorways are required along all street facing ground floor walls at a minimum of 25 percent of the area of applicable ground floor walls.
2. A blank length of wall more than 20 linear feet is prohibited along any street facing facade, unless required for elevator shafts or utility facilities.
3. Windows or openings required at subsection (1.) above must allow two-way visibility and shall have a Visible Light Transmittance (VLT) of 60 percent. 25 percent of the windows required at subsection (1.) above shall have a VLT of 70 percent or greater.
4. Structured parking is exempt from the window requirement, but shall provide openings at the percentages specified at subsection (1.) above.
5. Dwelling units on the ground floor are exempt from the requirements at subsections (1.) and (3.) above.

(c) **Landscape Specifications**.

1. 10 percent of the total area of all development sites shall be landscaped.
2. Landscape installations shall include living plant materials covering a minimum of 70 percent of the required landscape area within 5 years of planting.

(3) Design Review. As an alternative to compliance with (2)(a) through (c) above, an applicant may apply for approval of an alternative through the Design Review process in accordance with the provisions of EC 9.3190.

Figure 9.3180 S-DR/MU Build-to Lines and Setbacks.



KEY

- Build-To-Line (BTL)
- Property Line
- Building Area
- Optional Setback Area

NOTES

1. Street Facing Property Line
2. Setbacks (Residential)
3. Setbacks (Mixed-use or Single Use)
4. Building Chamfer

9.3181 S-DR/MU/1 Downtown Riverfront Special Area Zone Mixed Use Active Overlay Subdistrict Specific Development Standards.

(1) Applicability. The standards in this section apply to areas shown in Figure 9.3135 S-DR Zone Regulating Plan as S-DR/MU/1. In the event of a conflict between the specific development standards in EC 9.3180, the specific development standards in EC 9.3181 shall control.

(2) Specific Development Standards.

(a) **Build-to Lines**.

1. Buildings shall face a primary street and the first two stories shall not be set back from the front property line.
2. Buildings shall be provided along a minimum of 50 percent of the length of the street facing property line.

(b) **Setbacks**.

1. Boardwalk Setback A. End lots are defined as lots abutting the S-DR/CL subdistrict on two sides with frontage on a primary street. Interior lots are defined as lots abutting the S-DR/CL subdistrict on one side with frontage on a primary street. Within end lots and interior lots, the building shall be set back from the rear property line a minimum of 30 feet, as shown in Figure 9.3181 Note 4.
2. Boardwalk Setback B. Within end lots, the building shall be set back from the side property line a minimum of 30 feet, as shown in Figure EC 9.3181 Note 5.
3. Boardwalk Setback C. Within end lots and interior lots, the building shall be set back from the interior property line a minimum of 10 feet, as shown in Figure 9.3181 Note 6.
4. The setback area shall be constructed to the following standards.
   a. The surface must be hardscape and constructed with boardwalk plank-like structures, unit pavers, or colored concrete and meet ADA accessibility standards.
   b. The setback area must be an enhanced pedestrian amenity or urban plaza as defined in EC 9.0500.
   c. 80 percent of the setback area must be accessible from the ground floor of the building.

(c) **Building Transparency**.

1. Windows, openings, or doorways are required along all street facing ground floor walls at a minimum of 60 percent of the length and 25 percent of the area of applicable ground floor walls.
2. Windows shall cover a minimum of 25 percent of the wall area for all floors above the ground floor along all street facing facades.

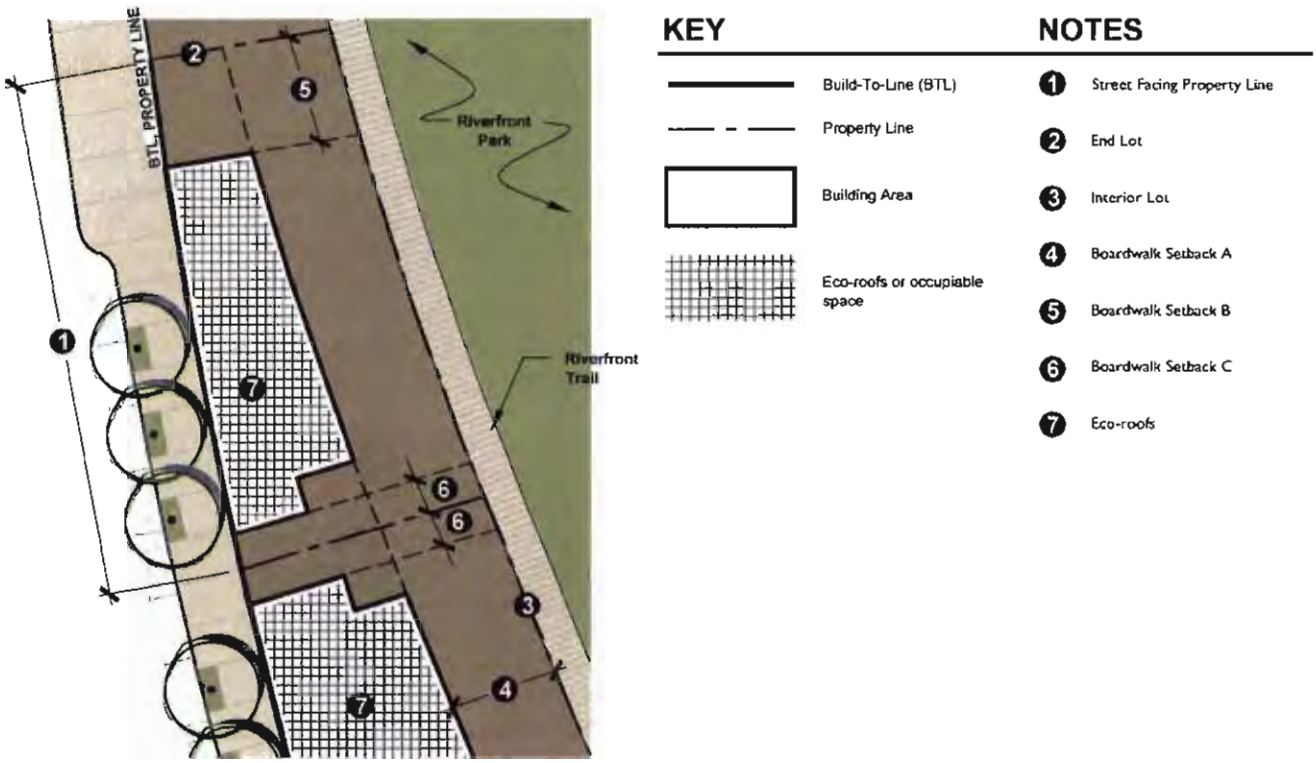
(d) **Eco-roofs**. Buildings must provide eco-roofs or occupiable space on all roof surfaces, with the exception of the following.

1. Roof structures, architectural features, and other devices pursuant to EC 9.6720(1) through (3) and access structures are allowed on roof surfaces. The combined area of such roof structures, architecture features, other devices, and access structures shall not exceed 25 percent of the total roof area.
2. Eco-roofs shall comply with design requirements in the Eugene Stormwater Management Manual.
3. Occupiable space is roof surface used primarily for outdoor seating, dining, gathering, performance, or viewing that consists of surfaces and amenities that support those specific activities.

(e) **Landscape Specifications**. There is no minimum landscape requirement, except as specified at EC 9.3170.

(3) Design Review. As an alternative to compliance with (2)(a) through (e) above, an applicant may apply for approval of an alternative through the Design Review process in accordance with the provisions of EC 9.3190.

Figure 9.3181 S-DR/MU/1 Setbacks.



9.3182 S-DR/MU/2 Downtown Riverfront Special Area Zone Mixed-Use People Overlay Subdistrict Specific Development Standards.

(1) Applicability. The standards in this section apply to areas shown in Figure 9.3135 S-DR Zone Regulating Plan as S-DR/MU/2. In the event of a conflict between the specific development standards in EC 9.3180, the specific development standards in EC 9.3182 shall control.

(2) Specific Development Standards.

(a) **Build-to Lines**.

1. Buildings shall face a public or private street and the first two stories shall not be set back from the front property line, except for the following.
   a. For buildings that include only residential uses, the entire building shall be set back from the front property line a minimum of 3 feet and a maximum of 8 feet, as shown in Figure EC 9.3180 Note 2.
   b. For all other uses, up to 50 percent of the building may be set back from the front property line a maximum of 15 feet, as shown in Figure EC 9.3180 Note 3.

c. The setback area must be an enhanced pedestrian amenity or urban plaza as defined at EC 9.0500.
d. Recessed entries are excluded from the build-to line and setback requirements.

2. Buildings shall be provided along 80 percent of the length of the street facing property line, except where an alley or accessway is provided.
3. Buildings that are chamfered at the corner may be set back from the property line where the chamfer occurs. The maximum width of a chamfered building corner is 20 feet, as shown in Figure EC 9.3180 Note 4.

(b) **Setbacks**.

1. Lots with frontage on High Street and located south of the planned primary street/great street shall have a diagonal front yard setback that is consistent with the standards below, as indicated in Figure 9.3182.
   a. High Street Setback A. The north corner of the building shall be set back a minimum of 50 feet from the property line, as shown in Figure 9.3182 Note 1.
   b. High Street Setback B. The south corner of the building shall be set back a minimum of 30 feet from the property line, as shown in Figure 9.3182 Note 2.
2. The setback area shall be constructed to the following standards.
   a. The surface must be hardscape and constructed with boardwalk plank-like structures, unit pavers, or colored concrete and meet ADA accessibility standards.
   b. The setback area must be an enhanced pedestrian amenity or urban plaza as defined in EC 9.0500.
   c. 80 percent of the setback area must be accessible from the ground floor of the building.

(c) **Building Transparency**.

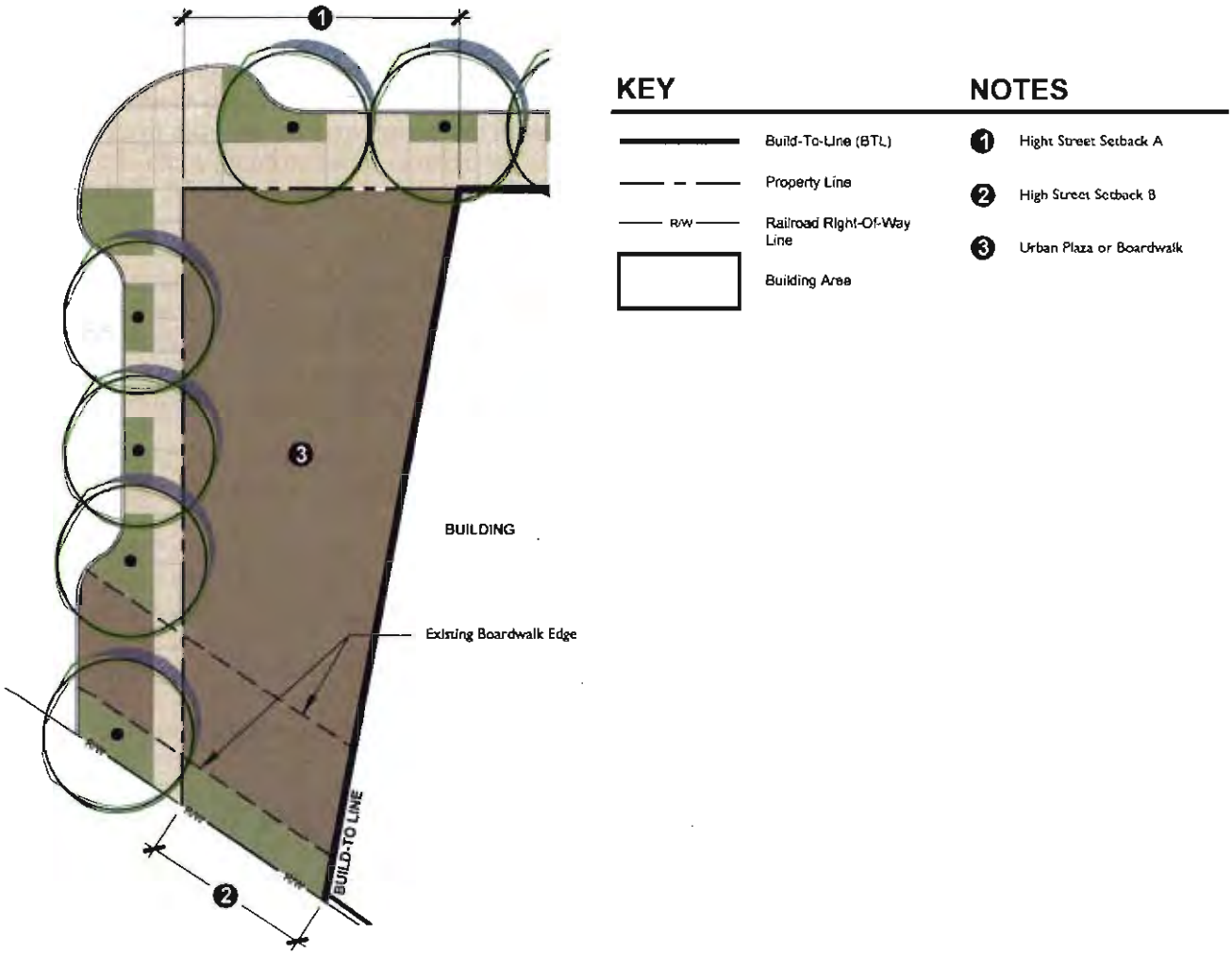
1. Windows, openings, or doorways are required along all street facing ground floor walls at a minimum of 60 percent of the length and 25 percent of the area of applicable ground floor walls.
2. Windows shall cover a minimum of 25 percent of the wall area for all floors above the ground floor along all street facing facades.
3. Dwelling units on the ground floor are exempt from the requirements at subsections (1.) and (2.) above.

(d) **Residential Density**. A minimum of one story of residential use is required. Buildings greater than three stories must provide residential uses consistent with uses listed at EC 9.3145(3) on all stories above the second story.

(e) **Landscape Specifications**. There is no minimum landscape requirement, except as specified at EC 9.3170.

(3) Design Review. As an alternative to compliance with (2)(a) through (e) above, an applicant may apply for approval of an alternative through the Design Review process in accordance with the provisions of EC 9.3190.

Figure 9.3182 S-DR/MU/2 High Street Setbacks.



9.3185 S-DR/CL Downtown Riverfront Special Area Zone Cultural Landscape and Open Space Subdistrict Specific Development Standards.

(1) Applicability. The standards in this section apply to areas shown in Figure 9.3135 S-DR Zone Regulating Plan as S-DR/CL. In the event of a conflict between the specific development standards in this section and other applicable standards, the specific development standards in EC 9.3185 shall control. The general development standards in EC 9.3155(1), (2), (4) through (10), and (12) through (15) do not apply in the S-DR/CL subdistrict.

(2) Permitted Uses. All uses permitted in the S-DR/CL subdistrict in accordance with EC 9.3145(7) are subject to Design Review pursuant to EC 9.3190(2)(d), unless an alternative design to specific standards or guidelines is approved through the provisions at EC 9.3185(4).

(a) **Enhancement**. Where uses are approved in the S-DR/CL subdistrict, an area adjacent to the approved development or use and of equivalent total area to the area impacted by development shall be enhanced consistent with this

subsection and by removing non-native invasive plant species and planting species consistent with subsection (b) below.

1. All refuse, toxic materials, and any fill that limits or decreases the capacity of the area to filter pollutants from runoff that flows across the area shall be removed (not including stormwater collected and discharged from impervious surfaces).
2. Non-native invasive plants shall be permanently removed to the maximum extent practicable and replaced with plant species in accordance with subsection (b) below.

(b) **Planting and Replanting**. Planting or replanting within the S-DR/CL subdistrict shall comply with the following standards.

1. Riverfront Park Planting Standards. In areas designated as riverfront park on Figure EC 9.3185, all of the trees and at least 80 percent of the total number of shrub plants, 60 percent of the total number of grass plants, and 60 percent of the total number of groundcover plants shall consist of plant species selected from the list of native plants in Appendix A of the *Downtown Riverfront Specific Area Plan* or the list of native plants in the *Goal 5 Native and Non-native Plant List* (Exhibit F to Ordinance No. 20351).
2. Riparian Enhancement Planting Standards. In areas designated as riparian enhancement on Figure EC 9.3185, all plantings shall be plant species selected from the list of native plants in Appendix A of the *Downtown Riverfront Specific Area Plan* or the list of native plants in the *Goal 5 Native and Non-native Plant List* (Exhibit F to Ordinance No. 20351).
    a. Planting or replanting within 25 feet of the Willamette River ordinary high water line shall include native tree or large shrub species.
    b. Where non-native or damaged trees are removed within 25 feet of the Willamette River ordinary high water line, they shall be replaced with native tree or large shrub species, unless the tree removal occurs within an identified view corridor shown on Figure 4-4 in the *Downtown Riverfront Specific Area Plan*.
3. Replanting of areas cleared of existing vegetation must be completed within 90 days following the removal or clearing, unless otherwise approved by the planning director.
4. Planting and replanting with seed shall be timed so that germination occurs prior to November 15, unless germination requirements of the seed require otherwise, in which case germination shall be accomplished at the earliest date practicable.
5. Plantings shall not adversely affect adjacent protected water resources or existing native vegetation through shading or invasion by plant species.
6. Non-native invasive species are prohibited in the S-DR Zone.

(c) **Construction Practices**. Construction within the S-DR/CL subdistrict shall comply with the following standards.

1. For purposes of this subsection, heavy machinery is defined as motorized or mechanized machinery or equipment capable of deliberately or inadvertently damaging vegetation, or damaging or compacting soil. The following standards shall apply to use of heavy machinery within the S-DR/CL subdistrict.

a. On sites where soils are susceptible to severe compaction or structural damage when wet or saturated, use of heavy machinery shall be limited to the period between June 15 and September 30, unless otherwise approved by the planning director.
b. Use of heavy machinery shall be the minimum necessary for the use or activity and shall be restricted to those areas where its use is necessary.

2. Petroleum products, chemicals, or other deleterious materials used in the construction process shall not be allowed to enter the Willamette River.

(d) **Filling, Grading, and Excavating**. Filling, grading and excavating within the S-DR/CL subdistrict shall comply with the following standards.

1. Filling, grading, or excavating of more than 500 square feet must comply with Erosion Prevention regulations for sensitive areas in EC 6.645.
2. These activities shall occur between April 15 and October 15 of the same year, unless the planning director authorizes an exception based on dry weather conditions or overriding public need. Exceptions granted due to overriding public need shall require approval of an erosion and sedimentation control plan prior to commencement of earth moving activities, and the plan must be implemented throughout the activity.

(e) **Landform Character**. Grading and excavation conducted as part of restoration or enhancement projects, and bank and channel reconfiguration shall result in topography that resembles natural undulations, meanders, and slopes found in landscapes shaped by natural processes. For purposes of this standard, straight lines and geometric or angular shapes are not acceptable. Channel and stream bank slopes shall not exceed 25 percent.

(f) **Boardwalks, Viewing Platforms, Interpretive Information Kiosks, Trail and Interpretive Signage**. These structures shall be constructed in a manner that involves the least removal of native vegetation practicable. Signs shall be no more than 5 feet tall, and 16 square feet per face in surface area, except for signs intended to be read from moving automobiles, such as site entrance signs, which shall be no more than 8 feet tall and 32 square feet per face in surface area. Kiosks shall be no more than 10 feet tall and 20 square feet per face in surface area.

(g) **Trails**. Except for the Riverbank Trail System, which is considered a multi-use path for the purposes of the S-DR Zone and may be constructed of impervious material, trails shall be constructed of gravel, wood chips or other pervious material, unless otherwise approved by the planning director. Trail construction shall involve the least removal of native vegetation practicable for the area and the minimum amount of fill or excavation practicable.

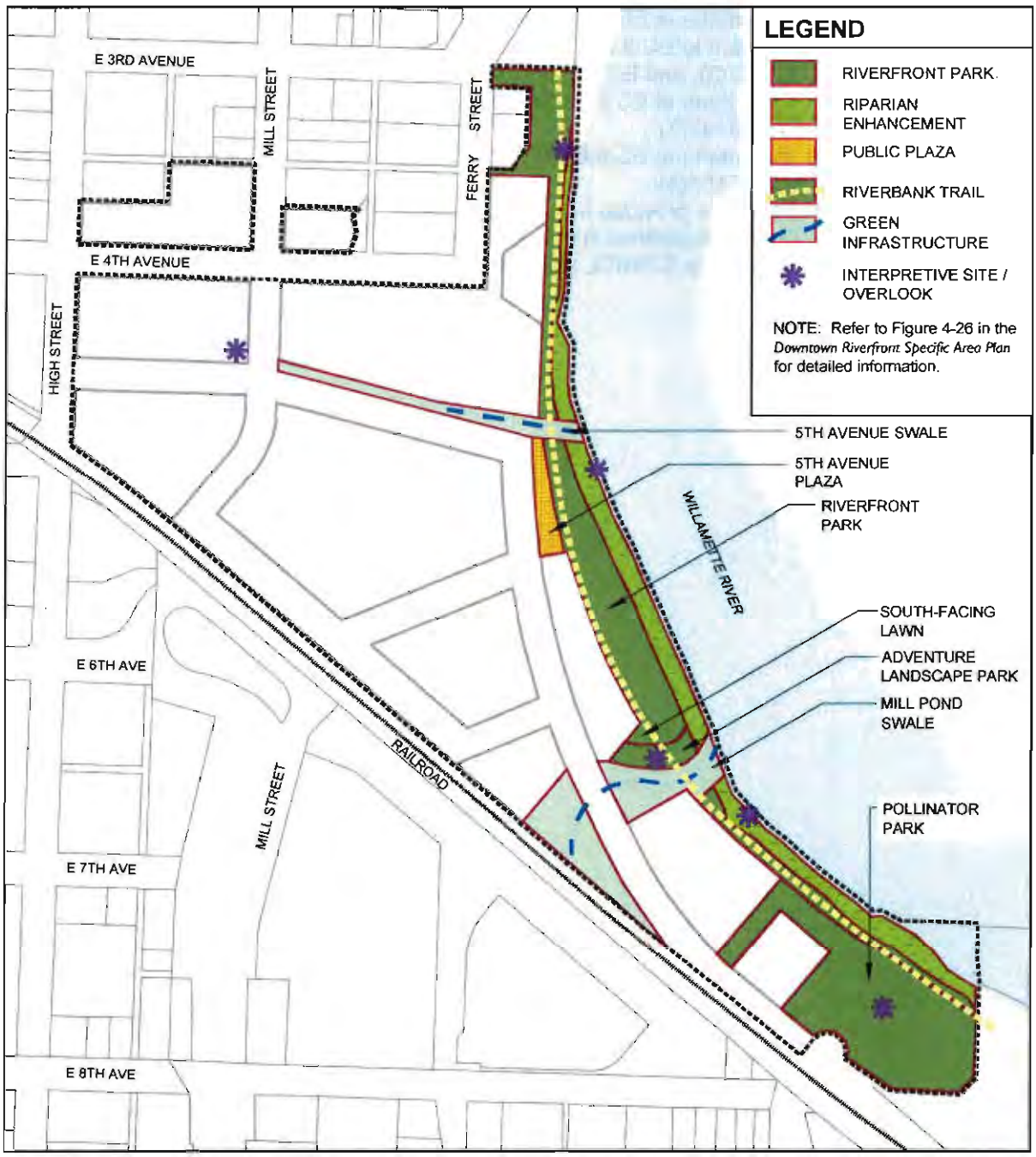
(h) **Lighting**. Area lighting shall be aimed away from natural resource areas where possible, and otherwise must be aimed such that light shining on natural resource areas is minimized to the maximum extent practicable. Area lighting is outdoor lighting designed to illuminate an activity area, trail or multi-use path.

(i) **Landscape Plantings**. Landscape plantings within designated view corridors as shown in Figure 4-26 in the *Downtown Riverfront Specific Area Plan* shall not obstruct a clear view to the water surface from the view corridor.

(j) **Public Access**. Public access connections must be provided between the Riverbank Trail and all adjacent development sites and public sidewalks. Access for the general public shall be consistent with adopted policies or plans.

(3) **Design Review**. As an alternative to compliance with standards and guidelines applicable in the S-DR/CL subdistrict, an applicant may apply for approval of an alternative through the Design Review process in accordance with the provisions of EC 9.3190.

Figure 9.3185 S-DR Zone Cultural Landscape and Open Space Subdistrict Diagram.



9.3190 S-DR Downtown Riverfront Special Area Zone Design Review.

(1) As an alternative to designing a development that complies with applicable standards in the S-DR Zone, where explicitly stated that the Design Review process can be used to approve an alternative to a particular standards, an applicant may apply for approval of a proposed development through the Design Review process beginning with EC 9.8110 Design Review-Purpose.

(2) The planning director shall approve, conditionally approve, or deny a Design Review application based on compliance with the following criteria:

(a) The criteria at EC 9.8030(16)(a)(1.) through (3.) apply to alternative designs pursuant to EC 9.3150(3), EC 9.3160(7), EC 9.3165(1), EC 9.3180(3), EC 9.3181(3), and EC 9.3182(3).

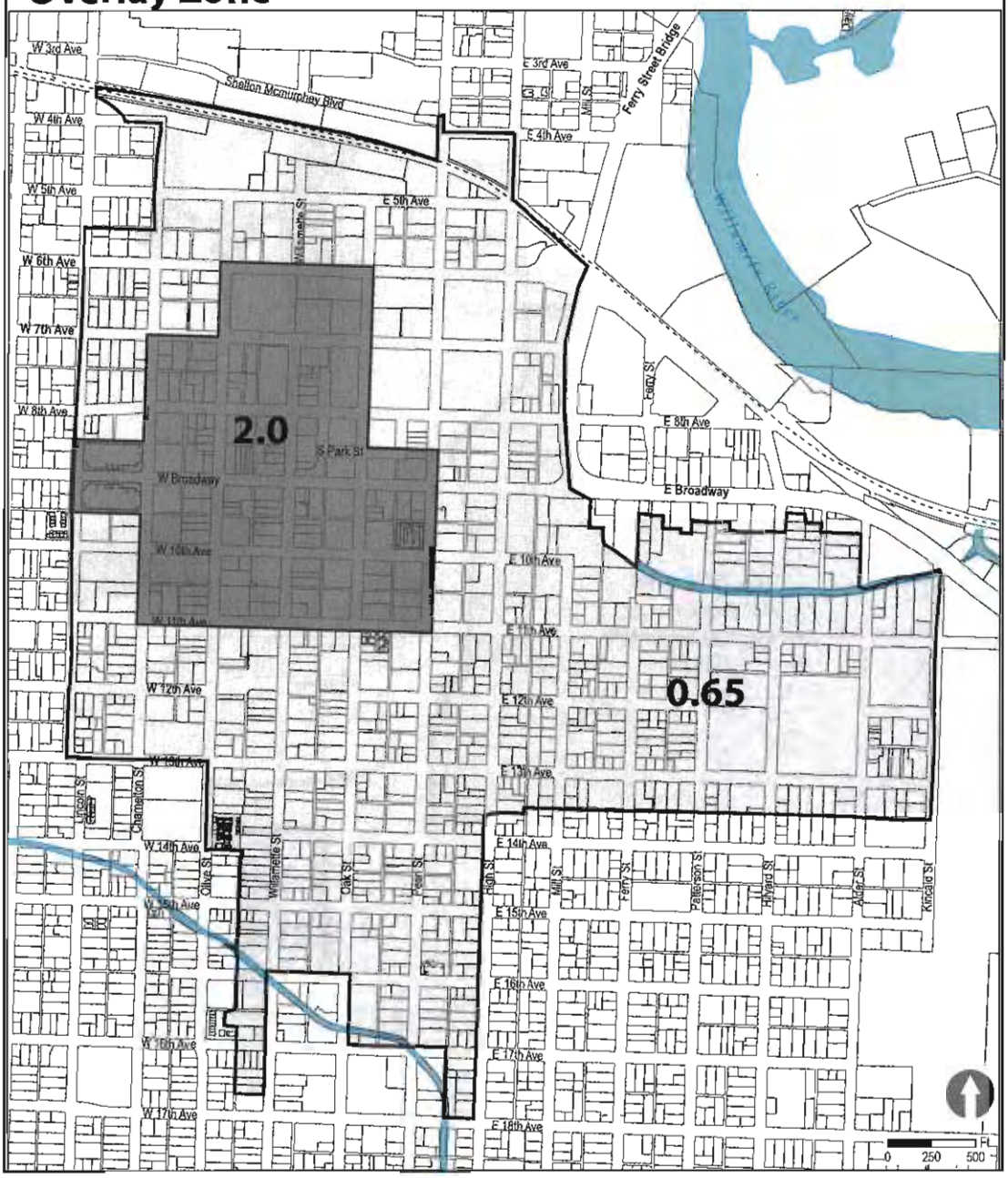
(b) The criteria at EC 9.8030(16)(a)(3.) apply to alternative designs pursuant to EC 9.3147(7).

(c) The criteria at EC 9.8030(16)(a)(3.) apply to alternative designs pursuant to EC 9.3185(4).

(d) Except as provided in (c), above, the Cultural Landscape and Open Space Design Guidelines in the *Downtown Riverfront Specific Area Plan* apply to uses in the S-DR/CL subdistrict pursuant to EC 9.3185(2).

Exhibit 5

Map 9.4510
Transit Oriented Development Overlay Zone



2.0 Minimum Floor Area Ratio

0.65 Minimum Floor Area Ratio

Map 9.6410(4)(a)

Downtown and West University Automobile Parking Exempt Areas

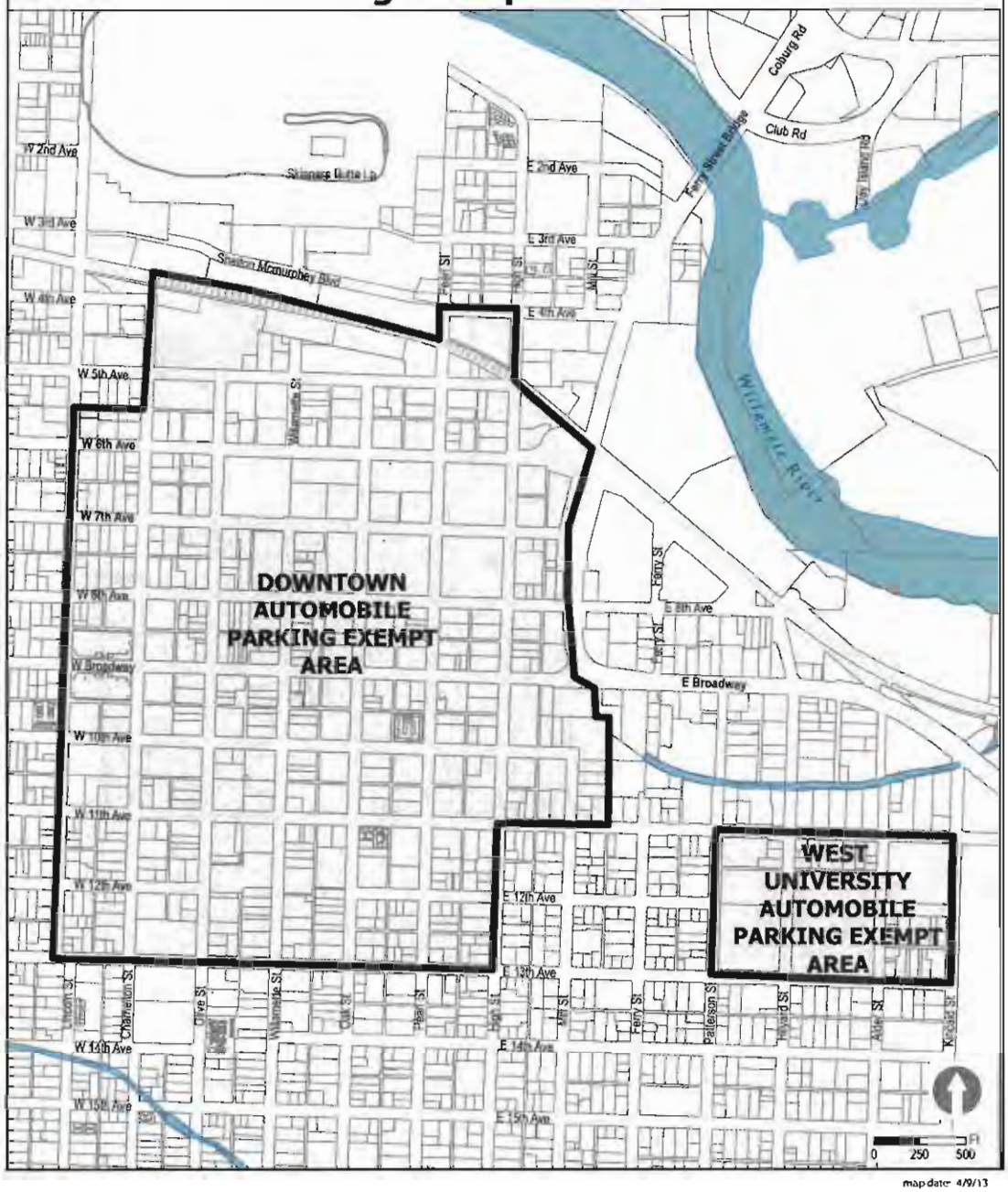
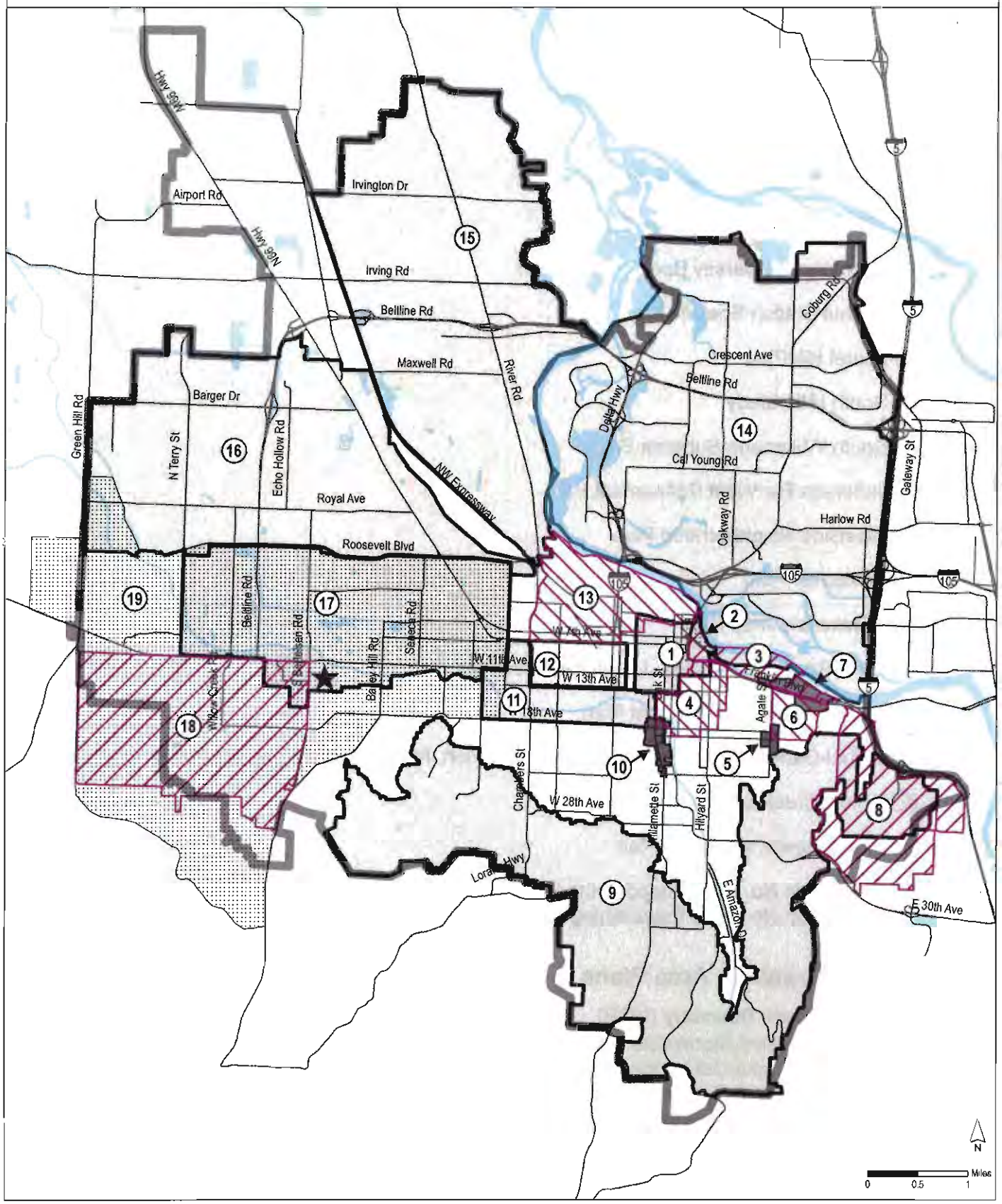


Exhibit 7

Map 9.8010
Adopted Plans



Map: 4/22/13

Map 9.8010
Adopted Plans Legend

1 Eugene Downtown Plan

2 EWEB Downtown Riverfront Specific Area Plan

3 Riverfront Park Study Area

4 West University Refinement Plan

5 19th & Agate Special Area Study

6 Fairmount/University Special Area Plan

7 Walnut Station Specific Area Plan

8 Laurel Hill Plan

9 South Hills Study

10 South Willamette Subarea Study

11 Jefferson/Far West Refinement Plan

12 Westside Neighborhood Plan

13 Whiteaker Plan

14 Willakenzie Area Plan

15 River Road -Santa Clara Urban Facilities Plan

16 Bethel-Danebo Refinement Plan

17 Bethel-Danebo Neighborhood Refinement Plan, Phase II, West Eugene Industrial Study

18 Willow Creek Special Area Study

19 West Eugene Wetlands Plan

★ Resolution No. 3862 Adopting the West 11th Commercial Land Use Policy
Resolution No. 3885 Establishing Areas for the Application of C-4 Zoning

City or Metropolitan Area Plans

Urban Growth Boundary (UGB)
Comprehensive Stormwater Management Plan = City Limits (not shown)
Eugene Commercial Lands Study = UGB
Eugene Parks & Recreation Plan = UGB
Metro Plan = Metro Area
TransPlan = Metro Area

This map is intended as general reference for the boundaries of plans adopted by the Eugene City Council. For specific boundaries, please refer to the plan. Map prepared by Eugene Planning and Development Department. (Some plans have overlapping boundaries.)

Exhibit 8

CITY OF EUGENE

METRO PLAN AMENDMENT, REFINEMENT PLAN AMENDMENTS, CODE AMENDMENTS, ZONE CHANGE, & WILLAMETTE GREENWAY PERMIT APPLICATION

EUGENE WATER & ELECTRIC BOARD (EWEB) DOWNTOWN RIVERFRONT LAND USE COMPONENTS

December 5, 2012

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EUGENE WATER AND ELECTRIC BOARD (EWEB)
DOWNTOWN RIVERFRONT

METRO PLAN AMENDMENT, REFINEMENT PLAN AMENDMENTS, CODE AMENDMENTS, ZONE CHANGE, & WILLAMETTE GREENWAY PERMIT APPLICATION

Written Statement

1.0 PROJECT INFORMATION

Applicant's Request:	The applicant, Eugene Water & Electric Board (EWEB), requests approval of a concurrent Metro Plan Amendment, Refinement Plan Amendments, Refinement Plan Adoption, Zone Change, and Willamette Greenway Permit application to enable redevelopment of the Downtown Riverfront site.
Property Owner:	Eugene Water & Electric Board PO Box 10148 Eugene, OR 97440
Applicant:	Eugene Water & Electric Board PO Box 10148 Eugene, OR 97440
Applicant's Representative:	Colin McArthur, AICP Principal Planner Cameron McCarthy 160 E. Broadway, Eugene OR 97401 541.485.7385 colin@cameronmccarthy.com
Designated Contacts:	Kevin Biersdorff Principal Project Manager Eugene Water & Electric Board PO Box 10148, Eugene OR 97440-2148 541.685.7739 Kevin.BIERSDORFF@eweb.org Jeannine Parisi Community and Local Government Liason Eugene Water & Electric Board PO Box 10148, Eugene OR 97440-2148 541.685.7451 Jeannine.PARISI@eweb.org
Project Name:	EWEB Downtown Riverfront Land Use Components
Subject Property:	Assessor's Map 17-03-29-33:

	Tax Lots 1400, 1600, 1800, 2000, 2600, 2700, & 2900 Assessor's Map 17-03-30-44: Tax Lots 7400, 8200, 8300, 8400, & 8500 Assessor's Map 17-03-31-11: Tax Lots 100 & 300 Assessor's Map 17-03-32-22: Tax Lots 100, 300, 400, 401, 800, 1500, & 1600
Location:	EWEB Downtown Riverfront 500 East 4th Avenue Eugene, OR 97401
Property Size:	27.06 acres
Plan Designation:	HDR High Density Residential, HI Heavy Industrial, POS Parks and Open Space, MU Mixed Use
Plan Overlay Designation:	/ND Nodal Development Overlay
Zoning Designation:	PL Public Land, I-2 Light-Medium Industrial, I-3 Heavy Industrial, S-W Whiteaker Special Area Zone
Overlay Zoning Designation:	/SR Site Review, /TD Transit Oriented Development, /WR Water Resources Conservation
Neighborhood-Applicant Meeting:	June 29, 2011, 6:30-8:00 PM EWEB North Building 500 E. 4th Avenue Eugene, OR 97401

2.0 DESCRIPTION OF PROPOSAL

2.1 Overview

Eugene Water and Electric Board (EWEB), the "applicant", requests approval to implement the land use components of the EWEB Riverfront Master Plan (Master Plan). The EWEB Board of Commissioners unanimously approved the Master Plan on June 1, 2010. The land use components, identified herein as implementation tools, comprise item number six (6) of the January 2007 Memorandum of Understanding between the City of Eugene and EWEB.[1] The land use components consist of a concurrent request for approval of a Metro Plan Amendments, Refinement Plan Adoption, Refinement Plan Amendments, Code Amendments, Zone Change, and Willamette Greenway Permit application; and, a separate request for approval of a Traffic Impact Analysis application.

The EWEB Downtown Riverfront site (Figure 2-1) (subject property, subject site) is 27.06 acres in size and comprised of 21 parcels. EWEB owns all parcels within the subject site. As shown in Figure 2-1, the subject site is bounded by the Willamette River to the east; University of Oregon (UO) Riverfront Research Park lands to the south; the Union Pacific Railroad corridor and High Street to the west; and, 4th Avenue to the north, with the exception of five parcels located north of 4th Avenue.

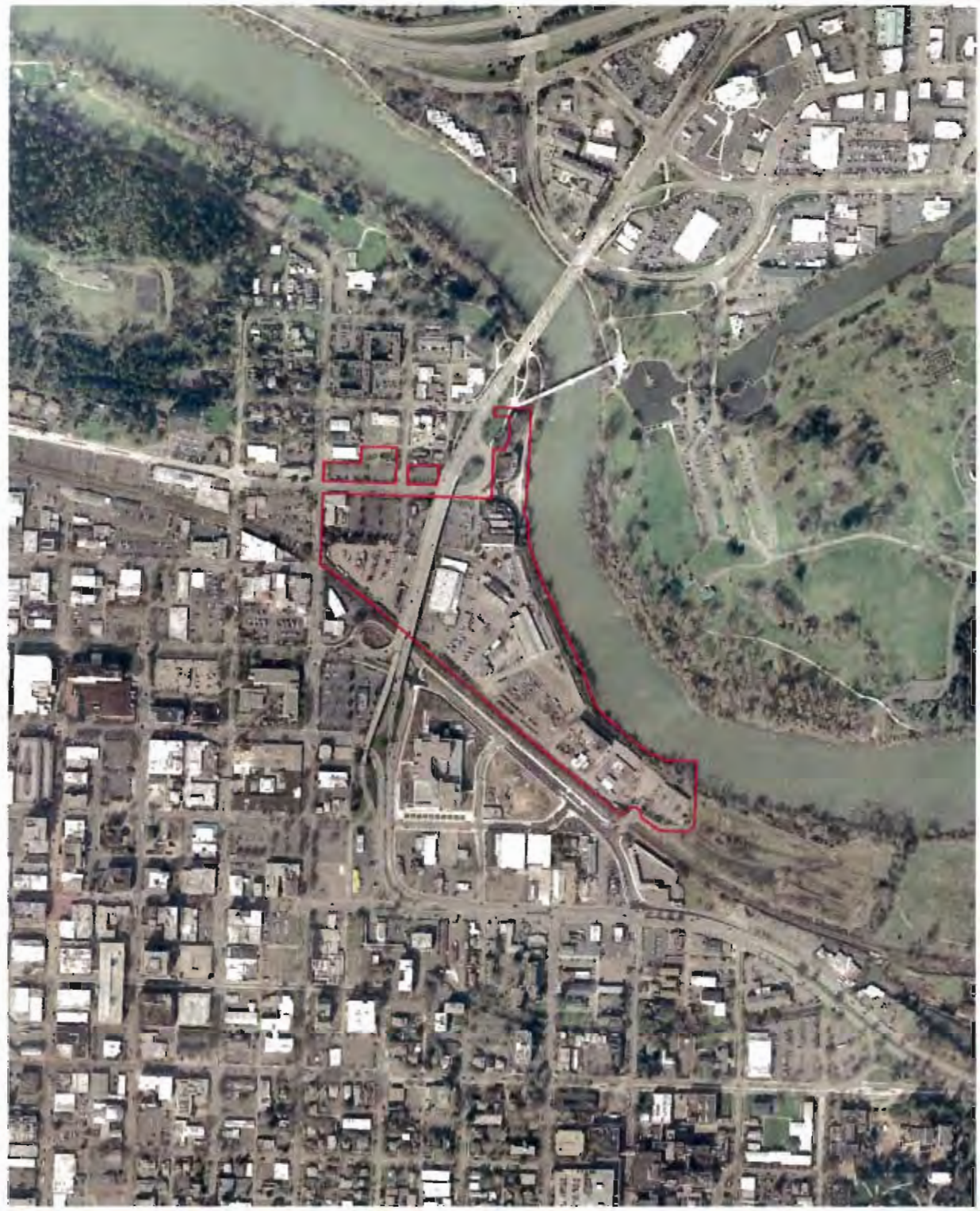
2.2 Background

The Eugene Code (EC) and the *Eugene Downtown Plan*, an adopted refinement plan, call for a master plan for the EWEB riverfront site prior to any redevelopment. In 2007, in preparation for EWEB vacating the majority of its operations from the Downtown Riverfront site, EWEB and the City of Eugene entered into a Memorandum of Understanding (MOU) that directed the development of a Master Plan for the subject property. A Community Advisory Team (CAT) was jointly appointed by the EWEB Board of Commissioners and Eugene City Council to help guide the creation of the *EWEB Riverfront Master Plan*. Rowell Brokaw Architects (RBA) led the design team, coordinated with community members in individual and group interviews, held a series of large public events to discuss design elements, and conducted extensive public outreach and involvement as part of the project. In April 2010, RBA completed the *Master Plan* for the EWEB Downtown Riverfront site. The *Master Plan* was unanimously approved by the EWEB Board of Commissioners on June 1, 2010.

The approved *Master Plan* represents the community's vision for the redevelopment of the Downtown Riverfront. The *Master Plan* is a framework that builds certainty about the vision for the subject property, while being flexible enough to allow this vision to be realized in different ways. It outlines the context, principles, objectives, recommendations, and requirements for the redevelopment of the EWEB riverfront property, as well as the public process conducted to arrive at this vision. The *Master Plan* gives form and specificity to goals and principles outlined in the *Eugene Downtown Plan*. The *Master Plan* also includes design guidelines, the basis for clear and objective development standards, and descriptions of design intent, the basis for adjustment or design review criteria.

[1] Memorandum of Understanding (MOU). City of Eugene and the Eugene Water & Electric Board. January 17, 2007.

Figure 2-1



The *Master Plan* envisions a green redevelopment of the subject property, with approximately eight (8) acres of dedicated public open space, new construction and adaptive re-use of buildings, pedestrian-oriented streets connecting Downtown Eugene to the Willamette River, and a Cultural Landscape that displays the ecological, social, industrial, and civic history of the place. It establishes a framework of streets, open space, and redevelopment parcels as well as a set of allowable uses and use requirements. The *Master Plan* is the foundation for the land use components described herein.

Extensive public involvement was a key component to the creation of a redevelopment strategy that resonates with Eugene residents and satisfies community needs. Throughout the *Master Plan* development process, public input was integrated during design iterations and incorporated into decision-making equations that resulted in the *EWEB Riverfront Master Plan*. From its inception, the redevelopment project has had a clear and primary objective of fostering consistent and active community support.

In 2010, EWEB relocated its maintenance, operations, and engineering staff from the Downtown Riverfront site to the new Roosevelt Operations Center (ROC) in west Eugene. EWEB Administrative staff remain in the existing headquarters building on the Downtown Riverfront site. As a result of the major relocation, a significant portion of the Downtown Riverfront site is available for redevelopment.

2.3 Context

The *Master Plan* envisions its future adoption as a refinement plan or specific area plan and that a new Special Area Zone will be established in the Eugene Code based on the *Master Plan's* recommendations and requirements. The *Master Plan* notes that this is not the only course of approval or adoption process; however it was the course presumed when the master planning process was completed.

The *Master Plan* recommends re-zoning of the property to meet the vision of the master planning and public engagement processes. The *Master Plan* utilized the existing Community Commercial (C-2) zone as the basis for discussions regarding allowable uses and uses not allowed on the riverfront site. While this might imply that C-2 is suitable as a potential base zone for the Riverfront site, many of the C-2 zoning requirements are in conflict with aspects of the *Master Plan* vision and, in general, are not designed to facilitate mixed-use development, the endorsed build-out alternative.

With the adoption of the *Growth Management Study*, in 1998, and the regional transportation plan (*TransPlan*), in 2001, the concept of mixed-use development (formerly known as "nodal development") is the official growth management policy of the City of Eugene. Mixed-use development is based on a vision of Eugene's future that maintains the existing urban growth boundary by encouraging infill; redevelopment; and higher density, mixed-use development in select locations throughout the metropolitan area. Mixed-use development is a major step towards realizing citizens' vision of Eugene's future. The *Master Plan* envisions mixed-use development through infill development, redevelopment, and adaptive reuse of the Downtown Riverfront site and is therefore aligned with the vision for Eugene's future.

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3.0 EXISTING CONDITIONS

3.1 Site Context

The EWEB Downtown Riverfront site is comprised of 21 parcels totaling 27.06 acres in size. As shown on Sheet C1 Cover Sheet (Exhibit G Plan Set), the subject site contains 22.76 acres of developed land and 4.30 acres of open space. The subject site is located adjacent to the Willamette River, the Eugene Downtown Core area, and the 5th Street Market commercial corridor. Across the Willamette River from the subject site is Alton Baker Park, the city's largest metropolitan park. Further upstream is the University of Oregon's Riverfront Research Park. To the south of the subject site, across E. 6th Avenue, is the U.S. Federal Courthouse. Skinners Butte is located approximately ¼ mile to the northwest.

The Union Pacific railroad corridor forms the southwestern boundary of the subject site. The rail corridor is the primary passenger and freight rail line serving the Eugene-Springfield Metropolitan area. Eugene station is located approximately ¼-mile west of the intersection of 4th Avenue and High Street, the northwest corner of the subject site. The Ruth Bascom Riverfront Trail stretches along the west bank of the Willamette River within the project boundaries. Ferry Street Bridge, located north of the subject site, is a significant transportation arterial and primary vehicular route across the Willamette River. The Peter Defazio Bridge, located north of the subject site, is a primary pedestrian and bicycle route across the Willamette River from Downtown Eugene to Alton Baker Park, Autzen Stadium, and beyond.

The EWEB Riverfront site is located within the heart of Downtown Eugene and in proximity to many defining natural, cultural, and economic amenities. The subject property is isolated from the rest of the city by the railroad corridor and elevated Ferry Street Viaduct. Establishing new and clearly identifiable street and pedestrian connections to the riverfront are of great importance in order to realize the community benefits of this civic and natural-resource amenity.

3.2 Site History

The EWEB Downtown Riverfront site housed community water facilities prior to 1900. However, EWEB's history and its history on the subject property can be traced to an event in 1906. Privately owned companies originally provided water and electric service to the citizens of Eugene. Following increasing prices and a typhoid outbreak in 1906, actions were initiated to revise the City Charter and state legislation to allow for public ownership of water, electric, and sewer service. On November 18, 1908 the City Council purchased the private domestic water system and on March 11, 1911 the Eugene Water Board was formed. The utility's name was later changed to Eugene Water & Electric Board (EWEB) to reflect the provision of electrical service.

The facilities purchased in 1908 were housed on the east side of the subject site where the Willamette Substation is today. As Eugene grew, more land was purchased downstream which facilitated construction of the Steam Plant in 1931 and the McClain Filter Plant in 1934. As growth continued, EWEB purchased additional surrounding properties and added new facilities, including the first onsite headquarters building in 1949. In 1988 four parcels north of 4th Avenue and west of Mill Street were purchased, which were the last parcels EWEB purchased for the Downtown Riverfront site. Construction of EWEB's current administrative headquarters was completed in 1988.

3.3 Existing Structures

The subject property contains several existing structures including the 100,000 square foot (sf) EWEB Headquarters Building, the 49,000sf Operations Warehouse, the 28,000sf Steam Plant, the

21,000sf Communications and Equipment Repair Building, the 18,600sf Midgley's Building, and the 17,800sf Vehicle Repair Shop. Under the *Master Plan*, the EWEB Headquarters Building, the Operations Warehouse, the Steam Plant, and the Midgley's Building are proposed for adaptive reuse. The Communications and Equipment Repair Building and the Vehicle Repair Shop are proposed for demolition. The Willamette Substation and a former manufactured gas plant site are located within the southeastern end of the subject property and are proposed to remain in EWEB ownership. In 2009, a DEQ assessment of the former manufactured gas plant site's environmental impacts was completed. The site was determined to be polluted prior to EWEB ownership and is now capped with impervious materials. The primary section of the subject site best suited for immediate redevelopment is the approximate 12-acre former Operations Yard, which spans both the east and west sides of the Ferry Street Viaduct and is mostly paved. Prior to the relocation of EWEB operations, this area was used to store equipment and utility service vehicles.

3.4 Land Use

Metro Plan land use designations for the subject property include, seven (7) parcels designated High Density Residential, two (2) parcels designated Heavy Industrial, five (5) parcels designed Mixed Use, and seven (7) parcels designated Parks and Open Space. All of the parcels located south of 4th Avenue and west of the Ferry Street Viaduct have the Nodal Development Overlay designation.

City of Eugene zoning designations for the subject property include, three (3) parcels designated I-2 Light-Medium Industrial, five (5) parcels designated I-3 Heavy Industrial, eight (8) parcels designated PL Public Land, and five (5) parcels designated S-W Whiteaker Special Area Zone. Nine (9) parcels adjacent to the Willamette River have /WR Water Resources Conservation overlay zoning designation. Twelve (12) parcels adjacent to the Ferry Street Viaduct have /TD Transit Development overlay zoning designation. Five (5) parcels north of 4th Avenue, within the S-W Special Area Zone, have /SR Site Review overlay zoning designation.

A list of subject parcels (tax lots), acreage, *Metro Plan* designations, and City of Eugene land use zoning designations is provided as Exhibit J Tax Lot Details. Figure 3-1 identifies respective parcels within the subject site and their associated plan and zone designations as well as overlay designations.

Figure 3-1 Existing Plan and Zoning Designation

DESIGNATION	21 Parcels 27.06 Acres	TOTAL PARCELS	ACRES	SITE COVERAGE
Plan Designation[1]				
HDR High Density Residential		7	5.00	18%
HI Heavy Industrial		2	17.75	66%
MU Mixed Use		12	6.12	23%
POS Parks and Open Spaces		7	3.19	12%
Plan Overlay Designation				
/ND Nodal Development Overlay		16	25.94	96%
Zoning Designation				
I-2 Medium Industrial		3	2.22	8%
I-3 Heavy Industrial		5	4.16	15%
PL Public Land		8	19.56	72%
S-W Whiteaker		5	1.12	4%
Zoning Overlay Designation				
/SR Site Review Overlay		5	1.12	4%
/TD Transit Development Overlay		12	18.10	67%
/WR Water Resources Conservation Overlay		9	20.94	77%

[1] Seven (7) parcels are designated HDR and MU

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4.0 SPECIFIC REQUEST

The subject property is designated Heavy Industrial, High Density Residential, Mixed Use, and Parks and Open Space by the Eugene-Springfield Metropolitan Area Plan (*Metro Plan*) Diagram. The subject property is zoned Public Land (PL), Light-Medium Industrial (I-2), Heavy Industrial (I-3), and Special District (S-W, Whiteaker Special Area Zone) by the City of Eugene Zoning Map with portions of the property having Site Review (/SR), Transit District (/TD), and Water Resources (/WR) overlay zoning.

As noted in Section 2.1, the proposal is a concurrent request for approval of a Metro Plan Amendments, Refinement Plan Adoption, Refinement Plan Amendments, Code Amendments, Zone Change, and Willamette Greenway Permit application.

Each of the individual land use components is described below. Findings of compliance with applicable policies, approval criteria, and standards are provided in Section 5.0 Approval Criteria and Standards.

- **Metro Plan Amendments**
  - The proposal involves a Type II Metro Plan Amendments application pursuant to EC 9.7700(2)(a) to change the plan diagram designation of three (3) parcels within the subject site from Heavy Industrial and Parks and Open Space to Mixed Use and apply the Nodal Development Area Overlay designation to five (5) parcels in order to implement the Master Plan vision.

- **Refinement Plan Adoption**
  - The proposal involves a Type V Refinement Plan Adoption application pursuant to EC 9.8421 to adopt the *Downtown Riverfront Specific Area Plan* as a refinement plan.

- **Refinement Plan Amendments**
  - The proposal involves a Type V Refinement Plan Amendments application pursuant to EC 9.8421 to remove Downtown Riverfront Policies 2 and 3 in the *Eugene Downtown Plan* as the policies have been enacted through the relocation of EWEB's utility functions and completion of the *Master Plan* and are now obsolete.
  - The proposal involves a Type V Refinement Plan Amendments application pursuant to EC 9.8421 to remove EWEB Policies II.E.1, II.E.2, and II.E.3 in the *Riverfront Park Study* as the policies are obsolete.

- **Code Amendments**
  - The proposal involves a Type V Code Amendments application pursuant to EC 9.8060 to establish the S-DR Downtown Riverfront Special Area Zone and revise other policies, criteria, and development standards, for consistency with the S-DR Downtown Riverfront Special Area Zone and the *Downtown Riverfront Specific Area Plan*.

- **Zone Change**
  - The proposal involves a Type IV Zone Change application pursuant to EC 9.8850 to change the zoning designation of sixteen (16) parcels within the subject site from I-2 Light Medium Industrial, I-3 Heavy Industrial, and PL Public Land to S-DR Downtown Riverfront Special Area Zone; and, to remove the /TD Transit Oriented Development Overlay on twelve (12) parcels within the subject site.

- **Willamette Greenway Permit**

- The proposal involves a Type III Willamette Greenway Permit application pursuant to EC 9.8805 to permit development within the boundaries of the Willamette River Greenway.

5.0 APPROVAL CRITERIA AND STANDARDS

The purpose of the proposal is to enable redevelopment of the Downtown Riverfront site consistent with the *Master Plan* vision, to create development standards and urban design guidelines that shape redevelopment, and to facilitate the transformation of the area into a "people place" that is active, vibrant, accessible and multi-use. The following actions are necessary to implement the land use components for the Downtown Riverfront.

- Amendments to the *Metro Plan* land use diagram to re-designate three (3) properties to Mixed Use Area designation and apply the Nodal Development Area Overlay designation to five (5) properties.
- Adoption of the *Downtown Riverfront Specific Area Plan* as a refinement plan, including a land use diagram and policies to establish the redevelopment vision.
- Amendments to the *Eugene Downtown Plan* text to remove Downtown Riverfront Policies 2 and 3 as the policies have been enacted and are now obsolete.
- Amendments to the *Riverfront Park Study* to EWEB Policies II.E.1, II.E.2, and II.E.3 as the policies are obsolete.
- Amendments to the land use code to establish the S-DR Downtown Riverfront Special Area Zone, add the *Downtown Riverfront Specific Area Plan* as an adopted plan, and revise other development standards and criteria for consistency with the S-DR Downtown Riverfront Special Area Zone.
- Re-zoning of sixteen (16) properties within the Downtown Riverfront site to S-DR Downtown Riverfront Special Area Zone. Five (5) properties within the Downtown Riverfront site will remain zoned S-W Whiteaker Special Area Zone. The /TD Transit Oriented Development Overlay Zone will be removed from twelve (12) properties. All properties that have the existing /SR Site Review Overlay Zone and /WR Water Resources Conservation Overlay Zone will retain those overlays.
- Approval of a Willamette Greenway permit to allow redevelopment of properties within the boundaries of the Willamette River Greenway.

Findings of compliance that establish the consistency of these actions with the applicable approval criteria and standards are provided in Sections 5.1 through 5.7.

5.1 Metro Plan Amendments

The proposal amends the *Metro Plan* land use diagram to re-designate two (2) parcels from Heavy Industrial to Mixed Use Area and one (1) parcel from Parks and Open Space to Mixed Use Area (totaling approximately 18.61 acres) and to apply the Nodal Development Area Overlay designation to five (5) parcels (totaling approximately 1.12 acres), resulting in all properties within the subject site having Nodal Development Area Overlay designation. The other thirteen (13) parcels within the subject site will retain existing High Density Residential, Parks and Open Space, and Mixed Use Area designations.

Table 5-1 presents existing and proposed *Metro Plan* base and overlay designations for parcels within the subject site. Exhibit H Metro Plan Diagram illustrates existing and proposed Metro Plan diagram changes. Assessor's map and tax lot numbers are shown on Sheet C1 Cover Sheet (Exhibit G Plan Set).

Findings of compliance with application Metro Plan Amendment approval criteria are provided in EC 9.7730.

Table 5-1 Existing and Proposed Metro Plan Designations

ASSESSOR'S MAP & TAX LOT NUMBERS	SIZE	BASE DESIGNATION & OVERLAY DESIGNATION	
17-03-29-33		**Existing**	**Proposed**
1400	0.12 acres	POS/ND	POS/ND
1600	0.11 acres	POS/ND	POS/ND
1800	0.05 acres	POS/ND	POS/ND
2000	0.19 acres	POS/ND	POS/ND
2600	0.25 acres	MU	MU/ND
2700	0.48 acres	HDR,MU/ND	HDR,MU/ND
2900	0.86 acres	POS/ND	MU/ND
17-03-30-44		**Existing**	**Proposed**
7400	0.29 acres	MU	MU/ND
8200	0.21 acres	MU	MU/ND
8300	0.08 acres	MU	MU/ND
8400	0.29 acres	MU	MU/ND
8500	1.41 acres	HDR,MU/ND	HDR,MU/ND
17-03-31-11		**Existing**	**Proposed**
100	0.29 acres	HDR,MU/ND	HDR,MU/ND
300	0.52 acres	HDR,MU/ND	HDR,MU/ND
17-03-32-22		**Existing**	**Proposed**
100	11.89 acres	HI/ND	MU/ND
300	1.12 acres	HDR,MU/ND	HDR,MU/ND
400	0.53 acres	HDR,MU/ND	HDR,MU/ND
401	.65 acres	HDR,MU/ND	HDR,MU/ND
800	5.86 acres	HI/ND	MU/ND
1500	1.16 acres	POS/ND	POS/ND
1600	0.70 acres	POS/ND	POS/ND

HDR - High Density Residential
HI - Heavy Industrial
POS - Parks and Open Space
MU - Mixed Use Area
ND - Nodal Development

EC 9.7730 Metro Plan – Approval of a Plan Amendment

(3) Criteria for Approval of Plan Amendment. The following criteria shall be applied by the city council in approving or denying a Metro Plan amendment application:

(a) The amendment must be consistent with the relevant Statewide Planning Goals adopted by the Land Conservation and Development Commission; and

Goal 1 – Citizen Involvement: To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.

From inception the project has been grounded and shaped by citizen involvement. The *EWEB Riverfront Master Plan* was developed with extensive citizen guidance and involvement, as detailed below.

In 2007, the EWEB Board of Commissioners and Eugene City Council jointly appointed a Community Advisory Team (CAT) to help guide the redevelopment process. EWEB and city staff developed the selection criteria for CAT members. The CAT was designed to represent various community interests and incorporate diverse public opinion. The CAT worked closely with the design team during the development of the Master Plan and operated as a guiding force behind the resulting vision. Both the CAT and the design team, lead by Rowell Brokaw Architects, advocated for extensive public outreach and a 10-month long public engagement plan was implemented around the Master Plan development. Basic elements of the 10-month long public engagement plan included:

- Sixty (60) individual and paired interviews, involving 163 people in total.
- Three (3) group interviews addressing transportation, development and arts/cultural interests.
- Two (2) focus groups addressing site ecology and sustainable urbanism, utilizing local experts and other interested parties.
- Four (4) community events (Open Houses) to present and gather input from the public on the Master Plan:
  - Meeting 1: Visioning Charrette.
  - Meeting 2: Multiple Design Options.
  - Meeting 3: Input on Chosen Design Option.
  - Meeting 4: Open House Celebration on Final Scheme.
- Universal Design outreach for events:
  - Collaboration with City of Eugene Human Rights Commission Accessibility Committee and the Lane Independent Living Alliance to create outreach and participation methods for people with disabilities in accordance with the Americans with Disability Act meeting requirements.
  - Young adults were targeted to get involved in the project by contacting high school teachers to recruit interested students, community service organizations with active high school students, college students in relevant fields, and young adult organizations.
  - Communities of color were specifically addressed to be involved in the project by referrals and personal invitations, outreach at supermarkets, longhouses, churches, and social service agencies. University of Oregon and Lane Community College student organizations and multicultural centers were also contacted to improve turnout of under–represented demographics.
- Outreach beyond public meetings (ongoing):

  - CAT members attended civic organization meetings of high attendance with informational project displays and answered questions.
  - Public Project Website: www.eugeneriverfront.com
- Communications plan (ongoing):
  - Informal press briefings; articles in EWEB, City of Eugene, and Eugene Chamber of Commerce publications.

During the public involvement process, over 1,000 community members directly contributed to the master planning process. The CAT met bi-weekly for nearly two years to coordinate the above-mentioned efforts. As part of the land use phase, additional citizen involvement occurred pursuant to standard application requirements and other needs, as described below:

- A stakeholders meeting was held on January2, 2011 to inform attendees about the land use process and discuss issues surrounding the project.
- A Neighborhood-Applicant meeting was held pursuant EC 9.7007 on June 29, 2011. Invitations were sent to 665 residents, property owners, and neighborhood associations within 500 feet of the site boundaries as well as the planning director, city engineer, and senior planner. Exhibit M Neighborhood-Applicant Meeting Materials includes required documentation from the meeting.

The above findings demonstrate that the applicant has provided extensive opportunities for citizens to be involved in all phasesof the planning process. The proposed amendments and zone change are consistent with Goal 1.

> *Goal 2 – Land Use Planning: To establish land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decision and actions.*

Guiding land use processes and policy framework for the City of Eugene exist within the *Metro Plan*, adopted Refinement Plans, and Chapter 9 of the Eugene Code. The proposed amendments to both the *Metro Plan* and Chapter 9 of the Eugene Code will not infringe upon their capacity as adequate factual based tools for land use decisions and actions. This land use application follows specified amendment and permit procedures and fulfills stated criteria to demonstrate such compliance. Additionally, one of the primary objectives of the proposed special area zone (SAZ) is to implement Nodal Development policies of the *Metro Plan*. Since the adoption of *Trans Plan* in 2001, the City's growth management policies have been geared towards utilizing a nodal development strategy. The proposed amendments help fulfill these growth management policies. Based on these findings, the proposed amendments and zone change are consistent with Goal 2.

Goal 3 – Agricultural Lands: To preserve and maintain agricultural lands.

Parcels within the subject site are designated by the *Metro Plan* Diagram as High Density Residential, Heavy Industrial, Parks and Open Space, and Mixed Use Areas. Under City of Eugene Zoning, said parcels are zoned PL Public Land, I-2 Light-Medium Industrial, I-3 Heavy Industrial, and S-W Whiteaker Special Area Zone. Current land uses include EWEB administration facilities and commercial uses. Pursuant to OAR 660-015-0000(3) agricultural lands do not include lands located within acknowledged urban growth boundaries (UGB). The entirety of the subject site is located within Eugene's UGB. Based on these findings, the proposed amendments and zone change are consistent with Goal 3.

Goal 4 – Forest Land: To preserve forest lands.

Goal 4 does not apply to land within the subject site. All parcels within the subject site are located within the City of Eugene UGB and do not contain forest lands. According to OAR 660-006-0020, Statewide Planning Goal 4 is not applicable within urban growth boundaries. The subject site does not affect forest lands because it does not contain forested lands and is located within the UGB. Therefore, the proposed amendments and zone change are consistent with Goal 4.

Goal 5 – Natural Resources, Scenic and Historic Areas, and Open Spaces: To protect natural resources and conserve scenic and historic areas and open spaces.

The following Oregon Administrative Rule (OAR 660-023-0250) is applicable to this post-acknowledgement plan amendment (PAPA) request:

OAR 660-023-0250

(3) Local governments are not required to apply Goal 5 in consideration of a PAPA unless the PAPA affects a Goal 5 resource. For purposes of this section, a PAPA would affect a Goal 5 resource only if:

(a) The PAPA creates or amends a resource list or a portion of an acknowledged plan or land use regulation adopted in order to protect a significant Goal 5 resource or to address specific requirements of Goal 5;

(b) The PAPA allows new uses that could be conflicting uses with a particular significant Goal 5 resource site on an acknowledged resource list; or

(c) The PAPA amends an acknowledged UGB and factual information is submitted demonstrating that a resource site, or the impact areas of such a site, is included in the amended UGB area.

The proposed amendments and zone change do not create or amend a list of Goal 5 resources, a plan or a land use regulation adopted in order to protect a significant Goal 5 resource or to address specific requirements of Goal 5, and do not amend the acknowledged urban growth boundary. Therefore, it is clear that the proposed amendments do not trigger the need to consider Goal 5 pursuant to OAR 660-023-0250(3)(a) or 3(c). Some analysis is required to determine whether OAR 660-023-0250(3)(b) triggers the need to further consider Goal 5 requirements. Subsection (3)(b) asks whether '[t]*he PAPA allows new uses that could be conflicting uses with a particular significant Goal 5 resource site on an acknowledged resource list.*" Significant Goal 5 resource sites and

acknowledged lists are documented in the *2005 Eugene Goal 5 Water Resource Conservation Plan* and the *1978 Goal 5 Inventory and Metro Natural Assets & Constraints Working Papers.*

Natural Resources

The Riverfront Ecological Analysis and Design Report (Exhibit E) and the Plan Set (Exhibit G) document natural features on the subject site and provide relevant information in addressing these Goal 5 requirements. The eastern portion of the subject site is within the Willamette River Greenway, a natural asset, as identified in the *Metro Natural Assets & Constraints Working Papers.*[2] The Willamette River is adjacent to the development site and is identified as a Goal 5 Water Resource by the *Goal 5 Water Resource Conservation Plan.*[3] As identified on the *Adopted Protection Designations for the Eugene Goal 5 Wetland, Riparian, and Upland Wildlife Habitat Inventories Map* dated November 14, 2005, the Willamette River is categorized as a Category A Stream. All parcels within the subject site that abut the Willamette River have /WR Water Resource Conservation overlay zoning. Pursuant to EC 9.4920(1)(c)(1.), Category A streams with a distinguishable high bank have a 100 foot setback applied to top of bank (TOB) as part of the /WR overlay zoning. The Willamette River adjacent the development site features a distinguishable high bank. The existing high bank was surveyed by OBEC Consulting Engineers on June 13, 2011 and is shown on Sheets S1 and S2 Existing Conditions Plans (Exhibit G Plan Set) and labeled as "top of bank". The proposed amendments do not change protections established by the 100-foot /WR conservation setback in EC 9.4920(1)(c)(1.) or affect inventoried Goal 5 Water Resources.

Pursuant to EC 9.4920(5)(a) and (d), areas which the applicant has shown to be developed prior to November 14, 2005, are excluded from /WR conservation areas. As demonstrated on Sheets R1 Regulatory Plan (Exhibit G Plan Set) and Exhibit L Pre-Development Images, the subject site contains buildings on a concrete foundation, pursuant EC 9.4920(5)(a), as well as paved and gravel parking areas that serve administrative and operations uses in adjacent buildings, pursuant to EC 9.4920(5)(d), that were developed prior to November 14, 2005; the date specified in EC 9.4920(5). Sheet R1 Regulatory Plan illustrates "/WR Prior Developed Areas" consistent with EC 9.4920(5); and, "/WR Conservation Areas" and "/WR Conservation Setback Areas."

The proposed amendments and zone change do not affect established protections. These areas will remain subject to the provisions of the /WR overlay zone. Through the applicant's concurrent zone change request to implement the proposed zoning designations, the existing /WR overlay zoning will apply. Protection of this Goal 5 resource will therefore remain the same; regardless of the proposed plan designations change that would be allowed outside the regulated overlay.

Scenic and Historic Areas

The *Eugene Goal 5 Water Resource Conservation Plan* and the *Goal 5 Inventory and Metro Natural Assets & Constraints Working Papers*, specifically the *Scenic Site Working Paper* and the *Archeological Sites Working Paper*, do not identify any scenic or historic resources on the subject site. Oregon Revised Statute (ORS) 358.653 obligates state agencies and political subdivisions of the state to consult with the State Historic Preservation Office (SHPO) to avoid inadvertent impacts to historic properties for which they are responsible. In accordance with this statute, the applicant has submitted clearance forms for identified historic buildings to SHPO. The identified historic buildings on the subject site include:

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[2] *Eugene Goal 5 Inventory and Metro Natural Assets & Constraints Working Papers.* Willamette River Greenway Working Paper. Figure J1, Willamette River Greenway. April 12, 1978.

[3] Eugene Goal 5 Water Resources Conservation Plan, *Section III.* Site #35 WA/WB Willamette River. October 24, 2005.

- The Vehicle Repair Shop (1952): Considered Not Eligible for Listing in the National Register because of major alterations.
- The Warehouse/Operations Building (1952): Considered Eligible for Listing in the National Register.
- The Steam Plant Pump House (1931): Considered Eligible for Listing in the National Register. (Adverse Effect)

On August 3, 2011, SHPO generally concurred with the applicant's recommendations. On December 12, 2011, SHPO signed a Memorandum of Agreement (MOA) with the applicant to mitigate for any adverse effects. Based on these findings, there are no inventoried Goal 5 historic resources or listed historic resources on the subject site.

Open Spaces
The *Eugene Goal 5 Water Resource Conservation Plan* and the *Goal 5 Inventory and Metro Natural Assets & Constraints Working Papers* do not identify any open spaces on the subject site.

There are no additional resources that require analysis under the OAR's noted above. The proposed amendments and zone change will maintain established protection measures for inventoried Goal 5 resources within and adjacent to the subject property. Based on these findings, the proposed amendments and zone change are consistent with Goal 5.

Goal 6 – Air, Water and Land Resource Quality: To maintain and improve the quality of air, water and land resources of the state.

Goal 6 addresses waste and process discharge from development, and is aimed at protecting air, water, and land from impacts from those discharges. The proposal does not amend the metropolitan area's air, water quality, or land resource policies. Future development of the site will be required to comply with applicable environmental laws and to the extent that future development may create additional impacts to air, water, or land resources, state and local permitting processes will ensure that discharges do not exceed allowable standards.

Future development of the site will be required to adhere to existing policies and Best Management Practices (BMP) in the *City of Eugene Stormwater Management Plan*. Compliance with BMP's will be ensured through the building permit process. Incorporated within the *Master Plan*, *Downtown Riverfront Specific Area Plan (SAP)*, and Special Area Zone (SAZ) are measures that promote sustainable development practices, including but not limited to eco-roofs, green streets, and vegetated stormwater treatment. Furthermore, the envisioned mixed-use development scenario will fulfill nodal development and transit oriented development goals aimed at reductions in the amount of vehicle miles traveled within the metropolitan area. Based on these findings, the proposed amendments and zone change are consistent with Goal 6.

Goal 7 – Areas Subject to Natural Hazards: To protect people and property from natural hazards.

Goal 7 requires local governments to adopt comprehensive plans to reduce risk to people and property from natural hazards such as floods, landslides, earthquakes, tsunamis, and wildfires. The City of Eugene protects people and property from natural hazards through various land use and building code requirements. The proposal does not alter these protective provisions nor does it propose development in areas identified to be unsuitable for development.

The subject site is located along the Willamette River within Eugene's Downtown. Portions of the subject site adjacent to the Willamette River are identified on FEMA Firm Map 1137 (Exhibit N

FEMA Floodplain Map) as Special Flood Hazard Areas (Zone AE), Other Flood Areas (Zone X), and Other Areas (Zone X). Special Flood Hazard Areas (Zone AE) identifies areas inundated by a 100-year flood. Other Flood Areas (Zone X) identifies other flood areas consisting of areas inundated by a 500-year flood, areas of 100-year flood with average depths of less than 1 foot or with drainage areas less that 1 square mile, and areas protected by levees from 100-year floods. Other Flood Areas (Zone X) identifies areas determined to be outside the 500-year floodplain. The majority of the subject site is located outside the 500-year floodplain.

The site is prior developed and contains structures and impervious surfaces adjacent the Willamette River. The proposal will not result in development of the site in a manner that is substantially different than existing conditions, which would be more susceptible to natural hazards. Since proposed and existing development has similar tolerance to natural hazards, the future redevelopment of the site is compliant with Goal 7. In addition, the proposed amendments and zone change do not affect or amend the City's means to protect people and property from natural hazards. Based on these findings, the proposed amendments and zone change are consistent with Goal 7.

> *Goal 8 – Recreation Needs: To satisfy recreational needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreation facilities including destination resorts.*

Goal 8 requires local governmental agencies to plan for recreation area, facilities, and opportunities. Goal 8 ensures the provision of recreational facilities to Oregon citizens and is primarily concerned with the provision of those facilities in non-urban areas of the state.

The *2006 Parks, Recreation & Open Space (PROS) Comprehensive Plan* was adopted as an aspiration and guiding document for the City and contains an inventory of existing parks, recreation, and open space resources.[4] PROS Appendix B identifies an existing multi-use path, a segment the Ruth Bascom Riverbank Trail, on the subject site.[5] Other than the multi-use path segment, the subject site is not included on any formally adopted list, inventory or map identifying the City's existing parks and open space supply.

The *PROS Project and Priority Plan* was adopted by resolution and is an action plan that contains specific project information, including a timeframe for project implementation and cost estimates.[6] A portion of the subject site is identified in the plan as a proposed Metropolitan Park site for acquisition.[7] The plan assigns the acquisition project a Priority 1 level and allocates $1,500,000 in capital costs to "*acquire land to provide significant riverfront open space within* [the] *courthouse/cannery neighborhood.*"[8]

The applicant proposes the sale or transfer of 7.74 acres of land to the City for future cultural landscape, open space, and recreation purposes and to add to the supply of significant riverfront

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[4] *Eugene Parks, Recreation & Open Space (PROS) Comprehensive Plan.* Appendix B Existing Resources. August 25, 2005.

[5] *PROS Comprehensive Plan.* Appendix B Existing Resources. Existing Parks, Recreation and Open Space Resources Map. August 25, 2005.

[6] *PROS Project and Priority Plan.* February 22, 2006.

[7] *PROS Project and Priority Plan.* Map 3, City Central, Existing and Proposed Parks, Recreation and Open Space Resources Map. February 22, 2006.

[6] *PROS Project and Priority Plan.* Table 1: Proposed Projects & Priorities for Parks, Open Space and Recreational Facilities (City Center); and, Table 4: Capital Costs by Planning Area (City Center). May 2006.

open space in public ownership. The proposed amendments and zone change designate said land for "parks and open space" use and the list of permitted uses is based on uses listed in the existing PRO Park, Recreation and Open Space Zone (EC 9.2630) (see Exhibit B S-DR Downtown Riverfront Special Area Zone, EC 9.3145(7)), which is the common zoning designation of parkland. Development standards for parks and open space uses are provided in EC 9.3185 (Exhibit B S-DR Downtown Riverfront Special Area Zone). Proposed improvements are conceptually shown on Sheets L1 and L2 Site Plan (Exhibit G Plan Set).

If the City purchases or accepts a portion of the property for parkland, an increase in the availability of public recreational facilities in the area would occur following development of said parkland. As such, changing the designation of the subject property will have no impact on the City's existing park and open space supply. In no case, as a result of the proposed plan amendments, would a reduction in recreational facilities occur. Regardless of City acquisition, through the proposed amendments and zone change, the proposal will increase the amount of recreation capacity within downtown and riverfront areas.

The proposal does not involve the siting of destination resorts. Based on these findings, the proposed amendments and zone change are consistent with Goal 8.

> *Goal 9 – Economic Development: To provide adequate opportunities throughout the state for a variety of economic activities vital to health, welfare, and prosperity of Oregon's citizens.*

The proposed amendment will re-designate 17.75 acres of land currently designated industrial on the *Metro Plan Diagram*. Two (2) parcels designated Heavy Industrial will be re-designated Mixed Use Areas in order to implement the mixed-use redevelopment vision for the site documented in the *Master Plan*. Because this proposal changes more than two (2) acres of land with the industrial designation, the provisions of OAR 660-009-0010(4), cited below, apply to the request.

> OAR 660-009-0010
>
> (4) For a post-acknowledgement plan amendment under OAR chapter 660, division 18, that changes the plan designation of land in excess of two acres within an existing urban growth boundary from an industrial use designation to a non-industrial use designation, or an other employment use designation to any other use designation, a city or county must address all applicable planning requirements, and:
>
> (a) Demonstrate that the proposed amendment is consistent with its most recent economic opportunities analysis and the parts of its acknowledged comprehensive plan which address the requirements of this division; or
>
> (b) Amend its comprehensive plan to incorporate the proposed amendment, consistent with the requirements of this division; or
>
> (c) Adopt a combination of the above, consistent with the requirements of this division.

OAR 660-009-015(4) requires cities and counties to conduct an Economic Opportunities Analysis which to review and, as necessary, amend their comprehensive plans to provide economic opportunities analyses. The Economic and Opportunities analysis compares the demand of land for industrial and other employment uses to the existing supply of such land (OAR 660-009-0015).

The *Metropolitan Industrial Lands Inventory Report* is the adopted economic opportunities analysis for the city of Eugene. The Industrial Lands Demand Analysis of said report states "based solely on projected employment estimates, estimates projecting the needs for industrial land show no demand for heavy industrial."[9]

In June 2010 ECONorthwest prepared a *Comprehensive Lands Assessment* on behalf of the City of Eugene. Included within is an economic opportunities analysis for employment land demand and employment land supply for both industrial and commercial lands. The applicant notes that this plan is not yet adopted as the City of Eugene's official economic opportunities analysis. Table 3 of said report identifies a surplus of 434 acres of industrial lands and a deficit of 230 acres of commercial lands.[10] This proposed amendments and zone change will re-designate 17.75 acres of industrial land to mixed use, which will increase the amount of commercial and residential acreage available for redevelopment accordingly.

Pursuant to 660-009-0010(4), the proposed amendments and zone change involves a post-acknowledged plan amendment that is consistent with the most recent economic opportunities analysis. Therefore, the proposed amendments and zone change are consistent with Goal 9.

Goal 10 – Housing: To provide for the housing needs of the citizens of the state.

Goal 10 requires that communities plan for and maintain an inventory of buildable residential land for needed housing units. Within the June 2010 *Comprehensive Lands Assessment* a residential lands analysis was conducted to forecast residential housing supply and future demand within the City of Eugene. The analysis forecasted an increase in 14,951 total dwelling units by 2031.[11] Of this increased demand in housing units, 4,784 (32%) will be a combination of two to four unit buildings (1,495 units) and five or more unit buildings (3,289 units).[12] An increase in 748 units annually is needed in order to meet this growing demand in residential housing.[13]

Density figures are used to calculate how much land is needed to accommodate said increases in housing units. Two to four unit buildings are 8.6 units/acre and five or more unit buildings are 24.1 units/acre. This proposal will re-zone 25.94 acres of property currently zoned PL, I2, and I3 to a new special area zone (S-DR) intended to facilitate mixed-use development, specifically residential. The subject property does not currently provide or accommodate residential uses. Provisions included in the proposed S-DR Zone (EC 9.3182(2)(d), Exhibit B S-DR Downtown Riverfront Special Area Zone) require a minimum of one story of residential use within all buildings constructed within the S-DR/MU/2 overlay sub-district.

The applicant notes that the *Comprehensive Lands Assessment* referenced above is not yet adopted. Therefore, the 1999 *Eugene-Springfield Metropolitan Area Residential Lands and Housing Study* is the official inventory and analysis of residential lands for the area. As Eugene and Springfield designate growth management strategies apart from one another, a shift from existing dated and coordinated lands assessment is imminent. The analysis of the 1999 *Eugene-Springfield Metropolitan Area Residential Lands and Housing Study* was compiled based upon data for the entire metropolitan region. The *Supply and Demand Comparison* within the 1999 *Residential Lands*

[9] Lane Council of Governments. *Metropolitan Industrial Lands Inventory Report*. 1993.

[10] ECONorthwest. *Eugene Comprehensive Lands Assessment*. 2010.

[11] ECONorthwest. *Eugene Comprehensive Lands Assessment*. 2010.

[12] ECONorthwest. *Eugene Comprehensive Lands Assessment*. 2010.

[13] ECONorthwest. *Eugene Comprehensive Lands Assessment*. 2010.

and Housing Study shows that an anticipated 60 acres of land is needed for high-density residential development.

During the Master Plan process four (4) redevelopment scenarios for the site were explored to analyze design resiliency and the site's redevelopment potential. The analysis was speculative and results are subject to fluctuating market conditions. Of the four (4) scenarios, the Mixed-Use Neighborhood Scenario anticipated the largest share of residential development. Under this redevelopment scenario, the site accommodated 404 additional dwelling units.

The above findings demonstrate that the proposed amendments and zone change will increase the amount of residential land available for housing units within the City of Eugene through the implementation of a new SAZ that permits residential uses outright. The proposal provides for approximately 12 acres of land with residential development capacity. As noted above, redevelopment has the potential to produce 404 additional dwelling units as part of residential or mixed-use development projects. Based on these findings, the proposed amendments and zone change are compliant with Statewide Planning Goal 10.

> *Goal 11 – Public Facilities and Services: To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.*

The subject site is located inside the City limits and within the Downtown Area, as defined by the *Eugene Downtown Plan*. The subject site is currently developed, contains structures and facilities, and is served by existing utility extensions and facilities. The *2001 Eugene-Springfield Public Facilities and Services Plan* (PFSP), an adopted refinement plan, identifies the subject site as served by existing water, stormwater, and wastewater service.[14] The PFSP does not identify any planned water, wastewater, stormwater, or planned electrical facilities on the subject site. The PFSP does identify an existing electrical facility, the steam plan, which is proposed for decommissioning, on the subject site.[15]

Exhibit F Evaluation of Existing Utility Infrastructure Memorandum provides a broad-level discussion of existing water, wastewater, and stormwater utilities within and surrounding the subject site. Existing public water supply is readily available through the majority of the subject site, as described in Exhibit F and illustrated on Sheets S1 and S2 Existing Conditions Plans (Exhibit G). Extension and reconstruction of specific public water mains adjacent to and within the subject site may be necessary to serve future development. Existing public wastewater systems are expected to be sufficiently deep to provide drainage for the proposed development by gravity. Based on a cursory analysis of public system capacity, a 15-inch wastewater pipe between 6th Avenue and the mid-block of 7th/8th Avenue is anticipated to provide adequate capacity at full build-out to accommodate all future development. As illustrated on Sheets S1 and S2 Existing Conditions Plans, the wastewater line extends to the south, crosses under the railroad tracks, and connects to a public 15-inch wastewater line located at the intersection of 6th Avenue and High Street. An upgrade of the public system from the crossing under the railroad tracks to 6th Avenue/High Street may be necessitated by future development. Alternatively, there are two other wastewater systems in close proximity to the site, including a 15-inch wastewater system within Ferry Street, east of the courthouse, and an 8-inch wastewater system within Hilyard Street near the existing railroad crossing. Both systems provide capacity to accommodate future development as needed. The

[14] *Eugene-Springfield Public Facilities and Services Plan (PFSP)*. Map 5, Existing Water Service Areas; Map 6, Existing Wastewater Service Areas, and Map 7, Existing Stormwater Service Areas. December 2001

[15] *PFSP*. Map 4, Planned Electrical Facilities. December 2001.

subject site is served by two major public storm drainage systems, a 60-inch pipe and a 36-inch pipe, and a minor public storm drainage system, a 12-inch pipe, as illustrated on Sheets S1 and S2 Existing Conditions Plans, which are anticipated to supply sufficient capacity to accommodate future development. Compliance with City stormwater destination standards in EC 9.6791 are not expected to be problematic as the *2002 City of Eugene Stormwater Basin Master Plan* does not identify any specific capacity-related concerns with the public systems and the subject site is generally designated as not having any major flooding problems.[16]

The proposed amendments and zone change do not affect the City's arrangement of public facilities and services. The findings demonstrate that the existing level of public facilities and services is adequate to serve the needs of existing and future development. However, specific design details related to public improvements such as water, stormwater, and wastewater connections will be resolved in the context of any future development proposal. Based on these findings, the proposed amendments and zone change are consistent with Statewide Planning Goal 11.

Goal 12 – Transportation: To provide and encourage a safe, convenient and economic transportation system.

Goal 12 is implemented by the Transportation Planning Rule (TPR) as defined by Oregon Administrative Rule OAR 660-012-0060. This proposal amends the *Metro Plan*, an acknowledged regional comprehensive plan; *the Eugene Downtown Plan* and the *Riverfront Research Park Study,* adopted refinement plans; and Eugene Land Use Code Chapter 9, which is the city's guiding framework for land use regulation.

OAR 660-012-0060

(1) Where an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation would significantly affect an existing or planned transportation facility, the local government shall put in place measures as provided in section (2) of this rule to assure that allowed land uses are consistent with the identified function, capacity, and performance standards (e.g. level of service, volume to capacity ratio, etc.) of the facility. A plan or land use regulation amendment significantly affects a transportation facility if it would:

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

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

(c) As measured at the end of the planning period identified in the adopted transportation system plan:

A. Allow land uses or levels of development that would result in types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

[16] *City of Eugene Stormwater Basin Master Plan.* Volume VI Willamette River. August 2002.

B. Reduce the performance of an existing or planned transportation facility below the minimum acceptable performance standard identified in the TSP or comprehensive plan; or

C. Worsen the performance of an existing or planned transportation facility that is otherwise projected to perform below the minimum acceptable performance standard identified in the TSP or comprehensive plan.

The proposed plan amendments and zone change do not change the functional classification of a transportation facility or change the standards implementing a functional classification system. Therefore, it does not have a significant effect under (a) or (b). A comprehensive Transportation Planning Rule (TPR) analysis and Programmatic Traffic Impact Analysis (TIA) is included as Exhibit D. The findings and conclusions of said analysis are incorporated by reference herein. The findings demonstrate that the proposal is in compliance with the TPR and will not significantly affect any existing or future transportation facilities under (c) as addressed in detail below.

The subject site lies within the boundaries of the *Central Lane Regional Transportation Plan* (Trans Plan) whose horizon year is 2027 and marks the 'end of planning period' as identified by OAR 660-012-0060(1)(c). For analysis purposes, potential site trip generation was estimated for an assumed reasonable "worst case" under the current plan and zoning designations, and four (4) potential development scenarios for the site under the proposed plan and zoning designations. All of the scenarios assume that new development will be in addition to the existing EWEB Administrative Building and the Midgley's Building.

Based on existing designations, the redevelopment is estimated to generate 6,560 daily net trips; 970 net new trips (840 inbound, 130 outbound) are projected to occur during the weekday AM peak hour and 955 net new trips (185 inbound, 770 outbound) are projected to occur during the weekday PM peak hour. Based on proposed designations, the redevelopment is estimated to generate 6,090 daily net new trips; 780 net new trips (655 inbound, 125 outbound) are projected to occur during the weekday a.m. peak hour and 790 net new trips (190 inbound, 600 outbound) are projected to occur during the weekday p.m. peak hour. No future year intersection operational analysis is required for TPR purposes given the reduced peak hour trip generation associated with the proposal.

Findings in Exhibit D, incorporated by reference herein, indicate that the proposed site redevelopment envisioned by the *Master Plan* can be constructed while maintaining acceptable levels of service and safety on the surrounding transportation system. The transportation impacts of the proposed amendments and zone change will have a reduced peak hour impact to the site access and local transportation system compared to development under the existing zoning. Therefore, the proposal will not facilitate land use or levels of redevelopment that would result in types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility (OAR 660-012-0060(1)(c)(A)).

Findings in Exhibit D demonstrate that currently, all transportation facilities operate at acceptable levels during peak hours except the 4th Avenue/Coburg Road intersection, which operates at level of service 'F' and is over capacity. Because the proposed amendments will reduce potential peak hour trips, they will not reduce the performance of an existing or planned transportation facility below the minimum acceptable performance standards (OAR 660-012-0060(1)(c)(B)). Additionally, function of 4th Avenue/Coburg Road intersection will not be worsened beyond its current

performance because the proposed amendments and zone change will reduce potential peak hour trips (OAR 660-012-0060(1)(c)(C)).

As such, the proposed amendments and zone change do not have a significant impact for TPR purposes. The functional classifications of roadways in the study area are also unaffected by the proposed plan amendments and zone change. The project team is coordinating the assessment of the transportation impacts with the City. The proposed plan amendments and zone change will not have a significant effect on the transportation system and it is concluded that the proposed plan amendments and zone change comply with the TPR. Based on these findings, the proposed amendments and zone change are consistent with Goal 12.

Goal 13 – Energy Conservation: To conserve energy.

Goal 13 requires that land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles. Goal 13 is directed at the development of local energy policies and implementing provisions and does not establish any requirements with respect to other types of land use decisions. To the extent that Goal 13 could be applied to the proposed plan amendments and zone change, the designations are consistent with Goal 13.

The proposed site is located so that future mixed-use development can make efficient use of energy with direct and efficient access within the urban area. The proposal will not hinder management or conservation practices related to energy consumption. Consistency with *Metro Plan* Policy J.7, which "*encourage(s) medium- and high-density residential uses when balanced with other planning policies in order to maximize the efficient utilization of all forms of energy*" and notes that "*the highest relative densities of residential development shall be concentrated to the greatest extent possible in areas that are or can be well served by mass transit, paratransit, and foot and bicycle paths*" is demonstrated in the findings under EC 9.7730(3)(b). The proposal facilitates residential uses and pursuant with the proposed amendments and zone change, energy conservation measures are not necessarily limited nor identified as part of the land use change. Based on these findings, the proposed amendments and zone change are consistent with Goal 13.

Goal 14 – Urbanization: To provide and orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, and to provide for livable communities.

The proposed amendments and zone change are site specific to land already subject to urban uses and do not affect the transition from rural to urban land use, as the subject property is within the City limits. Therefore, Goal 14 does not apply.

Goal 15 – Willamette River Greenway: to protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic, and recreational qualities of lands along the Willamette River as the Willamette River Greenway.

Goal 15 aims to protect, conserve, enhance, and maintain the natural scenic, historical, agricultural, economic, and recreational qualities of lands along the Willamette River. As illustrated on Sheet R1 Regulatory Plan (Exhibit G), 19.75 acres of the subject site are located within the Willamette River Greenway. The proposal involves a concurrent request for approval of a Willamette Greenway permit to allow development envisioned by the *Master Plan*.

The subject property does not have an established Willamette Greenway Setback Line. As illustrated on Sheets L1 and L2 Site Plan (Exhibit G Plan Set), the applicant proposes the establishment of a Willamette Greenway setback line to keep structures separated from the river

and to protect, maintain, preserve, and enhance the natural, scenic, historic, and recreational qualities of the Willamette Greenway. The proposed setback line is site specific, context sensitive, and responds to existing conditions and the redevelopment vision. The proposed Greenway setback varies in width from 25 feet to 125 feet adjacent the Willamette River, as delineated from the top-of-bank. The setback's variable width responds to existing site conditions and anticipated redevelopment consistent with the *Master Plan* vision. In total the proposed Willamette Greenway Setback will protect 3.19 acres of the subject site. Adoption of the setback ensures that no new buildings will be constructed between the setback and the river, that adequate public access is provided along the river frontage, that limited existing habitat is protected, and that the remaining natural vegetative fringe is protected.

The findings in Section 5.6 under EC 9.8815 demonstrate compliance with applicable approval criteria and standards for proposed development within Willamette Greenway. Compliance with applicable Metro Plan Willamette Greenway Policies is demonstrated in the findings for EC 9.7730(3)(b) below. Based on these findings, incorporated by reference herein, the proposed amendments and zone change are compliant with Goal 15.

Goal 16-19 – Estuarine Resources, Coastal Shoreland, Beaches and Dune, and Ocean Resources:

There are no estuarine, coastal, ocean, or beach and dune resource on the subject property or otherwise affected by the proposed plan amendment. Therefore, Goals 16 through 19 do not apply.

(b) Adoption of the amendment must not make the Metro Plan internally inconsistent.

The *Metro Plan* land use diagram amendments to re-designate approximately 18.61 acres of land from Heavy Industrial and Parks and Open Space to Mixed Use Area and to apply the Nodal Development Area Overlay designation to approximately 1.12 acres of land will not create an internal conflict with the remainder of the *Metro Plan*, as described below.

Within the subject site, existing land use designations shown in the Metro Plan diagram include: High Density Residential, Heavy Industrial, Parks and Open Space, Mixed Use Areas, and Nodal Development; as defined below:

- Residential, High Density land generally accommodates "*auxiliary uses such as streets, elementary and junior high schools, neighborhood parks, other public facilities, neighborhood commercial services*" if compatible with refinement plans, zoning ordinances, and other local controls. High Density Residential land allows for "*over 20 units per gross acre.*"
- Heavy Industrial land generally accommodates "*industries that process large volumes of raw materials into refined products and/or that have significant external impacts.*"
- Public and Semi-Public, Parks and Open Space land generally accommodates "*existing publicly owned metropolitan and regional scale parks.*"
- Mixed Use land represents "*areas where more than one use might be appropriate, usually as determined by refinement plans on a local level.*"
- Nodal Development is "*a mixed-use pedestrian-friendly land use pattern that seeks to increase concentrations of population and employment in well-defined areas with good transit service, a mix of diverse and compatible land uses, and public and private improvements designed to be pedestrian and transit oriented.*"

The *Master Plan* envisions a green redevelopment of the subject property, with approximately eight acres of dedicated public open space, new construction and adaptive re-use of buildings, pedestrian-oriented streets connecting Downtown Eugene to the Willamette River, and a cultural

landscape that displays the ecological, social, industrial, and civic history of the place. It establishes a framework of streets, open space, and redevelopment parcels as well as a set of allowable uses and use requirements.

The *Master Plan* uses a modified version of the C-2 Commercial Base Zone permitted uses as a guide for determining future allowable uses on the subject. The Master Plan promotes a mix of diverse, compatible, and pedestrian-friendly uses as the prevalent land use pattern. It seeks to increase concentrations of populations and employment by promoting residential, office, and retail uses and the street layout accommodates future transit service, although transit service is currently available in the vicinity of the subject site. Design guidelines within promote pedestrian and transit oriented development. Therefore, the Mixed Use Areas and Nodal Development designations are consistent with the redevelopment vision. Five (5) parcels within the subject site are currently designated Mixed Use Areas, which the proposed amendments will retain.

Based on the definitions above, industries that produce significant external impacts are not compatible with the redevelopment vision, therefore the proposed amendments re-designate Heavy Industrial parcels to Mixed Use Areas. The EWEB North Building currently sits on land designated Parks and Open Space. To facilitate future adaptive reuse of the building, the proposed amendments re-designate the land to Mixed Use Areas. Land located west of the Ferry Street Bridge Viaduct is designated High Density Residential, which based on the definition above, is consistent with the redevelopment vision for the area, therefore the proposed amendments retain the High Density Residential designation.

The proposal involves the establishment of a *Specific Area Plan* (SAP) (Exhibit A Downtown Riverfront Specific Area Plan) and a Special Area Zone (SAZ) (Exhibit B S-DR Downtown Riverfront Special Area Zone) to implement policies described herein. Once adopted, the documents will become part of City's guiding framework for land use regulation. Both documents are designed to provide regulatory incentives that facilitate redevelopment and direct growth and density to the subject site. Through the proposed land use changes and amendments the proposal removes barriers to redevelopment and directs growth and density to the Downtown Riverfront consistent with policies in the Eugene *Downtown Plan*. Although the proposed amendments do not mandate a specified residential density per gross acre for the subject site; they are designed to facilitate mixed-use development, specifically residential; and, they provide for residential construction in areas where it is currently prohibited.

All *Metro Plan* policies were evaluated in relation to their applicability to the amendments and the following policies were found to be applicable to the proposal. The findings demonstrate how the plan amendments are consistent with, and in fact supported by the policy directions contained in the *Metro Plan*.

Residential Land Use and Housing Element

Residential Land Supply and Demand

A.4 Use annexation, provision of adequate public facilities and services, rezoning, redevelopment, and infill to meet the 20-year projected housing demand.

The proposed amendments and zone change involve re-designation of the subject site to facilitate future redevelopment, which will lead to infill development within the downtown core. As described in findings for Goal 10 under EC 9.7730(3)(a), the proposed amendments and zone change are consistent with the *Residential Lands and Housing Study,* will significantly increase the supply of land available for supporting residential development, and through subsequent residential or mixed-use development will help meet projected housing demands. Based on these findings, the proposed amendments and zone change are consistent with Policy A.4.

Residential Density

A.10 Promote higher residential density inside the UGB that utilizes existing infrastructure, improves the efficiency of public services and facilities, and conserves rural resource lands outside the UGB.

A.11 Generally locate higher density residential development near employment or commercial services, in proximity to major transportation systems or within transportation-efficient nodes.

A.12 Coordinate higher density residential development with the provision of adequate infrastructure and services, open space, and other urban amenities.

A.13 Increase overall residential density in the metropolitan area by creating more opportunities for effectively designed in-fill, redevelopment, and mixed use while considering impacts of increased residential density on historic, existing and future neighborhoods.

A. 14 Review local zoning and development regulations periodically to remove barriers to higher density housing and to make provision for a full range of housing options.

A.15 Develop a wider range of zoning options such as new zoning districts, to fully utilize existing Metro Plan density ranges.

A.16 Allow for the development of zoning districts which allow overlap of the established Metro Plan density ranges to promote housing choice and result in either maintaining or increasing housing density in those districts. Under no circumstances, shall housing densities be allowed below existing Metro Plan density ranges.

Redevelopment of the subject site pursuant to the proposed amendments and zone change will facilitate infill of prior developed land already served by existing public utilities. The subject site is located adjacent the downtown area and 5th Street commercial corridor. The redevelopment vision consists of high density, pedestrian oriented, mixed-use development with high-quality public amenities and open space along the riverfront. The proposal involves the establishment of a

Specific Area Plan (SAP) (Exhibit A Downtown Riverfront Specific Area Plan) and a Special Area Zone (SAZ) (Exhibit B S-DR Downtown Riverfront Special Area Zone) which are specifically designed to facilitate higher density residential development within the subject property. As an example, provisions included in the proposed S-DR Zone (EC 9.3182(2)(d), Exhibit B S-DR Zone) require a minimum of one story of residential use within all buildings constructed within the S-DR/MU/2 overlay sub-district. The development standards, requirements, and guidelines in the proposed SAP and SAZ will foster the mixed-use development scenario described above and implement nodal development and growth management policies, consistent with the above policies. Based on these findings, the proposed amendments and zone change are consistent with Policies A.10 through A.16.

Housing Type and Tenure

A.17 Provide opportunities for a full range of choice in housing type, density, size, cost, and location.

A.18 Encourage a mix of structure types and densities within residential designations by reviewing and, if necessary, amending local zoning and development regulations.

A.19 Encourage residential developments in or near downtown core areas in both cities.

Through re-designation and re-zoning portions of the subject property, and establishment of the SAP and SAZ, the proposal provides for increased housing opportunities in areas where it is currently restricted. The proposal involves amending local zoning regulations to facilitate a mix of structure types and densities. Specific development standards of the S-DR Zone include seven different height standards with varied setback, stepback, and build-to lines. The proposal enables residential development within the downtown core. Therefore, the proposed amendments and zone change are consistent with Policies A.17 through A.19.

Design and Mixed Use

A.22 Expand opportunities for a mix of uses in newly developing areas and existing neighborhoods through local zoning and development regulations.

A.23 Reduce impacts of higher density residential and mixed-use development on surrounding uses by considering site, landscape, and architectural design standards or guidelines in local zoning and development regulations.

A.24 Consider adopting or modifying local zoning and development regulations to provide a discretionary design review process or clear and objective design standards, in order to address issues of compatibility, aesthetics, open space, and other community concerns.

Through the plan amendments and zone change the proposal will facilitate a mixed-use development on the subject site where such development does not currently exist. The proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) adheres to form based code principles and is designed to be compatible with neighboring development through the establishment of height limitations, view corridors, build-to lines, and other provisions. Development standards are designed to be site specific and clear and objective. Provisions of the

proposed S-DR Zone include a discretionary design review process for flexibility while still ensuring consistency with the intent of the SAZ and SAP through clear and objective criteria. Based on these findings, the proposed amendments and zone change are consistent with Policies A.22 through A.24.

Economic Element

B.23 Provide for limited mixing of office, commercial, and industrial uses under procedures which clearly define the conditions under which such uses shall be permitted and which: (a) preserve the suitability of the affected areas for their primary uses; (b) assure compatibility; and (c) consider the potential for increased traffic congestion.

The proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) regulations are designed to facilitate a mixed-use development scenario including commercial and residential uses. Limited mixing of office and commercial uses is encouraged through not requiring ground floor commercial but rather specifying minimum ceiling height standards, which promote commercial uses. Provisions such as view corridors, height limitations, and build-to lines contribute to ensure compatibility with adjacent development. Based on these findings, the proposed amendments and zone change are consistent with Policy B.23.

Environmental Resources

Riparian Corridors, Wetlands, and Wildlife Habitat (Goal 5)

C.8 Local governments shall develop plans and programs which carefully manage development on hillsides and in water bodies, and restrict development in wetlands in order to prevent erosion and protect the scenic quality, surface water and groundwater quality, forest values, vegetation, and wildlife values of those areas.

C.10 Local governments shall encourage further study (by specialists) of endangered and threatened plant and wildlife species in the metropolitan area.

C.11 Local governments shall protect endangered and threatened plant and wildlife species, as recognized on a legally adopted statewide list, after notice and opportunity for public input.

The proposal will not amend, supersede, or violate any adopted regulations, plans, or programs that manage development impacts on natural resources. The proposal will not compromise existing established /WR protection provisions in EC 9.4900-9.4980, will increase the amount of landscape area and open space along the Willamette River, and will facilitate restoration of the riparian corridor adjacent to the river as detailed in Exhibit E Riverfront Ecological Analysis and Design Report. There are no documented occurrences of endangered or threatened plant or wildlife species on the subject site. Based on these findings, the proposed amendments and zone change are consistent with Policies C.8, C.10, and C.11.

Open Space (Goal 5)

C.21 When planning for and regulating development, local governments shall consider the need for protection of open spaces, including those characterized by significant vegetation and wildlife. Means of protecting

open space include but are not limited to outright acquisition, conservation easements, planned unit development ordinances, streamside protection ordinances, open space tax deferrals, donations to the public, and performance zoning.

The subject property includes 1,460 lineal feet of frontage along the Willamette River. The subject property is located on an outer, scouring bank. The entire river frontage is reinforced with revetments to provide bank stability and protect civil infrastructure. The easternmost edge of the existing, paved Riverbank Trail generally demarcates the top of bank, as shown on Sheets S1 and S2 Existing Conditions Plans (Exhibit G Plan Set). Narrow bands of riparian vegetation exist, within the revetments, between the Riverfront Trail and the waters edge. Other on-site vegetation consists of trees, shrubs, and groundcovers within parking lot landscape islands and landscape strips adjacent to sidewalks, parking areas, and buildings; and, a narrow strip of shrubs and grasses between the westernmost edge of the Riverbank Trail and developed areas.

Significant on-site vegetation is limited to the riparian corridor and is shown on Sheets S1 and S2 Existing Conditions and described in Exhibit E Riverfront Ecological Analysis and Design Report. The Willamette River adjacent to the development site is identified as a Goal 5 Water Resource. According to ODFW, two salmonid populations listed under the ESA are documented as occurring within the reach of the Willamette River that flows through the project area:

- Upper Willamette River spring Chinook (*Oncorhynchus tshawytscha*) and Critical Habitat – federally threatened (FT)
- Columbia River bull trout (*Salvelinus confluntus*) Distinct Population Segment (DPS) and Critical Habitat - FT

There are no other documented occurrences of significant wildlife species within the subject site. As shown on Sheet C1 Cover Sheet (Exhibit G Plan Set), the proposal will maintain existing open space areas and will result in a significant increase in the amount of landscape and open space areas within the subject site following redevelopment. The subject property currently provides approximately 4.3 acres of open space. Through re-zoning of the property and establishment of the S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) and it's associated cultural landscape and open space sub-district, existing open space areas will be protected and total open space areas will increase to approximately 7.74 acres.

The *PROS Project and Priority Plan* identifies a portion of the subject site as a proposed Metropolitan Park site for acquisition. The plan assigns the acquisition project a Priority 1 level and allocates $1,500,000 in capital costs to "*acquire land to provide significant riverfront open space within* [the] *courthouse/cannery neighborhood.*" The applicant proposes the sale or transfer of 7.74 acres of land to the City for future cultural landscape, open space, and recreation purposes and to add to the supply of significant riverfront open space in public ownership. Regardless of City acquisition, through the proposed amendments and zone change, the proposal protects open space through development standards in the proposed S-DR Zone (EC 9.3185, S-DR Downtown Riverfront Special Area Zone). In addition, protection of significant riparian vegetation is ensured through existing established /WR protection provisions in EC 9.4900-9.4980 which are not affected by the proposal. Sheet R1 Regulatory Plan identifies areas subject to /WR protections. Based on these findings, the proposed amendments and zone change are consistent with Policy C.21.

Natural Hazards (Goal 7)

C.31 *When development is allowed to occur in the floodway or floodway fringe, local regulations shall control such development in order to minimize the potential danger to life and property. Within the UGB, development should*

result in in-filling of partially developed land. Outside the UGB, areas affected by the floodway and floodway fringe shall be protected for their agricultural and sand and gravel resource values, their open space and recreational potential, and their value to water resources.

The subject property is located within the UGB. Portions of the subject property adjacent to the Willamette River are located within the FEMA regulated floodplain, as shown in Exhibit N FEMA Floodplain Map. The majority of the subject site is prior developed, as illustrated on Sheet R1 Regulatory Plan (Exhibit G Plan Set). The proposal facilitates the infill of prior developed land. As discussed in findings for Goal 7 under EC 9.7730(3)(a), the proposal does not advance development in ways that are inconsistent with current standards nor does it modify or exempt existing regulatory protection measures. Based on these findings, the proposed amendments and zone change are consistent with Policy C.31.

Willamette River Greenway and Waterways Element (Goal 15)

D.2 Land use regulations and acquisition programs along river corridors and waterways shall take into account all the concerns and needs of the community, including recreation, resource, and wildlife protection; enhancement of river corridor and waterway environments; potential for supporting non-automobile transportation; opportunities for residential development; and other compatible uses.

Accounting for needs and concerns of the community are the foundation for the *Master Plan* and land use process. As noted in the findings for Goal 8 under EC 9.7730(3)(a), the applicant proposes the sale or transfer of 7.74 acres of land to the City for future cultural landscape, open space, and recreation purposes and to add to the supply of significant riverfront open space in public ownership. If the City purchases or accepts a portion of the property for parkland, an increase in the availability of public recreational facilities in the area would occur following development of said parkland. Regardless of City acquisition, through the proposed amendments and zone change, the proposal will increase the amount of recreation capacity within downtown and riverfront areas. The Willamette River adjacent to the site is identified a Goal 5 Water Resource. The Willamette River, as a water resource, is protected by established protection provisions in the /WR Conservation overlay zone. Development standards and requirements in the proposed S-DR/CL sub-district (EC 9.3185, Exhibit B S-DR Downtown Riverfront Special Area Zone) will ensure enhancement to the corridor and waterway environments. As such, the proposed amendments and zone change account for recreation, resource, and wildlife protection; and, promote enhancement of river corridor and waterway environments.

The proposed S-DR Zone is designed to facilitate a mixed-use development scenario. Stated purposes of the S-DR Zone (EC 9.3130, Exhibit B S-DR Downtown Riverfront Special Area Zone) implement Nodal Development and Transit-Oriented Development policies, which focus on reduced reliance on automobile transportation within designated areas. Design standards within the proposed S-DR zone are intended to foster an active, vibrant, people-oriented district and reduce reliance on automobile use. As noted above in findings for Policies A.22 through A.24, the proposal facilitates residential development and other compatible uses. As such, the proposed amendments and zone change support non-automobile transportation alternatives; and, facilitate opportunities for residential development and other compatible uses. Based on these findings, the proposed amendments and zone change are consistent with Policy D.2.

D.3 Eugene, Springfield, and Lane County shall continue to cooperate in expanding water related parks and other facilities, where appropriate, that allow access to and enjoyment of river and waterway corridors.

This policy is aimed at intergovernmental cooperation between Eugene, Springfield, and Lane County to expand parks and other facilities and public access opportunities. As it relates specifically to Eugene, the following findings are relevant to the proposal. As noted in the findings for Goal 8 under EC 9.7730(3)(a), a portion of the subject site is identified in the *PROS Project and Priority Plan* as a proposed Metropolitan Park site for acquisition. The applicant proposes the sale or transfer of 7.74 acres of land to the City for future cultural landscape, open space, and recreation purposes and to add to the supply of significant riverfront open space in public ownership. If the City purchases or accepts a portion of the property for parkland, an expansion of water related parks and other facilities that allow access of the river would occur following development of said land. As such the proposed amendments and zone change advances the City's role pursuant to the above policy. Therefore, the proposed amendments and zone change are consistent with Policy D.3.

D.5 New development that locates along river corridors and waterways shall be limited to uses that are compatible with the natural, scenic, and environmental qualities of those water features.

As noted previously, the subject property includes 1,460 lineal feet of frontage along the Willamette River. The subject property is located on an outer, scouring bank. The entire river frontage is reinforced with revetments to provide bank stability and protect civil infrastructure. The vast majority of the subject site is prior developed and has been used for industrial/utility uses since the acquisition of the riverfront property in 1908. Since that time, large volumes of fill material have been imported and placed on the subject site. The proposal involves redevelopment of prior development areas.

As noted previously, a portion of the subject site is identified in the *PROS Project and Priority Plan* as a proposed Metropolitan Park site for acquisition. The plan assigns the acquisition project a Priority 1 level and allocates $1,500,000 in capital costs to "*acquire land to provide significant riverfront open space within* [the] *courthouse/cannery neighborhood.*" The applicant proposes the sale or transfer of 7.74 acres of land to the City for future cultural landscape, open space, and recreation purposes and to add to the supply of significant riverfront open space in public ownership. The identification of a portion of the subject size for park acquisition demonstrates the proposed uses consistency with natural, scenic, and environmental qualities of the Willamette River.

The *Master Plan* development process included extensive public involvement, as noted in the findings for Goal 1 under EC 9.7730(3)(a), and an iterative design process that resulted in a redevelopment concept centered on compatibility with natural, scenic, and environmental qualities, as described in the *Downtown Riverfront SAP* (Exhibit A Downtown Riverfront Specific Area Plan). The *Master Plan* envisions a green redevelopment of the subject property, with approximately eight acres of dedicated public open space, new construction and adaptive re-use of buildings, pedestrian-oriented streets connecting Downtown Eugene to the Willamette River, and a cultural landscape that displays the ecological, social, industrial, and civic history of the place.

The *Master Plan* uses a modified version of the C-2 Commercial Base Zone permitted uses as a guide for determining future allowable uses on the subject site, which are the basis for permitted uses in the S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone). The S-DR Zone includes height standards that restrict the maximum height of buildings as development approaches

the Willamette River, thus creating a step-down effect that limits the scale of buildings near the resource. The maximum height of buildings in the proposed S-DR/CL sub-district, the designation for areas adjacent to the river, is 30 feet consistent with maximum height standards in the NR and PRO Zones.

Provisions of the CL sub-district will ensure compatibility with the natural, scenic, and environmental qualities of the Willamette River through the future development of high-quality public open space, recreation areas, interpretive sites, and river overlooks. Based on these findings, the proposed amendments and zone change are consistent with Policy D.5.

D.9 Local and state governments shall continue to provide adequate public access to the Willamette River Greenway.

The subject site is entirely within the City limits. The applicant owns all parcels within the subject site. Existing public access along the Willamette River is provided by the Riverbank Trail, a paved multi-use path that spans the entire length of the subject site. Within the subject site, public access to the Riverfront Trail from surrounding areas in provided at three points: the western terminus of the DeFazio Bridge at the north end of the site, the EWEB plaza at the eastern terminus of 4th Avenue, and a multi-use path connection extending from 6th Avenue to the Riverbank Trail at the south end of the site.

As noted previously, the applicant proposes the sale or transfer of approximately 7.74 acres of land to the City for future cultural landscape, open space, and public access purposes and to add to the supply of significant riverfront open space in public ownership. As illustrated on Sheets L1 and L2 Site Plans (Exhibit G Plan Set), the proposal involves the relocation of the Riverbank Trail to provide for additional landscape and open space area between the multi-use path and the river. The proposed amendments and zone change designate said land for "parks and open space" uses. The proposed S-DR Zone regulating plan designates public accessways, consistent with EC 9.6835, and identifies the relocated Riverbank Trail as an accessways, thus ensuring the continued provision of public access along the Willamette River. In addition, provisions of the S-DR/CL sub-district ensure high-quality public amenities along the riverfront including, overlooks, interpretive sites, riverfront plaza, and riverfront park, which combine to expand public access opportunities along the Willamette River.

Based on the above findings, the proposal ensures the continued provision of adequate public access along the river. Based on these findings, the proposed amendments and zone change are consistent with Policy D.9.

Environmental Design Element

E.1 In order to promote the greatest possible degree of diversity, a broad variety of commercial, residential, and recreational land uses shall be encouraged when consistent with other planning policies.

E.2 Natural vegetation, natural water features, and drainage-ways shall be protected and retained to the maximum extent practical. Landscaping shall be utilized to enhance those natural features. This policy does not preclude increasing their conveyance capacity in an environmentally responsible manner.

E.4 Public and private facilities shall be designed and located in a manner that preserves and enhances desirable features of local and neighborhood areas and promotes their sense of identity.

E.5 Carefully develop sites that provide visual diversity to the urban area and optimize their visual and personal accessibility to residents.

E.6 Local jurisdictions shall carefully evaluate their development regulations to ensure that they address environmental design considerations, such as, but not limited to, safety, crime prevention, aesthetics, and compatibility with existing and anticipated adjacent uses (particularly considering high and medium density development locating adjacent to low density residential).

E.7 The development of urban design elements as part of local and refinement plans shall be encouraged.

E.8 Site planning standards developed by local jurisdictions shall allow for flexibility in design that will achieve site planning objectives while allowing for creative solutions to design problems.

E.9 Refinement plans shall be developed to address compatibility of land uses, safety, crime prevention, and visual impact along arterial and collector streets, within mixed-use areas. During the interim period before the adoption of a refinement plan, these considerations shall be addressed by cities in approving land use applications in mixed use areas by requiring conditions of approval where necessary.

The proposal is designed to facilitate mixed-use, pedestrian friendly redevelopment, including residential lands and the findings herein demonstrate consistency with other applicable planning policies. As illustrated on Sheets L1 and L2 Site Plan (Exhibit G Plan Set), the proposal will result in the designation cultural landscape, open space, and riparian areas adjacent to the Willamette River, which following redevelopment will be enhanced. The proposal does not change or affect existing /WR overlay zone protections established in EC 9.49(1)(c)(1.) and other applicable protection measures and development standards.

Development standards in the proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) are site specific and designed to be compatible with surrounding areas. The proposed S-DR Zone includes development standards that regulate building height and form as well as circulation patterns and view corridors, which are designed to ensure compatibility with adjacent properties. The proposal involves the establishment of a SAP (Exhibit A Downtown Riverfront Special Area Plan) as a refinement plan. The SAP incorporates urban design elements, which have been translated into clear and objective development standards in the proposed S-DR Zone. The design elements of the S-DR Zone adhere to form base code principles and are intended to facilitate the redevelopment vision of the *Master Plan* and refinement plan. The proposed S-DR Zone includes a design review process, which provides flexibility to employ creative solutions to design problems. Based on these findings, the proposed amendments and zone change is consistent with Policies E.1 through E.9.

Transportation Element

Land Use

F.1 Apply the nodal development strategy in areas selected by each jurisdiction that have identified potential for this type of transportation-efficient land use pattern.

F.2 Support application of the nodal development strategy in designated areas through information, technical assistance, or incentives.

F.3 Provide for transit-supportive land use patterns and development, including higher intensity, transit-oriented development along major transit corridors and near transit stations; medium- and high-density residential development within ¼ mile of transit stations, major transit corridors, employment centers, and downtown areas; and development and redevelopment in designated areas that are or could be well served by existing or planned transit.

F.4 Require improvements that encourage transit, bicycles, and pedestrians in new commercial, public, mixed use, and multi-unit residential development.

F.5 Within three years of TransPlan adoption, apply the ND, Nodal Development, designation to areas selected by each jurisdiction, adopt and apply measures to protect designated nodes from incompatible development and adopt a schedule for completion of nodal plans and implementing ordinances.

Sixteen (16) of the twenty-one (21) parcels that comprise the subject property are designated ND Nodal Development. Five (5) parcels located north of 4th Avenue are not designated ND. The proposed amendments apply the ND designation to those specific parcels, resulting in all properties within the Downtown Riverfront having the ND designation. The proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) is designed to implement Nodal Development growth management policies and to foster mixed-use development. The subject site is located within the downtown core and in proximity to the 5th Street commercial corridor and major transit corridors. The proposal involves reconstruction and relocation of the Riverbank Trail, implementation of pedestrian-friendly street designs, and development standards proposed through the S-DR Zone encourage transit, bicycle, and pedestrian use within the mixed-use development. The land use components are the basis for the implementing ordinance for the designated ND area. Therefore, proposed amendments and zone change are consistent with Policies F.1 through F.5.

Transportation Demand Management

F.7 Increase the use of motor vehicle parking management strategies in selected areas throughout the Eugene-Springfield metropolitan area.

F.8 Implement TDM strategies to manage demand at congested locations.

As outlined in findings for Goal 10 under EC 9.7730(3)(a), redevelopment scenarios for the subject site were tested and analyzed as part of the Master Plan process. A mixed-use development scenario, which is what the S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) has been designed to produce, was calculated to provide for an additional 404 dwelling units. Pursuant to EC 9.3165, parking requirements of the proposed S-DR Zone for residential use are between 0.5 and 2.25 spaces per unit. There are no minimum or maximum parking requirements for commercial uses. Accordingly, the mixed-use development scenario referenced above would provide between 202-909 parking spaces for 19.3 acres of development resulting in 10-47 spaces per acre. The parking spaces per acre density requirements of the /ND designation are 12 spaces

per acre.[17] The proposed S-DR Zone allows for and promotes the use of interim parking areas, paved areas currently used for parking or former utility operations, as a means to comply with minimum parking requirements and reduce the amount of new surface parking areas, which is itself a parking management strategy. The findings in Exhibit D TPR/TIA Report address intersection function and congestions and are incorporated by reference herein. Based on these findings, the proposed amendments and zone change are compliant with Policies F.7 through F.8.

Transportation System Improvements: System-Wide

F.11 Develop or promote intermodal linkages for connectivity and ease of transfer among all transportation modes.

F.13 Support transportation strategies that enhance neighborhood livability.

Transportation System Standards in the proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) promote connectivity to existing streets and shape the block pattern and neighborhood livability within the subject property. The proposal supports intermodal linkages through pedestrian and bicycle friendly street design concepts, improvements to the Riverbank Trail system, and accessway requirements, all of which will contribute to enhance neighborhood livability. Therefore, the proposed amendments and zone change are compliant with Policies F.11 and F.13.

Transportation System Improvements: Roadways

F.14 Address the mobility and safety needs of motorists, transit users, bicyclists, pedestrians, and the needs of emergency vehicles when planning and constructing roadway system improvements.

F.15 Motor vehicle level of service policy:

a. Use motor vehicle level of service standards to maintain acceptable and reliable performance on the roadway system. These standards shall be used for:

(1) Identifying capacity deficiencies on the roadway system.

(2) Evaluating the impacts on roadways of amendments to transportation plans, acknowledged comprehensive plans and land-use regulations, pursuant to the TPR (OAR 660-012-0060).

(3) Evaluating development applications for consistency with the land-use regulations of the applicable local government jurisdiction.

b. Acceptable and reliable performance is defined by the following levels of service under peak hour traffic conditions: LOS E within Eugene's Central Area Transportation Study (CATS) area, and LOS D elsewhere.

[17] Lane Council of Governments (LCOG). *Metro Plan.* 2004 Update.

c. Performance standards from the OHP shall be applied on state facilities in the Eugene-Springfield metropolitan area.

In some cases, the level of service on a facility may be substandard. The local government jurisdiction may find that transportation system improvements to bring performance up to standard within the planning horizon may not be feasible, and safety will not be compromised, and broader community goals would be better served by allowing a substandard level of service. The limitation on the feasibility of a transportation system improvement may arise from severe constraints, including but not limited to environmental conditions, lack of public agency financial resources, or land use constraint factors. It is not the intent of TSI Roadway Policy #2: Motor Vehicle Level of Service to require deferral of development in such cases. The intent is to defer motor vehicle capacity increasing transportation system improvements until existing constraints can be overcome or develop an alternative mix of strategies (such as: land use measures, TDM, short-term safety improvements) to address the problem.

This proposal adheres to existing development standards of roadways which implement effective design that address safety concerns and service access needs. Therefore, the proposed amendments and zone change are compliant with Policies F.14 and F.15.

Transportation System Improvements: Pedestrian

F.26 Provide for a pedestrian environment that is well integrated with adjacent land uses and is designed to enhance the safety, comfort, and convenience of walking.

F.27 Provide for a continuous pedestrian network with reasonably direct travel routes between destination points.

F.28 Construct sidewalks along urban area arterial and collector roadways, except freeways.

This proposal is designed to foster a vibrant and active pedestrian environment that is integrated with on-site and adjacent uses. Provisions of the S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) ensure high-quality public amenities along the riverfront including boardwalks, public plaza, cultural landscape areas, interpretive and educational sites, and an improved Riverbank Trail, as illustrated on Sheets L1 and L2 Site Plans (Exhibit G Plan Set). Proposed street designs in the S-DR Zone incorporate pedestrian sidewalks on both sides that will establish and interconnected system within the development site and provide direct routes between destination points. The proposal does not involve arterial or collector roadways. Based on these findings, the proposed amendments and zone change are consistent with Policies F.26 through F.28.

Transportation System Improvements: Roadways

F.17 Manage the roadway system to preserve safety and operational efficiency by adopting regulations to manage access to roadways and applying these regulations to decisions related to approving new or modified access to the roadway system.

A Programmatic Traffic Impact Analysis (TIA) has been prepared as part of this proposal (Exhibit D TPR/TIA Report). The TIA measured peak hour impact under the proposed zoning for selected redevelopment scenarios. The findings, as outlined in findings for Goal 9 in EC 9.7730(3)(a), demonstrate no significant effect to existing transportation facilities. The proposed amendment is compliant with existing regulations, including the TIA requirements, which demonstrate that it meets roadway standards. Therefore, the proposed amendments and zone change are consistent with Policy F.17.

Public Facilities and Services Element

Services to Development Within the Urban Growth Boundary: Planning and Coordination

G.5 The cities shall continue joint planning coordination with major institutions, such as universities and hospitals, due to their relatively large impact on local facilities and services.

Implementation of the land use components of the proposal will consummate the results of joint planning coordination between EWEB, the City of Eugene, and the University of Oregon, which owns property adjacent to the subject site, through participation and involvement in the *Master Plan* visioning process and development of the implementation tools herein. Based on these findings, the proposed amendments and zone change are compliant with Policy G.5.

Energy Element

J.7 Encourage medium- and high-density residential uses when balanced with other planning policies in order to maximize the efficient utilization of all forms of energy. The greatest energy savings can be made in the areas of space heating and cooling and transportation. For example, the highest relative densities of residential development shall be concentrated to the greatest extent possible in areas that are or can be well served by mass transit, paratransit, and foot and bicycle paths.

J.8 Commercial, residential, and recreational land uses shall be integrated to the greatest extent possible, balanced with all planning policies to reduce travel distances, optimize reuse of waste heat, and optimize potential on-site energy generation.

This proposal establishes the framework for a vibrant, active, pedestrian-oriented mixed-use redevelopment. Form based development standards and transportation system standards in the proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) implement Nodal Development and Transit-oriented Development principles. The subject site is located within walking distance to the downtown core and the 5th Street commercial corridor, as well as LTD transit routes and the Amtrak rail station. On-site circulation patterns and public amenities along the riverfront are designed to promote pedestrian and bicycle activities. Based on these findings, the proposed amendments and zone change are consistent with Policies J.7 and J.8.

The findings in EC 9.7730(3)(b) above demonstrate that the proposed amendments and zone change are consistent with all applicable *Metro Plan* policies. As such, approval of this proposal does not make the *Metro Plan* internally inconsistent. This criterion is satisfied.

Metro Plan Amendments Conclusion

Based on the above findings, the proposed amendments are consistent with applicable approval criteria.

5.2 Refinement Plan Amendments and Refinement Plan Adoption

The subject site is within the boundaries of the *Downtown Plan, Riverfront Park Study,* and *Whiteaker Plan.* The proposal involves Refinement Plan text amendments to repeal Downtown Riverfront Policies 2 and 3 in the *Downtown Plan* and EWEB Policy II.E.1, II.E.2, and II.E.3 in the *Riverfront Park Study*, as the policies are now obsolete. The proposal does not amend the *Whiteaker Plan.* Descriptions of the refinement plan text changes are presented below. Findings of compliance with applicable approval criteria and standards are provided under EC 9.8424.

The proposal involves the adoption of the *Downtown Riverfront Specific Area Plan* as a refinement plan to guide future redevelopment. Findings of compliance for applicable approval criteria and standards in EC 9.3020 are provided in Section 5.3 under EC 9.8065.

Downtown Plan

The proposal amends the Downtown Riverfront section, pg. 29, are as follows:

Downtown Riverfront, Pg. 29

Policies

1. Incorporate the Willamette River as an integral element to downtown planning and development.

2. ~~Collaborate with EWEB to encourage relocation of their utility facilities.~~

In 2010, the applicant (EWEB) relocated their utility operations and maintenance functions from the subject site to the new Roosevelt Operations Center (ROC) in west Eugene. Therefore, this policy is obsolete.

3. ~~A master plan for the EWEB riverfront property must be approved by the City before an redevelopment, land use application rezoning, Metro Plan or refinement plan diagram amendments are approved for uses not associated with EWEB functions. The master plan shall be evaluated based on the master plan's consistency with principles A through D below:~~

   A. ~~Create a "people place" that is active, vibrant, accessible and multi-use.~~
   B. ~~Provide appropriate setbacks, deeper where environmental or habitat issues are more critical, shallower in other areas.~~
   C. ~~Incorporate appropriate building and site design techniques that address environmental concerns.~~
   D. ~~Incorporate an educational aspect, so that the riverfront improvements teach us about our river, our history, and our city.~~

   ~~The master plan shall be considered using the City's Type II application procedures, unless the applicant elects to have the master plan reviewed concurrently with a Type III, Type IV or Type V application.~~

The proposal establishes the Downtown Riverfront SAP (Exhibit A Downtown Riverfront Specific Area Plan), which implements the redevelopment vision of the *Master Plan*, as a refinement plan. The *Master Plan* process was completed using the above principles A-D as guiding principles and the resulting vision has been translated into a policy document, the *Downtown Riverfront SAP.* The

land use components herein are submitted pursuant to Type V application procedures as specified above. Based on these findings, this policy is obsolete.

4. 2. Facilitate dense development in the courthouse area and other sites between the core of downtown and the river.

The proposal renumbers Policy 4 to Policy 2 to reflect the repeal of Policies 2 and 3.

Implementation Strategies

The proposal does not amend the Implementation Strategies section.

The proposal removes the first project in the Projects section, as follows:

Projects

Examples of possible projects that address the implementation strategies:

- ~~Partner with EWEB to develop a master plan for the EWEB site.~~

As noted in Section 2.1, a *Master Plan* for the EWEB site was completed in 2010. Therefore, this policy is obsolete.

Riverfront Park Study

The proposal repeals all policies in section E, pg.11-12, as follows:

E. EWEB

~~The following policies are intended to provide direction for future action pertaining to the EWEB main facility and steam plant.~~

~~**1. Property under EWEB ownership within the Riverfront Park Study Area shall remain designated for the utility's main headquarters.**~~

~~In 1983, EWEB embarked on a project to develop a Headquarters Master Plan that investigates alternative for consolidating its 428 employees and major operations at the existing riverfront site. This policy recognizes that the draft EWEB Master Plan, once adopted, will be the bases for future decisions relating to the develop of EWEB's land and operations facilities. It also recognizes that EWEB is an important employer and service provider in the Riverfront Study Area and is especially important because of its proximity to downtown Eugene. The recently adopted Downtown Plan similarly recognized EWEB's continued presence in the study area and anticipates continuing improvements in river access in concert with the implementation of the EWEB Master Plan.~~

The applicant (EWEB) has prepared a new *Master Plan* for future redevelopment of the subject site. This proposed SAP (Exhibit A Downtown Riverfront Specific Area Plan) and S-DR (Exhibit B S-DR Downtown Riverfront Special Area Zone), the implementing regulatory framework, include provisions for improvements to river access in concert with redevelopment. Based on these findings, this policy is obsolete.

~~***2. The City of Eugene shall work with EWEB and the University of Oregon to investigate actions which could be taken to implement improvements in the efficiency of the steam plants operated by both organizations in the Riverfront Study area.***~~

~~*This policy commits the City of Eugene to work with both the University of Oregon and EWEB to attempt to identify ways to increase efficiencies in steam plant operations of both organizations. Increasing steam facility efficiencies has potential impact on future users, e.g., those in the Riverfront Park Area as well as existing steam customers, and consequently is an important community-wide economic diversification issue.*~~

The Steam Plant is being decommissioned and is no longer operational. Therefore, this policy is obsolete.

~~***3. Property owned by the University of Oregon, and currently leased by EWEB for its pole yard, shall be included in the property available for redevelopment for new facilities in the Riverfront Park.***~~

~~*This policy recognizes that the current pole storage is an interim use, and that the University may implement redevelopment plans in its role as property owner.*~~

The applicant owns all parcels within the subject site. The proposal does not include any University-owned properties. The applicant (EWEB) no longer leases the pole yard from the University of Oregon. Based on these findings, this policy is obsolete.

Findings of compliance with applicable approval criteria and standards are provided in EC 9.8424 below.

EC 9.8424 Refinement Plan Amendment Approval Criteria. The planning commission shall evaluate proposed refinement plan amendments based on the criteria set forth below, and forword a recommendation to the city council. The city council shall decide whether to act on the application. If the city council decides to act, it shall approve, approve with modifications or deny a proposed refinement plan amendment. Approval, or approval with modifications shall be based on compliance with the following criteria:

(1) The refinement plan amendment is consistent with all of the following:

(a) Statewide planning goals.

Findings for EC 9.7730(3)(a) demonstrate the proposal's consistency with applicable Statewide Planning goals and are incorporated by reference herein. Based on these findings, this criterion is satisfied.

(b) Applicable provisions of the Metro Plan.

Findings for EC 9.7730(3)(b) demonstrate the proposal's consistency with applicable policies of the *Metro Plan* and are incorporated by reference herein. Based on these findings, this criterion is satisfied.

(c) Remaining portions of the refinement plan.

The proposed amendments to the *Downtown Plan* reflect the establishment of the Downtown Riverfront SAP (Exhibit A Downtown Riverfront Specific Area Plan) and the Downtown Riverfront SAZ (Exhibit B S-DR Downtown Riverfront Special Area Zone). The proposed changes are consistent with the purpose of updating the plan to reflect a new community policy. The policies

proposed for removal are obsolete. The proposal will further the goals and policies of the *Downtown Plan*. The provisions, standards, and development criteria in the proposed S-DR Zone satisfy remaining policies, fulfill the implementation strategies, and execute projects for the subject site within the *Downtown Plan*. The proposed amendments are consistent with the remaining portions of the plan.

The proposed amendments to the *Riverfront Park Study* are consistent with the purpose of updating the plan to reflect a new community policy. These policies proposed for removal are obsolete as they pertain to elements of the site that are no longer pertinent or remain. The proposed amendments will not affect the plan's ability to regulate and guide development within its boundaries and are consistent with remaining portions of the plan. This criterion is satisfied.

(2) The refinement plan amendment addresses one or more of the following:

(a) An error in the publication of the refinement plan.
(b) New inventory material which relates to a statewide planning goal.
(c) New or amended community policies.
(d) New or amended provisions in a federal law or regulation, state statute, state regulation, statewide planning goal, or state agency land use plan.
(e) A change of circumstances in a substantial manner that was not anticipated at the time the refinement plan was adopted.

The proposed amendments do not address an error in the publication of the applicable refinement plan, new inventory materials related to statewide planning goals, new or amended state or federal laws, regulations or policies or a change of circumstances not anticipated at the time of plan adoption. Therefore, criteria EC 9.8424(2)(a), (b), (d), and (e) above are not applicable to the proposed amendments. Pursuant to subsection (c), the proposed amendments address new or amended community policies, as described below.

In 2001, the City Council adopted amendments to *TransPlan*, the *Metro Plan*, and the land use code to implement a nodal development strategy. The majority of the subject site is identified to implement a nodal development strategy and is designated as such by the *Metro Plan* land use diagram. The proposed amendments apply the nodal development (ND) designation to five (5) parcels within the subject site that do not currently have the ND designation, resulting in all properties within the subject site having the ND designation. The proposal implements the nodal development strategy, as described in findings addressing consistency with the *Metro Plan* policies for EC 9.7730(3)(b), consistent with this criterion. The *Master Plan* was completed using existing Downtown Plan policies 3.A. through D. as guiding principles. The *Downtown Plan* and the *Riverfront Park Study* have not been updated to reflect the new and amended community policies as established in the SAP and SAZ and represented in the *Master Plan*. Based on these findings, this criterion is satisfied.

Refinement Plan Amendments and Refinement Plan Adoption Conclusion
Based on the findings above, the proposed amendments and adoption are consistent with refinement plan amendment criteria.

5.3 Code Amendments

The proposal involves amendments to the land use code to adopt the *Downtown Riverfront Specific Area Plan*, establish the S-DR Downtown Riverfront Special Area Zone, and revise other development standards and criteria for consistency with the S-DR Downtown Riverfront Special Area Zone. Revisions to other development standards and criteria in EC Chapter 9 are included as Exhibit C Code Amendments. Findings of compliance with applicable approval criteria are provided under EC 9.8065.

EC 9.8065 Code Amendment Approval Criteria. If the city council elects to act, it may, by ordinance, adopt an amendment to this land use code that:

(1) Is consistent with applicable statewide planning goals as adopted by the Land Conservation and Development Commission.

Findings for EC 9.7730(3)(a) demonstrate the proposed amendments consistency with applicable Statewide Planning goals and are incorporated by reference herein. Based on these findings, this criterion is satisfied.

(2) Is consistent with applicable provisions of the Metro Plan and applicable adopted refinement plans.

Findings for EC 9.7730(3)(b) demonstrate the proposed amendments consistency with applicable policies of the *Metro Plan* and are incorporated by reference herein. Based on these findings, this criterion is satisfied.

(3) In the case of establishment of a special area zone, is consistent with EC 9.3020 Criteria for Establishment of an S Special Area Zone.

The proposed amendments involve the establishment of the S-DR Downtown Riverfront Special Area Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone). Findings of compliance with the criteria of EC 9.3020 are provided below.

EC 9.3020 Criteria for Establishment of an S Special Area Zone. Before adopting an ordinance establishing a S Special Area Zone, the city council shall find that the proposal is in compliance with following criteria:

(1) The area to which the S Special Area Zone is being applied meets at least one of the following criteria:

(a) Is identified in the Metro Plan or a refinement plan as appropriate for nodal development or for a special range of uses or development that can best be achieved with the use of a special area zone; or

(b) Possesses distinctive buildings or natural features that require special consideration to ensure appropriate development, preservation, or rehabilitation. In order to be considered distinctive, it must be demonstrated that:

1. The area is characterized by buildings that merit preservation in order to protect their special features; or

2. The area contains natural features that have been identified by the city as worthy of special treatment or preservation.

Resulting from the 2001 *Metro Plan* amendments referenced in findings for EC 9.8424(2), the majority of the subject site is designated as a Nodal Development area by the *Metro Plan Diagram*,

in accordance with EC 9.3020(1)(a). The subject site contains distinctive buildings including the EWEB Headquarters, Willamette Substation, and Steam Plant in accordance with EC 9.3020(1)(b)(1.). In addition, the subject site is located along the Willamette River, an inventoried Goal 5 Resource, in accordance with EC 9.3020(1)(b)(2.). Based on these findings, this criterion is satisfied.

(2) An analysis of the area demonstrates how the uses and development standards of the S Special Area zone ordinance will facilitate implementation of the planned use of the property or the preservation or rehabilitation of distinctive buildings or natural features of benefit to the community.

The *Master Plan* envisions a green redevelopment of the subject property, with approximately eight acres of dedicated public open space, new construction and adaptive re-use of buildings, pedestrian-oriented streets connecting Downtown Eugene to the Willamette River, and a cultural landscape that displays the ecological, social, industrial, and civic history of the place. It establishes a framework of streets, open space, and redevelopment parcels as well as a set of allowable uses and use requirements. The *Master Plan* promotes a mix of diverse, compatible, and pedestrian-friendly uses as the prevalent land use pattern. It seeks to increase concentrations of populations and employment by promoting residential, office, and retail uses.

The *Master Plan* uses a modified version of the C-2 Commercial Base Zone permitted uses as a basis for determining planned uses and their development intensities on the subject site. The land use code allows for a mixture of commercial and residential uses within the C-2 Zone. However, standards and requirements that apply specifically to mixed-use projects are real and perceived barriers to mixed-use development. In addition, the C-2 Zone allows limited park uses but applies standards, requirements, and limitations of the PRO Parks, Recreation, and Open Space Zone to proposed uses, which depending on the use, can trigger discretionary review process. The combination of use limitations and restrictive standards create barriers to the development of cultural landscape and open space areas, as envisioned by the *Master Plan.*

Regulatory barriers described above led to the evaluation of other approaches to implementing land use regulations, and the special area zone (S) designation was identified as the best available tool to facilitate mixed-use development, while also addressing compatibility with surrounding commercial and residential neighborhoods and natural resource areas. The S designation, and supporting land use code sections, is used to regulate areas identified for nodal development and mixed-use development, including S-CN Chase Node, S-RN Royal Node, S-W Whiteaker, and S-WS Walnut Station. The proposed S-DR Zone (Exhibit B Downtown Riverfront Special Area Zone) blends prescriptive standards, which are the basis for traditional codes, with form-based standards, which relate to development form and de-emphasize use restrictions. Uses are still regulated, using permitted uses in the C-2 and PRO Zones as the basis for allowable uses, but are categorized within broad categories. The proposed S-DR Zone contains a list of permitted uses allowed in the Downtown Riverfront site (EC 9.3145, Exhibit B S-DR Downtown Riverfront Special Area Zone) and a list of prohibited uses (EC 9.3146, Exhibit B S-DR Downtown Riverfront Special Area Zone). Use limitations ensure that, in specific areas along the riverfront, uses are consistent with the objectives of establishing active and vibrant, pedestrian-oriented mixed-use development. The above measures facilitate implementation of the planned uses.

Development standards in the proposed S-DR Zone facilitate the adaptive reuse of existing distinctive buildings (EC 9.3148, Exhibit B Downtown Riverfront Special Area Zone), including: the EWEB Headquarters, Midgley's Building, Operations and Warehouse Building, and Steam Plant, by preempting certain site development standards that present barriers to preservation or rehabilitation. Development standards and guidelines in the proposed S-DR zone are based on

existing standards in the PRO, PL, and NR Zones and promote the enhancement of cultural landscape and open space areas (EC 9.3185, Exhibit B Downtown Riverfront Special Area Zone). Additional established protections in the /WR conservation overlay zone designed to protect natural resources remain applicable to proposed uses on the subject site.

The SAP (Exhibit A Downtown Riverfront Specific Area Plan) and SAZ (Exhibit B S-DR Downtown Riverfront Special Area Zone) have been designed with the intent of establishing the framework to fulfill the redevelopment vision. Provisions and development standards in the S-DR Zone are designed to guide and shape future development pursuant the *Master Plan* vision. Further specific analysis of the subject site is included in the SAP, which is incorporated by reference herein. Once adopted, the documents will become part of City's guiding framework for land use regulation. Both documents are designed to provide regulatory incentives that facilitate redevelopment and direct growth and density to the subject site. The proposed SAZ and SAP allow for mixed-use development, preservation and rehabilitation of distinctive building and natural features, and enable implementation of the planned use of the properties within the subject site. Based on these findings, this criterion is satisfied.

(3) Except for areas zoned S-H Historic Special Area zone, the area to be classified S Special Area includes at least ½ acre in area.

There are no areas within the subject property zoned S-H Historic Special Area Zone. The subject property comprises 27.06 acres. Therefore, this criterion does not apply.

(4) The application of the zone to the properties proposed for inclusion in the S Special Area zone and the required provisions of a special area zone ordinance are consistent with the criteria required for approval of a zone change, according to EC 9.8865 Zone Change Approval Criteria.

Findings for EC 9.8865 demonstrate the proposals compliance with applicable Zone Change Approval Criteria and are incorporated by reference herein. Based on these findings, this criterion is satisfied.

Findings for EC 9.3030 demonstrate that the proposal, involving the adoption and establishment of a new special area zone, fulfills the requirements necessary to do so.

EC 9.3030 Required Provisions of a Special Area Zone Ordinance. Each S Special Area zone is established by an ordinance that contains the following sections:

(1) Purpose describing the intent of the S Special Area zone.

Within the proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) a 'Purpose' section is included as EC 9.3130. Therefore, this criterion is satisfied.

(2) Land Use and Permit Requirements setting forth the uses to be permitted outright, permitted based on approval of a land use application, or permitted subject to special standards.

The proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) contains a 'Permitted Uses' section codified as EC 9.3145, which outlines uses permitted outright and uses permitted subject to special standards. Therefore, this criterion is satisfied.

(3) Development Standards containing development standards governing factors that are necessary to achieve the purpose of the S Special Area zone such as required off-street parking, landscaping, setbacks, and building height limitations.

The proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) contains a 'General Development Standards' section codified as EC 9.3155. Therefore, this criterion is satisfied.

(4) Lot Standards containing lot area and dimension standards applicable in the particular S Special Area zone.

The proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) contains a 'Lot Standards' section codified as EC 9.3150. Therefore, this criterion is satisfied.

(5) Siting Requirements in addition to those at EC 9.8865 Zone Change Approval Criteria.

The proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) contains a 'Siting Requirements' section codified as EC 9.3140. Therefore, this criterion is satisfied.

Code Amendments Conclusion

Based on the above findings, and supporting documentation in Exhibit C Code Amendments, the codes amendments are consistent with applicable approval criteria.

5.4 Zone Change

The proposal involves the re-zoning of sixteen (16) parcels (totaling approximately 25.94 acres) within the subject site from I-2 Light Medium Industrial, I-3 Heavy Industrial, and PL Public Land to S-DR Downtown Riverfront Special Area Zone, which is established under the concurrent amendments to the land use code; and, to remove the /TD Transit Oriented Development Overlay Zone on twelve (12) parcels (totaling approximately 18.10 acres) within the subject site. Five (5) parcels will retain the S-W Whiteaker Special Area Zone designation and nine (9) parcels will retain the existing /WR Water Resources Conservation Overlay Zone designation.

Table 5-4 presents existing and proposed base and overlay zone designations for parcels within the subject site. Exhibit I City of Eugene Zoning Diagram illustrates existing and proposed zoning diagram changes. Assessor's map and tax lot numbers are shown on Sheet C1 Cover Sheet (Exhibit G Plan Set).

Findings of compliance with applicable Zone Change approval criteria are provided in EC 9.8865.

Table 5-4 Existing and Proposed City of Eugene Zoning

ASSESSOR'S MAP & TAX LOT NUMBERS	SIZE	BASE ZONE & OVERLAY ZONE	
17-03-29-33		**Existing**	**Proposed**
1400	0.12 acres	PL/WR	S-DR/WR
1600	0.11 acres	PL/TD/WR	S-DR/WR
1800	0.05 acres	PL/TD/WR	S-DR/WR
2000	0.19 acres	PL/TD/WR	S-DR/WR
2600	0.25 acres	S-W/SR	S-W/SR
2700	0.48 acres	PL/TD	S-DR
2900	0.86 acres	PL/TD/WR	S-DR/WR
17-03-30-44		**Existing**	**Proposed**
7400	0.29 acres	S-W/SR	S-W/SR
8200	0.21 acres	S-W/SR	S-W/SR
8300	0.08 acres	S-W/SR	S-W/SR
8400	0.29 acres	S-W/SR	S-W/SR
8500	1.41 acres	I-2/TD	S-DR
17-03-31-11		**Existing**	**Proposed**
100	0.29 acres	I-2/TD	S-DR
300	0.52 acres	I-2/TD	S-DR
17-03-32-22		**Existing**	**Proposed**
100	11.89 acres	PL/TD/WR	S-DR/WR
300	1.12 acres	I-3/TD	S-DR
400	0.53 acres	I-3/TD	S-DR
401	0.65 acres	I-3/TD	S-DR
800	5.86 acres	PL/WR	S-DR/WR
1500	1.16 acres	I-3/WR	S-DR/WR
1600	0.70 acres	I-3/WR	S-DR/WR

I-2 - Light-Medium Industrial
I-3 - Heavy Industrial
PL - Public Land
S-W - Whitaker Special Area Zone
S-DR Downtown Riverfront Special Area Zone (proposed)
/SR - Site Review Overlay
/TD - Transit Development Overlay
/WR - Water Resource Conservation Overlay

EC 9.8865 Zone Change Approval Criteria. Approval of a zone change application, including the designation of an overlay zone, shall not be approved unless it meets all of the following criteria:

(1) The proposed change is consistent with applicable provisions of the Metro Plan. The written text of the Metro Plan shall take precedence over the Metro Plan diagram where apparent conflicts or inconsistencies exist.

As noted previously, the proposal amends the *Metro Plan* diagram to re-designate two (2) parcels with the Heavy Industrial designation and one (1) parcel with the Parks and Open Space designation to the Mixed Use Area designation and apply the Nodal Development overlay designation to five (5) parcels within the subject site. As noted previously, the proposal involves a zone change, which is dependent upon approval of the *Metro Plan* diagram amendment, to re-zone sixteen (16) parcels from I-2 Light Medium Industrial, I-3 Heavy Industrial, and PL Public Land to S-DR Downtown Riverfront Special Area Zone, which is established under the concurrent amendments to the land use code; and, to remove the /TD Transit Oriented Development Overlay Zone on twelve (12) parcels (totaling approximately 18.10 acres). Five (5) parcels will retain the S-W Whiteaker Special Area Zone designation and nine (9) parcels will retain the existing /WR Water Resources Conservation Overlay Zone designation.

The proposal does not amend the written text of the *Metro Plan* nor are any of the proposed amendments in conflict with the text and diagram, as the proposal relies upon existing designations. The proposed zone changes are designed to implement *Metro Plan* nodal development and mixed-use development policies through the establishment of a SAZ (Exhibit B S-DR Downtown Riverfront Special Area Zone) specifically designed to facilitate redevelopment, mixed-use development, and public access. The findings of EC 9.7730(3)(b) demonstrate the consistency of the proposed zone change with the *Metro Plan* written text and are incorporated by reference herein. Based on the above findings, this criterion is satisfied.

(2) The proposed zone change is consistent with applicable adopted refinement plans. In the event of inconsistencies between these plans and the Metro Plan, the Metro Plan controls.

The subject property is included within the *Downtown Plan* boundaries and the *Riverfront Research Park Plan* boundaries. As part of the implementation of the redevelopment vision, the proposal involves the adoption of the *Downtown Riverfront Specific Area Plan* (Exhibit A Downtown Riverfront Specific Area Plan) as a refinement plan. Approval of the zone change is dependent upon approval of these refinement plan diagram and text amendments.

The Downtown Riverfront Specific Area Plan includes a land use diagram that designates all parcels within the subject site for S-DR Downtown Special Area Zone, with the exception of (5) parcels designated S-W Whiteaker Special Area Zone which retain that designation, consistent with this zone change request. The proposal amends the *Downtown Plan* and *Riverfront Research Park Study* to reflect the establishment of the SAP, to remove obsolete sections, and to address inconsistencies between plans, as demonstrated in findings for EC 9.8424(1)(c). Regarding the removal of the /TD Transit Oriented Development Overlay Zone from the subject property, the development standards in the proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) duplicate the development standards in the /TD Overlay Zone, with minor modifications to align with the redevelopment vision, and are designed to achieve superior performance in development form. The provisions of the /TD Overlay Zone are designed to supplant those of the applicable base zone or overlay zone. As the provisions of the S-DR Zone duplicate and exceed the provisions of the /TD Overlay Zone, retention of the /TD Overlay Zone would create inconsistencies and is therefore is no longer warranted. Based on the above findings, this criterion is satisfied.

(3) The uses and density that will be allowed by the proposed zoning in the location of the proposed change can be served through the orderly extension of key urban facilities and services.

The minimum level of key urban facilities and services are defined in the *Metro Plan* as including wastewater service, stormwater service, transportation, solid waste management, water service, fire and emergency medical services, police protection, City-wide parks and recreation programs, electric service, land use controls, communication facilities, and public schools on a district-wide basis.[18] Wastewater, stormwater, and transportation facilities are currently available or can be extended in an orderly and efficient manner within a reasonable timeframe as needed, consistent with this criterion.

The subject property is located within the UGB and within the downtown core area of Eugene. The subject parcels are currently developed and served by existing urban facilities and services. Future redevelopment will necessitate extension of such services as is typical. Exhibit F Infrastructure Memorandum provides an evaluation of existing Stormwater, Sanitary Sewer, and Water utilities within the subject property, the findings of which are incorporated by reference herein. Existing transportation facilities are sufficient to handle the proposed re-zoning and subsequent development as demonstrated by the findings and conclusions in the TPR/TIA Report (Exhibit D TPR/TIA Report).

Findings of compliance with Statewide Planning Goals 11 and 12, under EC 9.7730 above, further demonstrate compliance with this criterion. Other public services are available to properties within Eugene's UGB, including the subject parcels, and are available to serve them. Re-zoning subject parcels to S-DR and removing the /TD overlay will not affect the provision of key urban services. Based on the above findings, this criterion is satisfied.

(4) The proposed zone change is consistent with the applicable siting requirements set out for the specific zone in:

(a) EC 9.2150 Commercial Zone Siting Requirements.
(b) EC 9.2430 Industrial Zone Siting Requirements.
(c) EC 9.2510 Natural Resource Zone Siting Requirements.
(d) EC 9.2610 Park, Recreation, and Open Space Siting Requirements.
(e) EC 9.2681 Public Land Zone Siting Requirements.
(f) EC 9.2735 Residential Zone Siting Requirements.
(g) EC 9.3055 S-C Chambers Special Area Zone Siting Requirements.
(h) EC 9.3105 S-CN Chase Node Special Area Zone Siting Requirements.
(i) EC 9.3205 S-DW Downtown Westside Special Area Zone Siting Requirements.
(j) EC 9.3305 S-E Elmira Road Special Area Zone Siting Requirements.
(k) EC 9.3605 S-JW Jefferson Westside Special Area Zone Siting Requirements.
(l) EC 9.3705 S-RP Riverfront Park Special Area Zone Siting Requirements.
(m) EC 9.3805 S-RN Royal Node Special Area Zone Siting Requirements.
(n) EC 9.3905 S-W Whiteaker Special Area Zone Siting Requirements.
(o) EC 9.3955 S-WS Walnut Station Special Area Zone Siting Requirements.
(p) EC 9.4205 /EC East Campus Overlay Zone Siting Requirements.
(q) EC 9.4715 /WP Waterside Protection Overlay Zone Siting Requirements.
(r) EC 9.4776 /WQ Water Quality Overlay Zone Siting Requirements (only for the purposes of adding the overlay zone. See EC 9.4786.).
(s) EC 9.4915 /WR Water Resources Conservation Overlay Zone Siting Requirements (only for the purposes of adding the overlay zone. See EC 9.4960.).

[18] Lane Council of Governments (LCOG). *Metro Plan*. Glossary page V-3. 2004 Update.

(t) EC 9.4815 /WB Wetland Buffer Overlay Zone Siting Requirements.
(u) An uncodified ordinance establishing a site specific S-H Historic Special Area Zone, a copy of which is maintained at the city's planning and development department.

The S-DR Downtown Riverfront Special Area Zone is being established in the land use code as part of the implementation of the redevelopment vision. Approval of the zone change is dependent upon the approval of these code amendments. The proposed code amendments add S-DR siting requirements and renumber EC 9.8865(4)(j) through (v) accordingly, as included in Exhibit C Code Amendments.

The proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) includes siting requirements, which require, in addition to the approval criteria of EC 9.8865, that the site to be rezoned must be included within the Downtown Riverfront area depicted on Figure 9.3135(1) of the proposed S-DR Zone. The siting requirements of the S-DR Zone under EC 9.3140 also state when a property is rezoned as part of the rezoning process, the City shall identify the plan sub-district designation applicable to the property, in accordance with EC 9.3135 plan sub-districts. The proposed S-DR Zone regulatory plan, as depicted on Figure 9.3135(1), includes two sub-districts; mixed-use and cultural landscape and open space.

Regarding the removal of the /TD Overlay Zone from twelve (12) parcels and the retention of the /WR overlay zone on nine (9) parcels, there are no siting requirements related to the /TD Overlay Zone and the /WR Overlay Zone siting requirements only apply for the purposes of adding the overlay zone. Based on the above findings, the proposed zone change is consistent with the criterion.

(5) In cases where the NR zone is applied based on EC 9.2510(3), the property owner shall enter into a contractual arrangement with the city to ensure the area is maintained as a natural resource area for a minimum of 50 years.

The proposal does not involve the application of the /NR Zone. This criterion does not apply.

Zone Change Conclusion
Based on the above findings, the zone change is consistent with applicable criteria.

5.6 Willamette Greenway Permit

Statewide Planning Goal 15, Willamette River Greenway, provides that:

> *"The qualities of the Willamette River shall be protected, conserved, enhanced and maintained consistent with lawful uses present on December 6, 1974. Intensifications of uses, changes of use or developments may be permitted after this date only when they are consistent with the Willamette Greenway Statute, this Goal and* [other standards]*."*

Regarding "other standards," EC 9.8800-9.8825 provides that:

> *"EC 9.8800 Purpose of Willamette Greenway Permits. Intensifications of uses, changes in use, or development require special consideration before being permitted within the boundaries of the Willamette River Greenway. * * * Urban uses may be allowed but conditions of approval may be imposed as are deemed necessary to carry out the purpose and intent of the Willamette River Greenway, and to ensure that any intensifications of uses, changes in use, or developments within the Willamette Greenway boundaries are compatible with nearby uses within the Willamette Greenway."*
>
> *"EC 9.8805 Applicability. Willamette Greenway permit applications are required for intensification of uses, changes in use, or developments within the boundaries of the Willamette River Greenway * * *.*

As illustrated on Sheet R1 Regulatory Plan (Exhibit G Plan Set), approximately 19.75 acres of the subject site are within the boundaries of the Willamette River Greenway. As noted previously, the proposal involves changes in use. Subsequent redevelopment will involve intensifications of uses and new development. Therefore, the proposal requires special consideration and approval of a Willamette Greenway permit to allow development to proceed in accordance with the redevelopment vision and to ensure compatibility with nearby uses.

Findings of compliance with applicable approval criteria and standards are provided in EC 9.8815. As used in this section, the words 'the greatest possible degree" are drawn from Oregon Statewide Planning Goal 15 (F.3.b.) and are intended to require a balancing of factors so that each of the identified Willamette Greenway criteria is met to the greatest extent possible without precluding the requested use.

EC 9.8815 Willamette Greenway Permit Approval Criteria and Standards. Willamette Greenway permit approval may be granted only if the proposal conforms to all the criteria in subsections (1) through (4), and the applicable standards of subsection (5) as follows:

(1) To the greatest possible degree, the intensification, change of use, or development will provide the maximum possible landscaped area, open space, or vegetation between the activity and the river.

This proposal involves intensification, change of use, and new development within the Willamette Greenway, therefore the remaining provisions of EC 9.8815(1) apply to the request.

In the prior approved Willamette Greenway permit for the Autzen Stadium expansion (WG 01-1) the Hearings Official interpreted this criterion, as follows:

> *"The intent of this criterion is, in large part, to ensure the continued integrity of the landscaping area and scenic qualities adjacent to the river, for the benefit of those enjoying the river's scenic and aesthetic attributes."*

As shown on Sheet R1 Regulatory Plan (Exhibit G Plan Set), of the portion of the subject property within the Greenway Boundary, open spaces areas consist of approximately 1.71 acres. As illustrated on Sheets S1 and S2 Existing Conditions Plan, the natural vegetative fringe along the Willamette River, containing landscape areas and vegetation, is limited to the area between the waters edge the easternmost edge of the Riverbank Trail, with the exception of small patches of landscaping (islands, planter strips, and foundation plantings) associated with parking areas and access drives within the site. The vast majority of the subject site is prior developed and has been used for industrial/utility uses since the acquisition of the riverfront property in 1908. Since that time, large volumes of fill material have been imported and placed on the subject site and the entire length of riverbank is armored with riprap. The average slope of the riverbank, between the Riverbank Trail and water's edge, ranges between 34 and 44 percent. These factors have reduced riverbank complexity, which, has contributed to a loss of riparian habitat on the subject site (Exhibit E Riverfront Ecological Analysis and Design Report). Of the area of the subject site within the Willamette Greenway boundary, 92 percent of the site is covered by building or structures (approximately 5.92 acres), impermeable surfaces (approximately 9.03 acres), or other (gravel) surfaces (3.09 acres), as illustrated on Sheet R1 Regulatory Plan.

The proposed amendments and zone change re-zone sixteen (16) parcels within the subject site to the proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone). The special area zone establishes two land use sub-districts; a mixed-use sub-district (S-DR/CL) and a cultural landscape and open space sub-district (S-DR/CL). The proposed S-DR/CL sub-district comprises approximately 7.74 acres of land adjacent the Willamette River and includes existing landscape areas, open space, and vegetation adjacent to the Willamette River, as described above. Permitted and prohibited uses are consistent with those allowed in the PRO Zone. Proposed development standards are based on exiting established development standards in the PRO, NR, and PL Zones, and are designed to achieve equal or higher performance in landscape and open space site protection, restoration, and enhancement. The S-DR/CL sub-district implements the cultural landscape and open space program framework and design guidelines of the SAP (Exhibit A Downtown Riverfront Specific Area Plan). Implementation of the cultural landscape and open space framework ensures high-quality landscape areas and open space between redevelopment areas and the river. In addition, the proposal does not affect existing established /WR Overlay Zone protections, which establishes a 100-foot conservation setback along the Willamette River within the subject site. The /WR provisions limit the types of activities permitted within the setback and will ensure the continued provision of landscape and open space area between redevelopment and the river.

As shown on Sheet C1 Cover Sheet, the proposal will result in approximately 7.74 acres of land dedicated as cultural landscape and open spaces areas. Pursuant to redevelopment, the proposal will create approximately 3.43 acres of new landscape and open space area and will increase the overall site coverage of said areas by 12 percent. The above findings demonstrate that the proposal will provide the maximum possible landscape area, open space, and vegetation between redevelopment and the river. Based on the above findings, this criterion is satisfied.

(2) To the greatest possible degree, necessary and adequate public access will be provided along the Willamette River by appropriate legal means.

As founded in 1911 and chartered by the City, the applicant (EWEB) is a municipal publicly owned utility. The applicant owns all parcels within the subject site. Existing public access along the Willamette River is provided by the Riverbank Trail, a paved multi-use path that spans the entire length of the subject site. Within the subject site, public access to the Riverfront Trail from surrounding areas is provided at three points: the western terminus of the DeFazio Bridge at the north end of the site, the EWEB plaza at the eastern terminus of 4th Avenue, and a multi-use path connection extending from 6th Avenue to the Riverbank Trail at the south end of the site.

A portion of the subject site is identified in the *PROS Project and Priority Plan* as a proposed Metropolitan Park site for acquisition. The plan assigns the acquisition project a Priority 1 level and allocates $1,500,000 in capital costs to "*acquire land to provide significant riverfront open space within* [the] *courthouse/cannery neighborhood.*" The applicant proposes the sale or transfer of approximately 7.74 acres of land to the City for future cultural landscape, open space, and public access purposes and to add to the supply of significant riverfront open space in public ownership.

As illustrated on Sheets L1 and L2 Site Plans (Exhibit G Plan Set), the proposal involves the relocation of the Riverbank Trail to provide for additional landscape and open space area between the multi-use path and the river. The proposed amendments and zone change designate said land for "parks and open space" uses. The proposed S-DR Zone regulating plan designates public accessways, consistent with EC 9.6835, and identifies the relocated Riverbank Trail as an accessways, thus ensuring the continued provision of public access along the Willamette River. In addition, provisions of the S-DR/CL sub-district ensure high-quality public amenities along the riverfront including, overlooks, interpretive sites, riverfront plaza, and riverfront park, which combine to expand public access opportunities along the Willamette River.

Based on the above findings, the proposal ensures the continued provision of necessary and adequate public access along the river. Therefore, this criterion is satisfied.

(3) The intensification, change of use, or development will conform with applicable Willamette Greenway policies as set forth in the Metro Plan.

Findings of compliance with applicable Metro Plan Willamette Greenway policies are included in EC 9.7730(3)(b) and are incorporated by reference herein. Based on these findings, this criterion is satisfied.

(4) In areas subject to the Willakenzie Area Plan, the intensification, change of use, or development will conform with that plan's use management considerations.

The subject site is not located within the boundaries of the *Willakenzie Area Plan*. This criterion does not apply.

(5) In areas not covered by subsection (4) of this section, the intensification, change of use, or development shall conform with the following applicable standards:

(a) Establishment of adequate setback lines to keep structures separated from the Willamette River to protect, maintain, preserve, and enhance the natural, scenic, historic, and recreational qualities of the Willamette Greenway. Setback lines need not apply to water related or water dependent activities as defined in the Oregon Statewide Planning Goals and Guidelines (OAR 660-15-000 et seq.).

The subject property does not have an established Willamette Greenway setback line. As illustrated on Sheets L1 and L2 Site Plan (Exhibit G Plan Set), the applicant proposes the establishment of a Willamette Greenway setback line to keep structures separated from the river and to protect, maintain, preserve, and enhance the natural, scenic, historic, and recreational qualities of the Willamette Greenway. The proposed setback line is site specific, context sensitive, and responds to existing conditions and the redevelopment vision, as described below.

Section C.3 of Goal 15 sets out use management considerations and requirements for local plans and implementing measures. Subsection (k) provides for the Greenway setback. Other relevant considerations include providing adequate public access to the river, protection of significant fish and wildlife habitat, and enhancing and protecting the natural vegetative fringe along the River.

As noted above and illustrated on Sheets S1 and S2 Existing Conditions Plan, the existing natural vegetative fringe along the Willamette River is limited to the area between the waters edge and the easternmost edge of the existing Riverbank Trail, with the exception of small patches of landscaping (islands, planter strips, and foundation plantings) associated with parking areas and access drives within the site. The vast majority of the area within the Greenway boundary is developed and has been used for industrial/utility uses since the acquisition of the riverfront property in 1908. In addition, large volumes of fill material have been imported and placed on the subject site, and the entire length of riverbank is armored with riprap. The average slope of the riverbank, between the Riverbank Trail and water's edge, ranges between 34 and 44 percent. These factors have reduced riverbank complexity, which, has contributed to a loss of riparian habitat (Exhibit E Riverfront Ecological Analysis and Design Report). Within the Greenway boundary 92 percent of the site is covered by buildings/structures (approximately 5.92 acres), impermeable surfaces (approximately 9.03 acres), or other (gravel) surfaces (3.09 acres). Existing structures proposed to remain include the EWEB Headquarters, Steam Plant, and Willamette Substation.

As illustrated on Sheet R1 Regulatory Plan, the proposed Greenway setback varies in width from 25 feet to 125 feet adjacent the Willamette River, as delineated from the top-of-bank. The setback's variable width responds to existing site conditions and anticipated redevelopment consistent with the *Master Plan* vision. Existing structures, including the EWEB Headquarters, Steam Plant, and Willamette Substation are excluded from the setback area. The EWEB Headquarters and Steam Plant are envisioned for adaptive reuse and are therefore excluded to enable future redevelopment.

At the northern boundary of the subject site, the setback encompasses all property currently in use as open space. The setback aligns with the eastern perimeter of the EWEB Headquarters North Building and EWEB Headquarters South Building and increases to approximately 110 feet to encompass the waterfront plaza and public access point between buildings. In the middle portion of the subject site, the setback aligns with the eastern edge of the proposed relocated Riverfront Trail, is approximately 90 feet in width, and includes all areas designated for park use between the trail and the river. Further south, the setback aligns with the eastern perimeters of the Steam Plant and Willamette Substation and includes all areas between those properties and the river. In the southern portion of the subject site, the setback increases to approximately 120 feet to encompass additional areas designated for park or cultural landscape and open space uses.

In total the proposed Willamette Greenway Setback will protect 3.19 acres of the subject site. Adoption of the setback ensures that no new buildings will be constructed between the setback and the river, that adequate public access is provided along the river frontage, that limited existing habitat is preserved, and that the remaining natural vegetative fringe is protected. Section C.3.K of Goal 15 provides guidance on uses allowed within the Willamette Greenway Setback in accordance with the above objectives.

> *"A setback line will be established to keep structures separated from the river in order to protect, maintain, preserve and enhance the natural, scenic, historic, and recreational qualities of the Willamette River Greenway, as identified in Greenway Inventories. The setback line shall not apply to water-related or water-dependent uses."*

Water-related uses are defined as:

> *"Uses which are not directly dependent upon access to a water body, but which provide goods or services that are directly associated with water-dependent land or waterway use, and which, if not located adjacent to water, would result in a public loss of quality in the goods or services offered. Except as necessary for water-dependent or water-related uses*

or facilities, residences, parking lots, spoil and dump sites, roads and highways, restaurants, businesses, factories, and trailer parks are not generally considered dependent on or related to water location needs."

Water-dependent uses are defined as:

"A use or activity which can be carried out only on, in, or adjacent to water areas because the use requires access to the water body for water-borne transportation, recreation, energy production, or source of water."

As illustrated on Sheets L1 and L2 Site Plan, the proposal involves the development of interpretive sites, overlooks, trails, boardwalks, multi-use paths, and green infrastructure within the proposed Willamette Greenway Setback, in addition to riparian restoration and enhancement. All of the proposed uses within the setback are considered water-related in their capacity to provide or enhance recreational access to the Willamette River.

In order to establish the greenway setback line and associated protections, facilitate redevelopment in accordance with the Master Plan vision, and promote the adaptive reuse of existing structures within the subject site, the applicant proposes the following condition of approval:

Proposed Condition of Approval

1. A Willamette Greenway Setback line is established on the subject site through the provisions of Section 9.3147 of the Downtown Riverfront Special Area Zone (Exhibit B) to keep structures separated from the river in order to protect, maintain, preserve and enhance the natural, scenic, historic, and recreational qualities of the Willamette River Greenway, as identified in Greenway Inventories. The setback line shall not apply to water-related or water-dependent uses.

The proposed greenway setback line is generally consistent with the 100-foot conservation setback established by the /WR Overlay Zone. Based on the above findings, and as conditioned, this criterion is satisfied.

(b) Protection of significant fish and wildlife habitats as identified in the Metropolitan Plan Natural Assets and Constraints Working Paper. Sites subsequently determined to be significant by the Oregon Department of Fish and Wildlife shall also be protected.

As noted previously, the eastern portion of the subject site is within the Willamette River Greenway, a natural asset, as identified in the *Metro Natural Assets & Constraints Working Papers*. The Willamette River is adjacent to the development site and is identified as a Goal 5 Water Resource by the *Goal 5 Water Resource Conservation Plan*. As identified on the *Adopted Protection Designations for the Eugene Goal 5 Wetland, Riparian, and Upland Wildlife Habitat Inventories Map* dated November 14, 2005, the Willamette River is categorized a Category A Stream. All parcels within the subject site that abut the Willamette River have /WR Water Resource Conservation overlay zoning. Pursuant to EC 9.4920(1)(c)(1.), Category A streams with a distinguishable high bank have a 100 foot setback applied to top of bank (TOB) as part of the /WR overlay zoning. The proposed amendments do not change protections established by the 100-foot /WR conservation setback in EC 9.4920(1)(c)(1.) or affect inventoried Goal 5 Water Resources.

According to ODFW, two salmonid populations listed under the ESA are documented as occurring within the reach of the Willamette River that flows through the project area:

- Upper Willamette River spring Chinook (*Oncorhynchus tshawytscha*) and Critical Habitat – federally threatened (FT)

- Columbia River bull trout (*Salvelinus confluntus*) Distinct Population Segment (DPS) and Critical Habitat - FT

There are no other documented occurrences of significant wildlife species within the subject site. ODFW has not made any subsequent determinations of significant sites on the subject property. Based on these findings, this criterion is satisfied.

(c) Protection and enhancement of the natural vegetative fringe along the Willamette River to the maximum extent practicable.

As noted previously, the subject property includes 1,460 lineal feet of frontage along the Willamette River. The subject property is located on an outer, scouring bank. The entire river frontage is reinforced with revetments to provide bank stability and protect civil infrastructure. The average slope of the riverbank, between the Riverbank Trail and water's edge, ranges between 34 and 44 percent. The vast majority of the subject site is prior developed and has been used for industrial/utility uses since the acquisition of the riverfront property in 1908. Since that time, large volumes of fill material have been imported and placed on the subject site. These factors have reduced riverbank complexity, which, has contributed to a loss of riparian habitat on the subject site (Exhibit E Riverfront Ecological Analysis and Design Report). Other on-site vegetation consists of trees, shrubs, and groundcovers within parking lot landscape islands and landscape strips adjacent to sidewalks, parking areas, and buildings; and, a narrow strip of shrubs and grasses between the westernmost edge of the Riverbank Trail and developed areas. As illustrated on Sheets S1 and S2 Existing Conditions Plan (Exhibit G Plan Set), the natural vegetative fringe along the Willamette River is limited to the area between the waters edge the easternmost edge of the Riverbank Trail, with the exception of a small strip of landscaping along the west edge of the Riverbank Trail.

Existing riparian vegetation protection measures established by the /WR Overlay Zone in EC 9.4900-9.4980 will not be affected by the proposal. The proposal designates approximately 7.74 acres of land adjacent the Willamette River for cultural landscape and open space uses. S-DR/CL sub-district development standards are designed to facilitate the restoration and enhancement of the natural vegetative fringe along the Willamette River, as illustrated on Sheets L1 and L2 Site Plans and described in the Downtown Riverfront SAP (Exhibit A Downtown Riverfront Specific Area Plan). Based on these findings, the proposal protects and enhances the natural vegetative fringe to the maximum extent practicable without precluding the requested use. This criterion is satisfied.

(d) Preservation of scenic qualities and viewpoints as identified in the Metropolitan Plan Natural Assets and Constraints Working Paper.

The *Metropolitan Natural Assets and Constraints Working* Paper does not identify any scenic qualities or viewpoints on the subject site. This criterion does not apply.

(e) Maintenance of public safety and protection of public and private property, especially from vandalism and trespass in both rural and urban areas to the maximum extent practicable.

As provided by Goal 15, Willamette River Greenway, Section J (OAR 660-015-0005):

> *"Nothing in this Goal is intended to authorize public use of private property. Public use of private property is a trespass unless appropriate easements and access have been acquired in allowance with law to authorize such use."*

The applicant (EWEB) is a publicly owned utility and owns all parcels within the subject site. The proposal does not encourage trespass on private property. All public improvements will be

constructed in accordance with standards specified in EC 9.6505. The improved and relocated Riverbank Trail, a multi-use path, will be lit in accordance with accessway lighting standards and designed to accommodate emergency vehicles. Proposed S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) development standards are consistent with those in the land use code and will contribute to foster public safety and protect of public and private property. Based on these findings, this criterion is satisfied.

> **(f) Compatibility of aggregate extraction with the purposes of the Willamette River Greenway and when economically feasible, applicable sections of state law pertaining to Reclamation of Mining Lands (ORS Chapter 517) and Removal of Material; Filling (ORS Chapter 541) designed to minimize adverse effects to water quality, fish and wildlife, vegetation, bank stabilization, stream flow, visual quality, noise, safety, and to guarantee necessary reclamation.**

The proposal does not involve aggregate extraction nor will it have any impact on existing aggregate resources. This criterion does not apply.

> **(g) Compatibility with recreational lands currently devoted to metropolitan recreational needs, used for parks or open space and owned and controlled by a general purpose government and regulation of such lands so that their use will not interfere with adjacent uses.**

The *2006 Parks, Recreation & Open Space (PROS) Comprehensive Plan* is adopted as an aspiration and guiding document for the City and contains an inventory of existing parks, recreation, and open space resources. PROS Appendix B identifies an existing multi-use path, a segment the Ruth Bascom Riverbank Trail, on the subject site. Alton Baker Park is located across the Willamette River, on the east bank of the river. The northern portion of the site abuts open space owned by the City and associated with the Defazio Bridge.

As noted previously, a portion of the subject site is identified in the *PROS Project and Priority Plan* as a proposed Metropolitan Park site for acquisition. The plan assigns the acquisition project a Priority 1 level and allocates $1,500,000 in capital costs to "*acquire land to provide significant riverfront open space within* [the] *courthouse/cannery neighborhood.*" The applicant proposes the sale or transfer of 7.74 acres of land to the City for future cultural landscape, open space, and recreation purposes and to add to the supply of significant riverfront open space in public ownership. The identification of a portion of the subject size for park acquisition demonstrates the proposed uses consistency with the *PROS Plan* and City lands currently developed to recreational needs.

The *Master Plan* development process included extensive public involvement, as noted in the findings for Goal 1 under EC 9.7730(3)(a), and an iterative design process that resulted in a redevelopment concept centered on compatibility with nearby uses, including recreational lands, as described in the Downtown Riverfront SAP (Exhibit A Downtown Riverfront Specific Area Plan). The *Master Plan* envisions a green redevelopment of the subject property, with approximately eight acres of dedicated public open space, new construction and adaptive re-use of buildings, pedestrian-oriented streets connecting Downtown Eugene to the Willamette River, and a cultural landscape that displays the ecological, social, industrial, and civic history of the place. It establishes a framework of streets, open space, and redevelopment parcels as well as a set of allowable uses and use requirements.

The proposal establishes the S-DR Zone (Exhibit B S-DR Downtown Riverfront Special Area Zone) as a special area zone. The S-DR Zone was designed with specific intent of compatibility with nearby uses including recreational lands. The *Master Plan* uses a modified version of the C-2

Commercial Base Zone permitted uses as a guide for determining future allowable uses on the subject site. The *Master Plan* promotes a mix of diverse, compatible, and pedestrian-friendly uses as the prevalent land use pattern. The S-DR Zone includes height standards that restrict the maximum height of buildings as development approaches cultural landscape and open space areas adjacent to the Willamette River, thus creating a step-down effect that limits the scale of buildings near recreational areas. The maximum height of buildings in the proposed S-DR/CL sub-district, the designation for cultural landscape and open space areas, is 30 feet consistent with maximum height standards in the NR and PRO Zones.

The proposed S-DR Zone regulations are designed to ensure compatibility with adjacent uses. The above findings demonstrate the proposals compatibility with recreation lands, parks, and open space owned by the City. Based on these findings, this criterion is satisfied.

(6) When site review approval is required, the proposed development will be consistent with the applicable site review criteria.

The proposal does not involve or require Site Review. This criterion does not apply.

(7) The proposal complies with all applicable standards explicitly addressed in the application. An approved adjustment to a standard pursuant to provisions beginning at EC 9.8015 of this land use code constitutes compliance with the standard.

The above findings demonstrate compliance with applicable standards explicitly addressed in this application. No adjustment to standards are requested or needed. Based on these findings, this criterion is satisfied.

Willamette Greenway Permit Conclusion

Based on the above findings, the request is consistent with applicable criteria.

5.8 Conclusion

The approved *Master Plan* represents the community's vision for the redevelopment of the Downtown Riverfront. The *Master Plan* is a framework that builds certainty about the vision for the subject property, while being flexible enough to allow this vision to be realized in different ways. The *Master Plan* envisions a green redevelopment of the subject property, with approximately eight acres of dedicated public open space, new construction and adaptive re-use of buildings, pedestrian-oriented streets connecting Downtown Eugene to the Willamette River, and a cultural landscape that displays the ecological, social, industrial, and civic history of the place.

Extensive public involvement was a key component to the creation of a redevelopment strategy that resonates with Eugene residents and satisfies community needs. Throughout the *Master Plan* development process, public input was integrated during design iterations and incorporated into decision-making equations that resulted in the *EWEB Riverfront Master Plan*.

The purpose of the proposal is to facilitate redevelopment of the Downtown Riverfront site consistent with the *Master Plan* vision, to create development standards and urban design guidelines that shape redevelopment, and to enable the transformation of the area into a "people place" that is active, vibrant, accessible and multi-use. The land use components described herein implement the regulatory framework necessary to guide and shape future redevelopment of the subject site.

Based on available information and supporting materials, and the findings in Sections 5.1 through 5.7, the proposal is consistent with all applicable approval criteria.

Transportation Planning Rule Analysis &
Traffic Impact Analysis

Eugene Water & Electric Board (EWEB) Master Planned Development

Eugene, Oregon

October 2012

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

Transportation Planning Rule Analysis &
Traffic Impact Analysis

Eugene Water & Electric Board (EWEB) Master Planned Development

Eugene, Oregon

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Project No. 11329.00

October 2012

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Section 1
Executive Summary

EXECUTIVE SUMMARY

The Eugene Water and Electric Board (EWEB) completed a master plan for approximately 27 acres of property, generally bordered by the Willamette River to the east, High Street to the west, the Union Pacific Railroad to the south, and 4th Avenue to the north. Approximately 15 acres of the site, primarily an impervious utility operations yard today, will be developed in multiple phases. A rezone is proposed to allow development of the site for mixed uses that will be more consistent with surrounding land uses and extend downtown Eugene to the riverfront. The projected timeframe for complete build-out is between 10 and 15 years.

Vehicle access to the site will continue to be provided primarily via 4th Avenue. Mill Street will be extended south of 4th Avenue through the site to a point north of the railroad tracks. Similarly, the existing EWEB Administrative Building driveway will be reconstructed as a local street that travels southeast through the site to a proposed southern site access, a relocated signalized 8th Avenue railroad crossing.[1] In addition, a new 5th Avenue extension is proposed to provide east-west connections through the northern portion of the site. The proposed 5th Avenue extension would provide access to the site from High Street at a new intersection located approximately 150 feet north of the railroad tracks and the current eastern terminus of 5th Avenue.

New roadways will include sidewalks and pedestrian facilities that will serve day-to-day use within the site and provide connectivity to the larger Eugene sidewalk and pedestrian network surrounding the site. In addition, the site will include bicycle and pedestrian accessways to the Ruth Bascom Path, which provides a pedestrian and bicycle friendly riverfront route through the site and connects to downtown and destinations north of the Willamette River.

The results of this study indicate that the proposed EWEB Master Plan site can be redeveloped while maintaining acceptable traffic operations and safety at the study intersections, assuming provision of the recommended mitigation measures.

[1] The EWEB Master Plan proposes relocating the existing at-grade railroad crossing located between Broadway and 8th Avenue approximately 250 feet northwest to create a fourth leg to reconfigured 8th Avenue/Hilyard Street intersection.

Findings

YEAR 2011 EXISTING CONDITIONS

- All of the study intersections operate acceptably during the weekday a.m. and p.m. peak hours, except 4th Avenue/Coburg Road. During the p.m. peak hour, westbound right-turn movement at this intersection currently operates at level of service "F" and over capacity (volume-to-capacity ratio (v/c) > 1.0).
- A review of historical crash data did not reveal any patterns or trends in the site vicinity that require mitigation associated with this project.

PROPOSED DEVELOPMENT PLAN

- Four redevelopment scenarios were prepared by Rowell Brokaw Architects, PC and Cameron McCarthy staff based on the original EWEB master plan work, market forecasts, and other in-process master planning efforts. All of the scenarios assume that any new development will be in addition to the existing EWEB Administrative Building and the Midgley Building.
- The redevelopment scenario with the highest trip generation is estimated to generate 6,090 daily net new trips; 780 net new trips (655 inbound, 125 outbound) are projected to occur during the weekday a.m. peak hour and 790 net new trips (190 inbound, 600 outbound) are projected to occur during the weekday p.m. peak hour.

TRANSPORTATION PLANNING RULE (TPR) ANALYSIS

- The EWEB site consists of multiple parcels, which are currently zoned as a combination of Public Lands (PL), Light-Medium Industrial (I-2), Heavy Industrial (I-3), and Special District (S-W Whiteaker Special Area Zone) with Transit-Oriented District (TOD) and Water Resources Conservation (WR) overlays. Under the proposed map amendment, the properties would each change designation to a new Special Area Zone (SAZ) identified as Downtown Riverfront (S-DR), retaining the overlays.[2]

[2] The proposed S-DR Downtown Riverfront SAZ is based on a streamlined and modified version of the C-2 Community Commercial zone designation with additional use restrictions, building height limitations, form based standards, and incentives for mixed use projects. Further, the site properties currently zoned S-W will retain their S-W zoning within the SAZ.

- The estimated peak hour trip generation of the site under the proposed S-DR zoning is lower than the trip generation of a reasonable "worst-case" density under the existing zoning. As a result, the proposed rezone would not have a significant effect on the transportation system.
- No future year intersection operational analysis is required for TPR purposes given the reduced peak hour trip generation associated with the rezone proposal.

TRAFFIC IMPACT ANALYSIS

- Future weekday morning and evening peak hour traffic conditions were analyzed for the horizon years 2021 and 2031 prior to site development (background traffic) and with site development (total traffic).
- The analysis assumed reconstruction of the 8th Avenue/Hilyard Street intersection in conjunction with site development as envisioned by the City of Eugene. EWEB will work with the City to procure funding for the improvement and subsequent development phases will determine the appropriate year of completion. It is expected that a variety of public and private funding sources may be used to fund the improvement given its benefits to both the EWEB site and the greater subarea.
- Under each condition evaluated (2021 and 2031 background and total traffic conditions) all but two of the study intersections are forecast to operate at acceptable levels of service during the weekday a.m. and p.m. peak hours.
    - Westbound right-turn movements at the 4th Avenue/Coburg Road intersection continue to operate at level of service "F" and over capacity (v/c > 1.0) during the p.m. peak hour.
    - The eastbound right turn movements at the Coburg Road/3rd Avenue intersection are projected to operate at level of service "F" during the weekday a.m. peak hour before and after site development under year 2031 conditions. The movement will be well under capacity and does not warrant signalization. Further, the EWEB site redevelopment is not anticipated to add any trips to the failing eastbound right-turn movement. The intersection operates acceptably under forecast 2021 conditions.
- Operations at the 4th Avenue/Coburg Road intersection were found to be restored to an acceptable level of service though provision of dual westbound right-turn lanes and signalization of the intersection's northbound and westbound movements.

- Even with signalization and the addition of a second westbound right turn lane, westbound and northbound movements will be over-capacity during the peak 15 minutes. As such, the new signal will be creating opportunities for each movement to proceed under congested conditions. This finding is consistent with the City of Eugene's identification of Coburg Road as a future "congested corridor."

Year 2031 Total Traffic Conditions

- With signalization and the addition of a second westbound right turn lane, the 4th Avenue/Coburg Road intersection is forecast to operate at an acceptable level of service during the weekday a.m. and p.m. peak hours; however, both westbound right-turn and northbound through movements are forecast to operate over capacity (v/c > 1.0).

On-Site Circulation/Site-Access Operations

- Each of the key site driveway study intersections will function acceptably with the proposed traffic control devices.
- Proposed on-site bicycle and pedestrian facilities will serve day-to-day use within the site while providing connectivity to the larger bicycle and pedestrian networks surrounding the site and the Ruth Bascom Path to the west.

Recommendations

The following list provides a summary of the mitigation measures recommended as part of this proposed development.

- The 4th Avenue/Coburg Road intersection should be improved in conjunction with initial redevelopment of the site. Recommended improvements include:
  - Retain right-in/right-out turn movement restrictions;
  - Provide dual right-turn lanes on 4th Avenue between the EWEB Headquarters Building and Coburg Road (approximately 125 feet of storage);
  - Signalize westbound right turn movements on 4th Avenue and northbound through movements on Coburg Road at the intersection (southbound movements would remain unsignalized and pedestrian phases would not be provided because grade-separated pedestrian/bicycle crossings are provided via 4th Avenue and the Southbank Ruth Bascom path under the Ferry Street Bridge); and

- Preserve existing multimodal facilities (bike lane and sidewalk).

- The 8th Avenue/Hilyard Street intersection should be reconstructed in conjunction with site development. Improvements should include:
  - Provision of a new highway-railroad crossing, including track panels, lights, gates, audible warning devices, and upgraded railroad track detection as required by ODOT Rail and/or Union Pacific Railroad;
  - Signalization of the 8th Avenue/Hilyard Street intersection, including pedestrian movements;
  - Provision of a northbound right-turn lane that will offer storage for right-turn vehicles queued on Hilyard Street during train passage.
- Shrubbery, landscaping, and above ground utilities near the internal intersections and site access points should be located and maintained to ensure adequate sight distance.

Additional details of the study methodology, findings, and recommendations are provided within this report.

Section 2
Introduction

INTRODUCTION

Project Description

The Eugene Water and Electric Board (EWEB) completed a master plan for approximately 27 acres of property, generally bordered by the Willamette River to the east, High Street to the west, the Union Pacific Railroad to the south, and 4th Avenue to the north. Figure 1 shows the site vicinity. The site formerly housed maintenance, operations, engineering, and administrative staff in the EWEB headquarters building and accessory buildings.

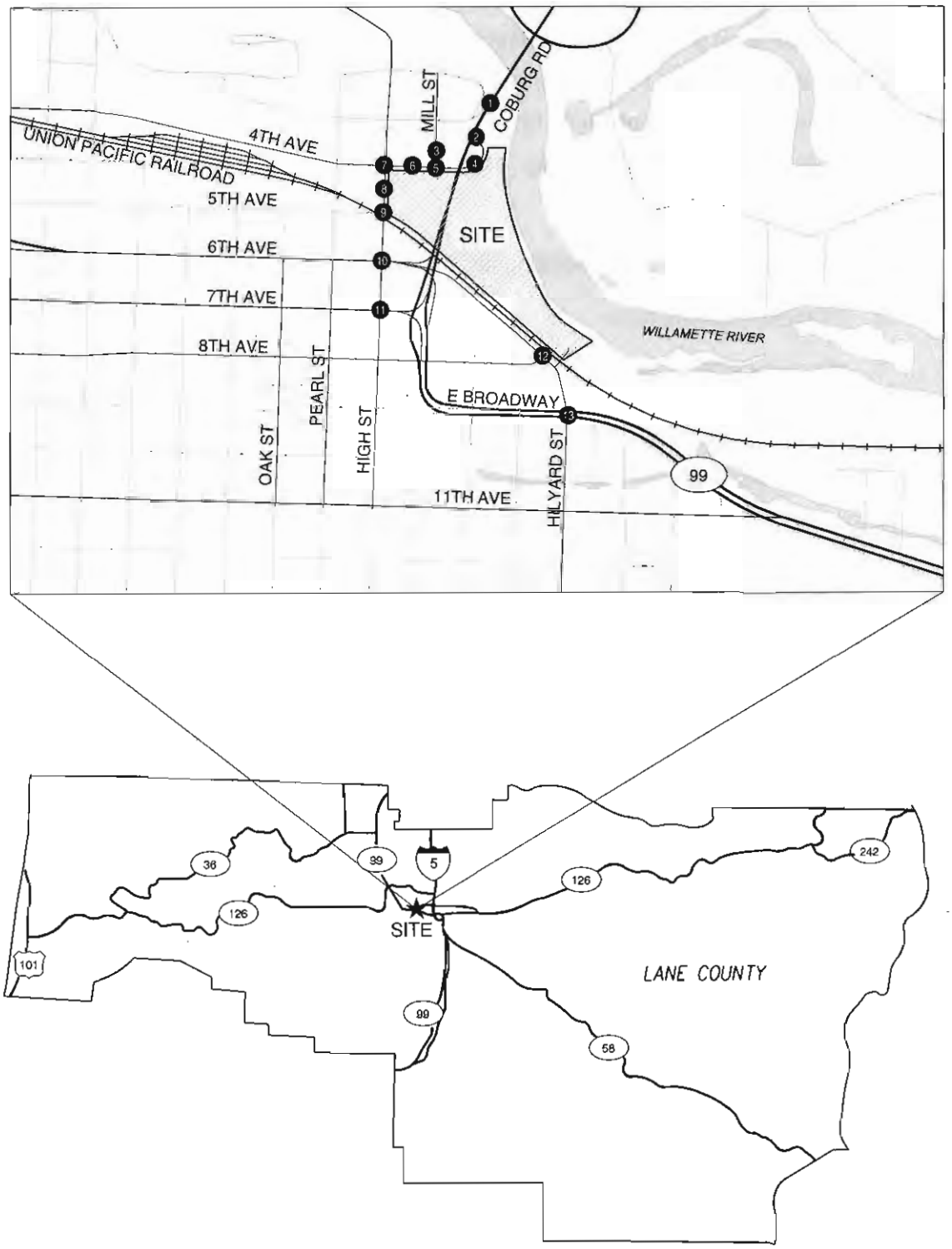
In November 2010, EWEB relocated their maintenance, operations, and engineering staff to a new site in West Eugene, retaining only administrative staff at the existing headquarters building. As a result, much of the current site along the west bank of the Willamette River has been vacated, creating the opportunity for redevelopment as a mixed use center node as recommended in *TransPlan* and adopted city Growth Management Policies. Approximately 15 acres of the site, primarily an impervious utility operations yard today, will be developed in multiple phases. A rezone is proposed to allow development of the site with mixed uses that will be more consistent with surrounding land uses and extend downtown Eugene to the riverfront.

The projected timeframe for complete build-out is between 10 and 15 years. At this time, the site development phases are not yet defined. To ensure a reasonably conservative trip generation estimate, full build-out of the Master Plan development scenarios will be evaluated for near-term (10 year) and long-term (20 year) planning horizons.

Scope of the Report

This report presents a two-part transportation analysis for the EWEB site:

- A Transportation Planning Rule (TPR) analysis to determine whether the proposed rezone of the site will cause a "significant affect", and
- A traffic impact study to examine the proposal and identify transportation infrastructure needs required to support development.



LEGEND

● - STUDY INTERSECTIONS

SITE VICINITY MAP
EUGENE, OREGON

FIGURE **1**

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These analyses determine the transportation-related impacts associated with the proposed EWEB redevelopment and were prepared in accordance with the TPR (OAR 660-012-0060(1)) and the City of Eugene traffic impact analysis requirements (as specified in City of Eugene Code Section 9.8680). In addition, scoping direction was provided by City staff in a letter dated August 4, 2011. Based on the code criteria and staff direction, weekday a.m. and p.m. peak hour operations of the following intersections were studied in detail:

1. 3rd Avenue/Coburg Road Southbound Off-Ramp
2. 4th Avenue/Coburg Road
3. Mill Street /EWEB Parking Lot Driveways
4. 4th Avenue/ EWEB Headquarters Building Driveway
5. 4th Avenue/Mill Street/EWEB Parking Lot Driveway
6. Mill Street/EWEB Overflow Parking Lot Driveways
7. 4th Avenue/High Street
8. High Street/Future 5th Avenue Extension (offset from existing 5th Avenue/High Street intersection)
9. 5th Avenue/High Street
10. 6th Avenue/High Street
11. 7th Avenue/High Street
12. 8th Avenue/Hilyard Street
13. Broadway/Hilyard Street

This report summarizes analyses of the following transportation issues:

- Year 2011 existing land-use and transportation-system conditions within the site vicinity during the weekday a.m. and p.m. peak periods;
- Trip generation potential for various site redevelopment scenarios and Transportation Planning Rule compliance;
- Developments and transportation improvements planned in the study area;
- Forecast year 2021 background traffic conditions (without site redevelopment) during the weekday a.m. and p.m. peak periods;

- Trip generation and distribution estimates for the proposed "worst-case" EWEB site redevelopment scenario;
- Forecast year 2021 total traffic conditions during the weekday a.m. and p.m. peak periods with build-out of the site;
- Forecast year 2031 background traffic conditions (without site redevelopment) during the weekday a.m. and p.m. peak periods;
- Forecast year 2031 total traffic conditions during the weekday a.m. and p.m. peak periods with build-out of the site; and
- On-site traffic operations and circulation.

Section 3
Existing Conditions

EXISTING CONDITIONS

The existing conditions analysis identifies the site conditions and current operational and geometric characteristics of the roadways within the study area. These conditions will be compared with future conditions later in this report.

Kittelson & Associates, Inc. (KAI) staff visited and inventoried the proposed EWEB redevelopment site and surrounding study area in May and June 2011. At that time, KAI collected information regarding site conditions, adjacent land uses, existing traffic operations, and transportation facilities in the study area.

Site Conditions and Adjacent Land Uses

The EWEB site formerly housed EWEB maintenance, operations, and engineering in the EWEB headquarters building and accessory buildings. The site continues to house administrative staff in the EWEB headquarters building. Existing structures on the riverfront property include the 100,000 square foot EWEB Headquarters Building, 49,000 square foot Operations Warehouse, 17,800 square foot Vehicle Repair Shop, 21,000 square foot Communications and Equipment Repair Building, 18,600 square foot Midgley's Building, and 28,000 square foot Steam Plant. The southeastern end of the property holds the Willamette Substation and the former manufactured gas plant (MGP) site, both of which will remain in EWEB ownership.

The EWEB Master Plan assumes that the existing EWEB Administrative Building and the Midgley Buildings will be preserved.[3] The majority of the property available for immediate redevelopment is the approximately 12-acre Operations Yard, which has most recently been used to store power poles, transformers and utility service vehicles. This area of the riverfront property is inaccessible to the public in its present, secured state and is almost entirely impervious.

Transportation Facilities

Table 1 provides a summary of the roadway characteristics of the nearby regional transportation facilities within the site vicinity. Figure 2 illustrates the existing lane configurations and traffic control devices at the study intersections.

[3] The Midgley Building is located on the southeast corner of High Street/4th Avenue.

Table 1 Existing Transportation Facilities and Roadways in the Study Area

Roadway	Functional Classification[1]	Number of Lanes	Speed Limit (mph)	Sidewalks	Bicycle Lanes	On-Street Parking
Coburg Road	Major Arterial	4	35	Yes (west side)[5]	No[5]	No
3rd Avenue	Major Collector	2	25	Yes	No[6]	Yes[7]
4th Avenue	Major Collector	3	25	Yes	Yes	No
Mill Street	Local Street	2	25	Yes	No	Yes
High Street	Minor Arterial/Major Collector[2]	2	20	Yes	Yes[8]	Yes
5th Avenue	Local Street	2	20	Yes	Yes	Yes (south side)
6th Avenue	Major Arterial	4 (one-way)	20	Yes	No	No
7th Avenue	Major Arterial	4 (one-way)	20	Yes	No	No
8th Avenue	Minor Arterial/Local Street[3]	2	20	Yes	Yes[9]	Yes
Hilyard Street	Minor Arterial	2-3 [4]	25	Yes	No[10]	No
Broadway	Major Arterial	6	35	Yes	No	No

[1] City of Eugene Street Classification Map
http://www.eugene-or.gov/portal/server.pt/gateway/PTARGS_0_2_317329_0_0_18/20181_Exhib_A.pdf

[2] High Street is classified as a Minor Arterial south of 6th Avenue and a Major Collector between 3rd Avenue and 6th Avenue.

[3] 8th Avenue is classified as a Minor Arterial between Pearl Street and Coburg Road and a Local Street east of Coburg Road.

[4] Hilyard Street is a 3-lane two-way street between 8th Street and Broadway and a 2-lane one-way street south of Broadway and north of 8th Street.

[5] There is continuous sidewalk along the west side of Coburg Road between the Ferry Street Bridge and 6th Avenue's intersection with High Street. The Ruth Bascom Path also provides an off-street bicycle and pedestrian facility along Coburg Road north of 6th Avenue.

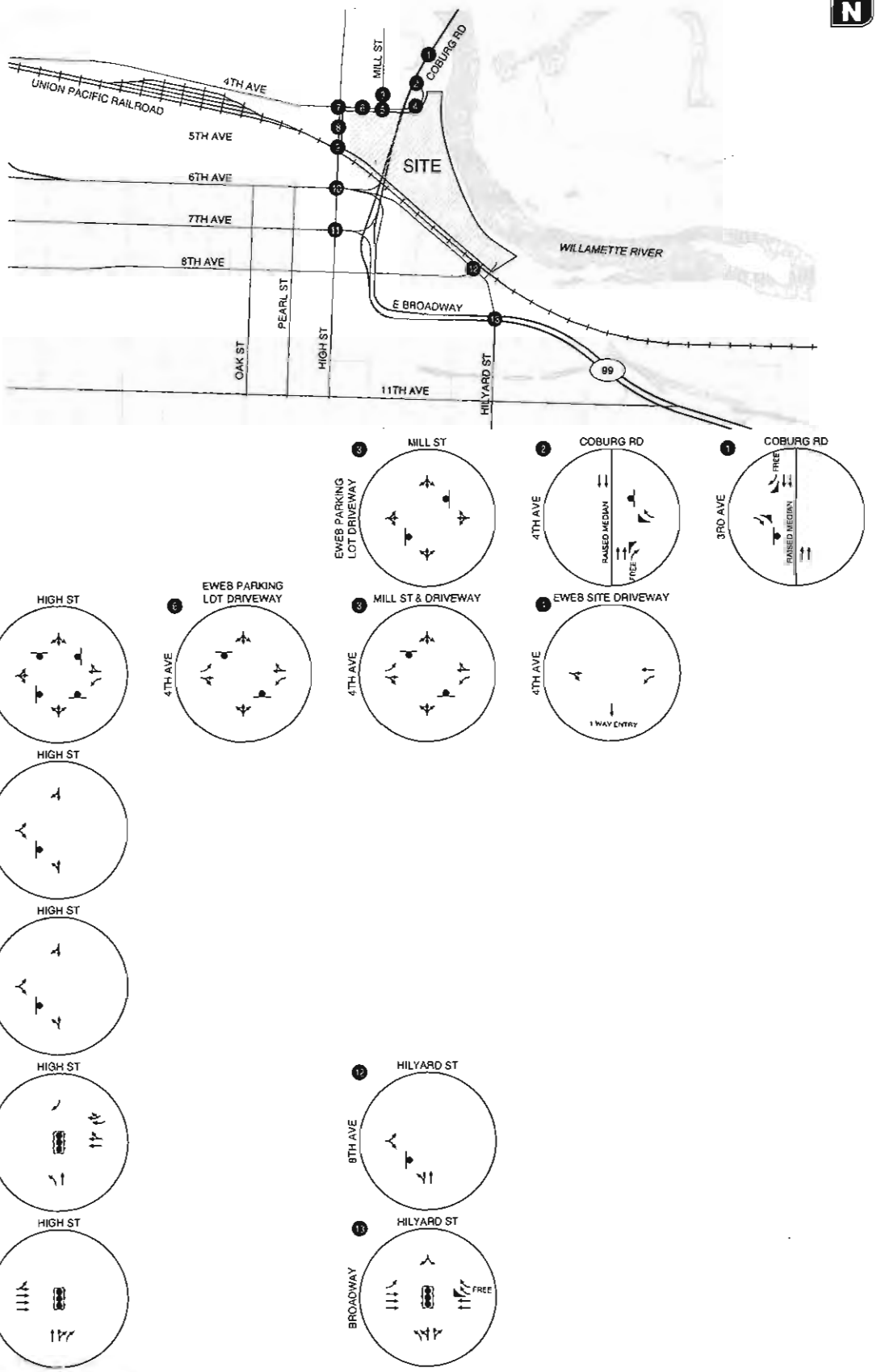
[6] 3rd Avenue is a signed bike route, but does not have marked bike lanes.

[7] On-street parking allowed on both sides of 3rd Avenue east of Mill Street and only on the south side of 3rd Avenue west of Mill Street.

[8] Bike lanes are provided south of 5th Avenue. High Street is a signed bike route north of 5th Avenue, but does not have marked bike lanes.

[9] Bike lanes provided west of High Street.

[10] The Ruth Bascom Path provides an off-street bike facility along the east side of Hilyard Street.



EXISTING LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES
EUGENE, OREGON

FIGURE 2

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PEDESTRIAN AND BICYCLE FACILITIES

Sidewalks are provided along all roadways in the study area except the eastern side of Coburg Road between 6th Avenue and the Ferry Street Bridge. Marked bike lanes are provided on 4th, 5th, and 8th Avenues and the majority of High Street; 3rd Avenue and High Street north of 5th Avenue are signed bike routes, but do not have marked bike lanes.

The Ruth Bascom Path provides additional pedestrian and bicycle routes through the study area. The main path follows the Willamette River through the eastern edge of the site. A branch of the path, located between Hilyard Street and the railroad corridor, extends from 8th Avenue to the 6th Avenue/Coburg Road off-ramp. Another branch of the path extends along the west side of Coburg Road north of 6th Avenue.

TRANSIT FACILITIES

As of September 2011, six Lane Transit District bus lines operate in the site vicinity as described below (Reference 1).

- Bus Line 1, *Campbell Center,* travels between the Eugene Station and Campbell Senior Center near 2nd Avenue/Mill Street. Weekday service is provided at 60-minute headways between approximately 7:30 a.m. and 6:00 p.m. Saturday service is provided at 60-minute headways between 8:00 a.m. and 6:20 p.m. Sunday service is provided at 60-minute headways between 8:30 a.m. and 5:00 p.m.
- Bus Line 12, *Gateway,* travels between the Eugene Station, Gateway Station, and Gateway Loop. Weekday service is provided at 30-minute headways between 6:00 a.m. and 7:00 p.m. and at hourly intervals between 7:45 p.m. and 11:00 p.m. Saturday service varies between 30- and 60-minute intervals and generally runs between 7:30 a.m. and 11:00 p.m. Sunday service is provided at 30 to 60-minute headways between 8:30 a.m. and 7:45 p.m.
- Bus Line 13, *Centennial,* travels between the Eugene Station and the WinCo Foods located on Mohawk Boulevard/Highway 126 in Springfield, OR. Hours of operation vary slightly based on individual stop locations. Service is provided weekdays at 30-minute headways between approximately 6:00 a.m. and 11:00 p.m. Saturday service varies between 30- and 60-minute intervals and generally runs between 7:00 a.m. and 11:00 p.m. Sunday service is limited to one hour operations generally between 8:30 a.m. and 8:00 p.m.
- Bus Line 66, *VRC/Coburg,* travels between the Eugene Station, Valley River Center Station, Marist High School, Delta Oaks Shopping Center, Cal Young Middle School, the Shopko Park

& Ride, and the Papa's Pizza Park & Ride. Weekday service is provided at 15 to 30-minute headways between approximately 6:00 a.m. and 7:00 p.m. and at 60-minute headways between 7:45 p.m. and 10:40 p.m. Saturday service is provided at 30-minute headways between 7:10 a.m. and 6:00 p.m. and at 60 to 75 minute headways between 6:30 p.m. and 10:30 p.m. Sunday service is provided at 60-minute headways between 8:00 a.m. and 7:15 p.m.

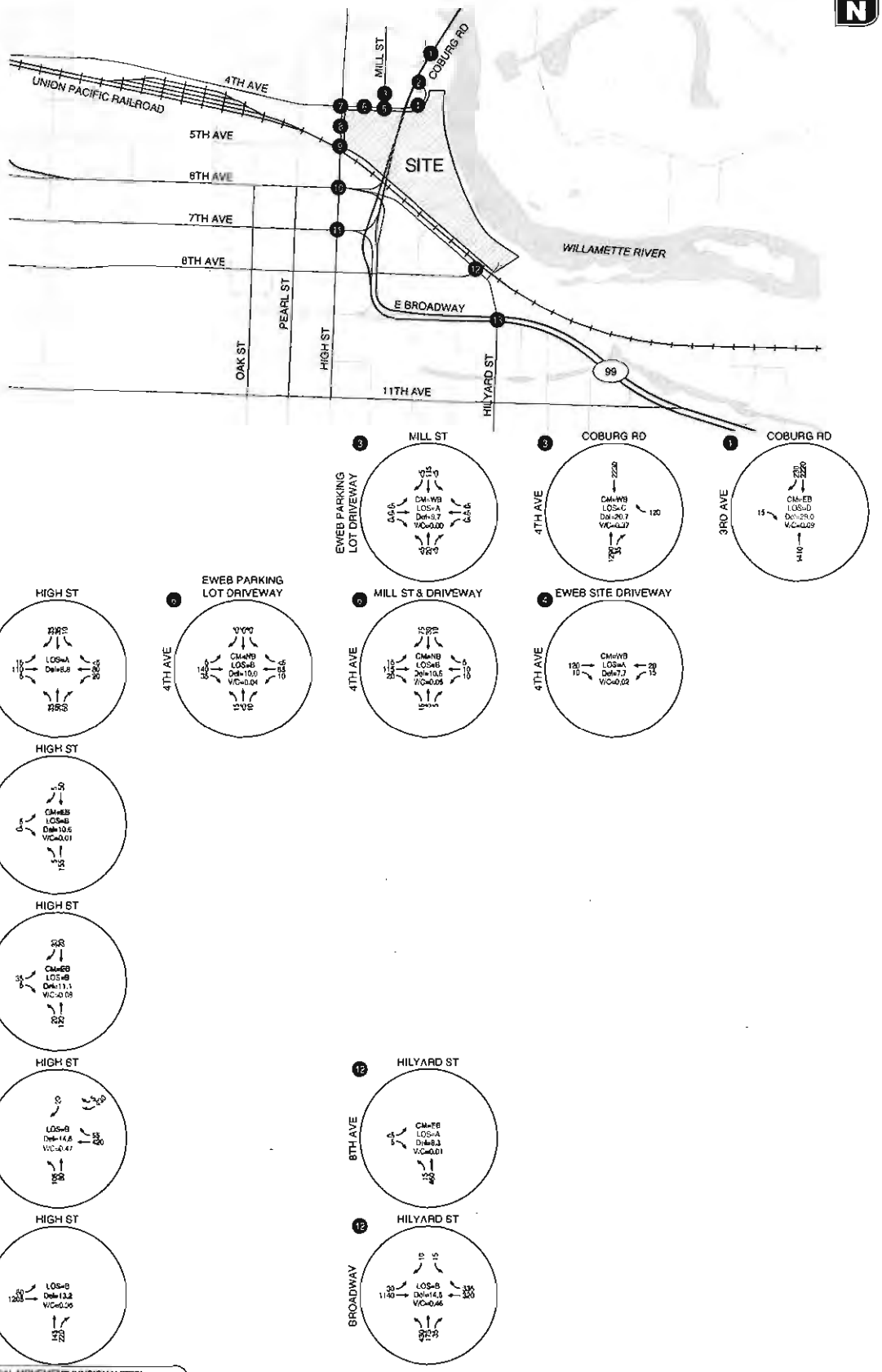
- Bus Line 67, *Coburg Road/VRC*, also travels between the Eugene Station, Valley River Center Station, Marist High School, Delta Oaks Shopping Center, Cal Young Middle School, the Shopko Park & Ride, and the Papa's Pizza Park & Ride. Weekday service is provided at approximately 30-minute headways between 6:45 a.m. and 7:00 p.m. and at 60-minute headways between 7:45 and 11:00 p.m. Saturday service is provided at 30-minute headways between 9:40 a.m. and 6:00 p.m. and at 60 to 75 minute headways between 6:30 p.m. and 11:00 p.m. Sunday service is provided at 60-minute headways between 9:40 a.m. and 8:50 p.m.
- Bus Line 96, *Coburg*, travels between the Eugene Station, Westminster Presbyterian Church Park & Ride, Papa's Pizza Park & Ride, Shopko Park & Ride, and Willamette/Dixon. Northbound weekday service departs from Eugene Station at 6:30 a.m., 7:40 a.m., 3:35 p.m., and 5:35 p.m. Southbound weekday service departs from Willamette/Dixon at 6:45 a.m., 7:58 a.m., 3:59 p.m., and 5:59 p.m. No weekend service is provided.

The nearest designated bus stops are located at 3rd Avenue/High Street (Routes 1, 12, 66, 67), north of 4th Avenue/High Street (Routes 1, 67), north of 5th Avenue/High Street (Route 67), north of 6th Avenue/High Street (Route 67), west of 8th Avenue/High Street (Routes 12, 13, 91, 96).

Traffic Volumes and Peak Hour Operations

In May 2011, manual turning movement counts were obtained for all of the existing study intersections except for the 3rd Avenue/Coburg Road off-ramp, which was counted September 2011. All of the counts used in this analysis were conducted on a typical mid-week day during the morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak time periods.

The system-wide morning and evening peak hours were found to occur between 7:40 a.m. and 8:40 a.m. and 4:40 p.m. and 5:40 p.m., respectively. Figures 3 and 4 summarize the existing weekday a.m. and p.m. turning-movement counts. All volumes shown are rounded to the nearest five vehicles per hour. *Appendix "A" contains the traffic count worksheets used in this study.*



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTRL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2011 EXISTING WEEKDAY AM PEAK HOUR OPERATIONS
EUGENE, OREGON

FIGURE 3

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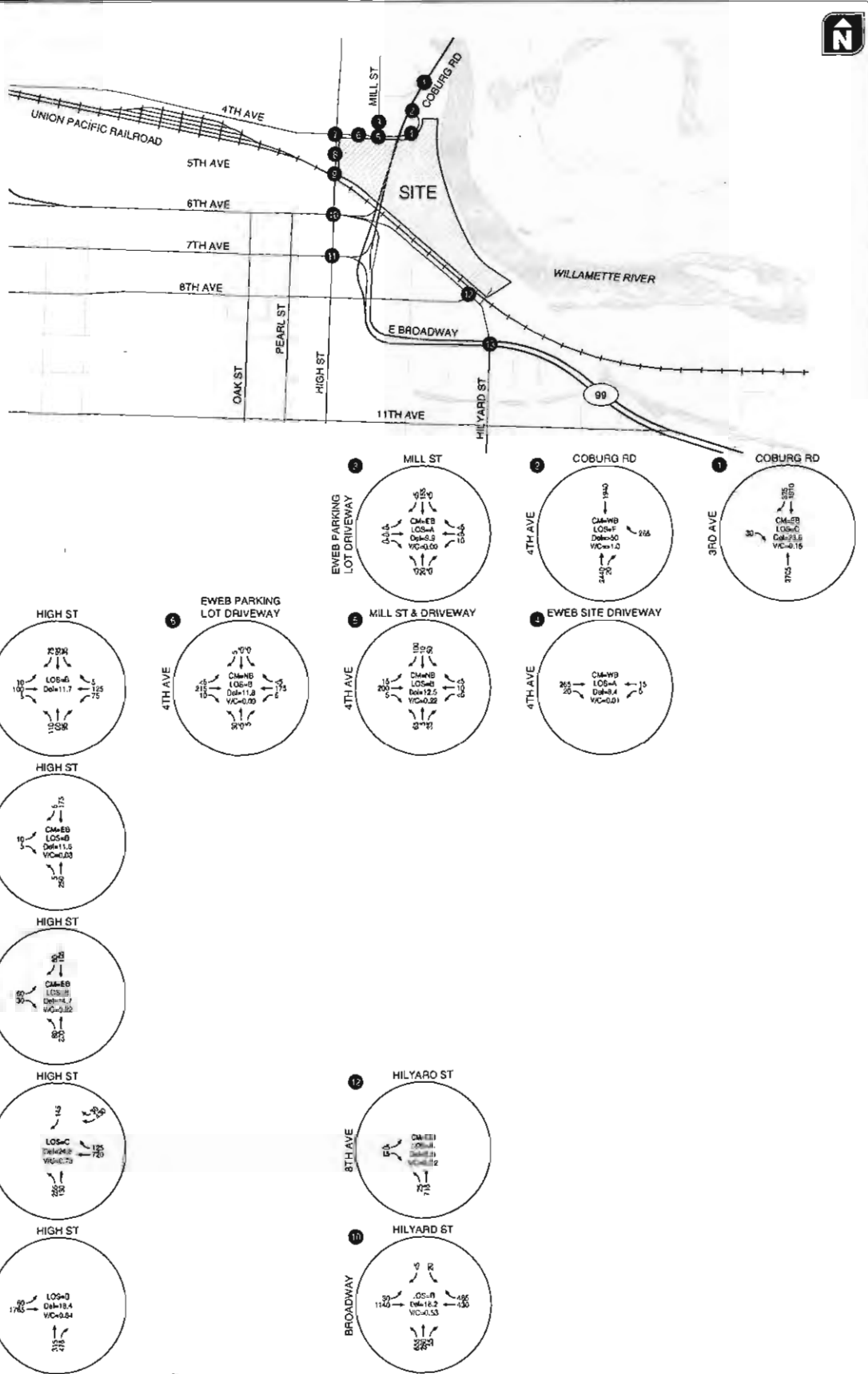

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V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2011 EXISTING WEEKDAY PM PEAK HOUR OPERATIONS
EUGENE, OREGON

FIGURE 4

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LEVEL OF SERVICE DESCRIPTION & OPERATING STANDARDS

All level-of-service analyses described in this report were performed in accordance with the procedures stated in the 2000 *Highway Capacity Manual. A description of level of service and the criteria by which they are determined is presented in Appendix "B".* Appendix "B" also indicates how level of service is measured and what is generally considered the acceptable range of level of service.

To ensure that this analysis was based on a reasonable worst-case scenario, the peak 15-minute flow rate during the peak hour analysis periods was used in the evaluation of all intersection levels of service. For this reason, the analysis reflects conditions that are only likely to occur for 15 minutes out of each average peak hour. Traffic conditions during other typical weekday hours and throughout most weekends will likely be better than those described in this report.

Level of service analyses in this report for all-way and two-way stop-controlled intersections are based on the intersection's ability to accommodate the most difficult, or critical, approach as overall intersection level of service is not defined by the *2000 Highway Capacity Manual.* Level of service analyses for signalized intersections in this report are based on the average control delay per vehicle entering the intersection. Per *TransPlan* (Reference 2), the City of Eugene bases intersection operations on level of service (LOS). City of Eugene standards require that intersections operate at level of service "E" or better (less than 80 seconds of average per vehicle control delay) within the Central Area Transportation Study Area Boundary (Reference 3), which includes the EWEB site and all study intersections. Elsewhere, the City requires that intersections operate at level of service "D" or better (less than 55 seconds of average per vehicle control delay).

CURRENT LEVELS OF SERVICE

Figures 3 and 4 summarize the level-of-service analysis for the study intersections under the weekday a.m. and p.m. peak hour existing traffic conditions. All of the study intersections currently operate acceptably during the weekday a.m. and p.m. peak hours, except 4th Avenue/Coburg Road. During the p.m. peak hour, westbound right-turn movements at this intersection currently operate at level of service "F" and over capacity (volume-to-capacity ratio (v/c) > 1.0). *Appendix "C" includes the level-of-service worksheets under year 2011 existing traffic conditions.*

TRAFFIC SIGNAL WARRANT ANALYSIS

A preliminary traffic signal warrant analysis was conducted based on peak hour counts obtained in May 2011. Traffic signal warrants 1, 2, and 3 were reviewed as described in the *Manual on Uniform Traffic Control Devices* (MUTCD) for the eight-hour vehicular volume, four-hour vehicular volume, and peak

hour vehicular volume (Reference 4). Westbound right-turn volumes on 4th Avenue were adjusted in accordance with the procedure described in the Oregon Department of Transportation (ODOT) *Analysis Procedures Manual* (Reference 5), which discounted 122 of the westbound right-turn traffic volume. Per the MUTCD procedures, all three traffic signal warrants are met at the intersection under existing traffic conditions. *Appendix "C" contains the traffic signal warrant worksheets.*

RAILROAD OPERATIONS

The Union Pacific Railroad operates through the study area and crosses two roadways in the site vicinity (High Street and 8th Avenue) as shown in Figure 1. The existing railroad crossings at High Street and 8th Avenue have active control devices including flashing lights, bells, and gates that notify the public of a train. The 8th Avenue railroad crossing is operated in coordination with the adjacent 8th Avenue/Hilyard Street signalized intersection. Due to equipment limitations, no pedestrian crosswalks are currently provided at the signalized 8th Avenue/Hilyard Street traffic signal.

Count data collected in 2002 and provided by City of Eugene Public Works staff indicates that the Union Pacific Railroad corridor carried 15 freight trains per day between the hours of 7:00 a.m. and 5:00 p.m. with 48 to 94 cars pulled and/or pushed by 2 to 9 locomotives. The freight trains blocked the 8th Avenue/Hilyard Street crossing for between 2.5 to 7 minutes as they each passed and are not programmed by time of day. Passenger rail service is also provided through the area, though the passenger train blockages tend to be much shorter in duration due to the relatively short length of the passenger train consists.

CRASH DATA REVIEW

The crash histories of the respective study intersections were reviewed in an effort to identify potential intersection safety issues. Crash data for the study intersections were obtained from ODOT for the five-year period from January 1, 2005 through December 31, 2009. Table 2 summarizes the reported crashes at each of the study intersections during this five-year period in terms of collision type and frequency. It also includes the crash frequency and crash rate for each intersection.

Table 2 Intersection Crash History (January 1, 2005 through December 31, 2009)

Intersection	Collision Type					Severity		Total	Crash Frequency (per year)	Crash Rate[3] (per MEV[2])
	Rear-End	Turning	Angle	Sideswipe-overtaking	Ped	PDO[1]	Injury			
3rd Ave/Coburg Rd	0	1	0	0	0	0	1	1	0.2	0.02
4th Ave/Coburg Rd.	11	1	0	0	0	8	4	12	2.4	0.14
4th Avenue/Mill St.	0	0	0	0	0	0	0	0	0	0
4th Avenue/High St.	0	0	0	0	0	0	0	0	0	0
5th Avenue/High St.	0	0	0	0	0	0	0	0	0	0
6th Ave/High St.	0	7	3	0	0	7	3	10	2	0.30
7th Ave/High St.	1	4	9	0	0	9	5	14	2.8	0.29
8th Ave/Hilyard St.	0	0	0	0	0	0	0	0	0	0
Broadway St./ Hilyard St.	0	3	9	1	1	8	6	14	2.8	0.25
Total	***12***	***16***	***21***	***1***	***1***	***32***	***19***	***51***		

[1] PDO – property damage only

[2] MEV – million entering vehicles (daily entering vehicles = 10 x Peak Hour Volume)

[3] Crash Rate = (Total Crashes) / (5 years x 365 days/year x daily entering vehicles / 1,000,000)

A crash rate greater than 1.0 crashes/MEV at signalized intersections can be considered an indicator that a potential geometric or operational issue may exist and that further evaluations should be conducted. As shown, all crash rates are well below 1.0 crashes/MEV, and the crash data identified no fatalities reported at the study intersections during the five-year period.

The crashes at each intersection were analyzed to identify patterns that may reflect potential intersection safety deficiencies. Crashes were examined based on crash type, direction, and severity, as well as weather and roadway surface conditions, lighting, time of day, day of week, and year. Any identified patterns are discussed in the following paragraphs

Among the twelve crashes reported at 4th Avenue and Coburg Road, eleven were classified as rear-end collisions. Of these, eight involved northbound vehicles stopped on 4th Avenue waiting to make a right-turn onto Coburg Road. Two involved vehicles making a right-turn from 4th Avenue and rear-ending stopped or slowing vehicles on Coburg Road. Future improvements at the intersection discussed later in this report may improve safety at this intersection.

Ten crashes were reported at the intersection of 6th Avenue and High Street. Seven of these were classified as turning movement collisions. Four of the seven turning movement collisions involved

vehicles at the split westbound approach making improper right turns and striking vehicles continuing straight through the intersection. Three angle collisions at this intersection involved northbound vehicles on High Street disregarding the traffic signal and striking westbound vehicles on 6th Avenue.

Fourteen crashes were reported at the intersection of 7th Avenue and High Street. Nine of these crashes were classified as angle collisions; eight involved vehicles disregarding the traffic signal (four southbound and four eastbound) and one involved a vehicle traveling the wrong way on High Street. Four crashes were classified as turn crashes; two involved westbound vehicles making improper left turns and two involved northbound vehicles making improper right turns.

Fourteen crashes were reported at the intersection of Broadway Street and Hilyard Street. Nine of these crashes were angle collisions involving northbound vehicles. Two of the collisions were attributed to drivers not yielding the right-of-way; seven were attributed to drivers disregarding the traffic signal or inattention. Three of the crashes were considered turning movement collisions involving northbound vehicles. All three were attributed to drivers disregarding the traffic signal or other traffic control device. The one pedestrian crash occurred in the westbound direction and was a result of the driver not yielding the right of way. The Broadway/Hilyard Street intersection was recently reconstructed and restriped, which may improve safety at this intersection in the future.

Based on the 2005 to 2009 crash data, none of the study intersections have a crash rate greater than 1.0 crashes/MEV. Rear-end collisions were identified as the predominant crash type at the 4th Avenue/Coburg Road intersection; future improvements at the intersection discussed later in this report may improve safety at this intersection. No other patterns at the intersections indicate the need for safety-related improvements. *The crash data used in this analysis provided by ODOT are provided in Appendix "D".*

Section 4
Transportation Planning Rule Analysis

TRANSPORTATION PLANNING RULE (TPR) ANALYSIS

The TPR is a state planning rule that institutes criteria under which the transportation impacts of a post-acknowledgement plan amendment and zoning map amendment must be evaluated (OAR 660-012-0060(1)). Per the TPR, a two-step review process is required. The first step is to determine if there will be a significant affect on surrounding transportation facilities associated with the proposed amendment. In the event that there is a significant affect, then the local government must put in place measures as provided in OAR 660-012-0060(2), unless the amendment is allowed under sections (3), (9) or (10) of OAR 660-012-0060. However, if the trip generation potential of a particular site is not expected to increase as a result of the proposed amendment, no additional analysis is necessary to satisfy the TPR.

A TPR analysis was conducted to determine if the proposed zone change could result in an increase in potential trips generated by the site beyond that which would occur through reasonable "worst case" development of the site under the existing designation. Based on this analysis, rezoning the property to S-DR and developing to a reasonable "worst-case" density would not have a significant effect on the transportation system. The reasonable "worst-case" trip generation impacts of the proposed rezone activities demonstrate a reduced peak hour impact to the transportation system as compared to redevelopment under the existing zoning. No future year intersection operational analysis is required for TPR purposes given the reduced peak hour trip generation associated with the rezone proposal. Details of the TPR review methodology and findings are presented below.

Existing and Proposed Zoning

The EWEB site consists of multiple parcels, which are currently zoned as a combination of Public Lands (PL), Light-Medium Industrial (I-2), Heavy Industrial (I-3), and Special District (S-W Whiteaker Special Area Zone) with Transit-Oriented District (TOD) and Water Resources Conservation (WR) overlays. The majority of the site is zoned PL, which permits development of accessory uses, public uses operated by a public agency (e.g. government offices, libraries), and select public uses not operated by public agencies (e.g. community centers, gardens, athletic fields). Portions of the site are zoned I-1 and I-3, which permit development of a variety of public, commercial, and industrial uses. Per the City Zoning Code, retail and service commercial uses are a conditional use in the PL District and are limited in size and scope to those primarily serving the permitted uses within one-half mile.

Under the proposed map amendment, the properties would each change designation to a new Special Area Zone (SAZ), identified as Downtown Riverfront (S-DR) with the exception of the S-W zoned areas.

The S-DR designation is based on a modified version of the Community Commercial (C-2) zone, for mixed use development.[4]

Trip Generation Potential Comparison

For analysis purposes, the proposed mixed use center was treated as one site. Using the standard reference manual, *Trip Generation, 8th Edition*, published by the Institute of Transportation Engineers (ITE, Reference 6), the potential site trip generation (including pass-by and internal trips) was estimated for:

- An assumed reasonable "worst case" under the current PL designation, and
- Four (4) potential development scenarios for the site under the proposed S-DR designation.

The four scenarios were developed by Rowell Brokaw Architects, PC and Cameron McCarthy staff based on the original EWEB master plan work, market forecasts, and other in-process master planning efforts. All of the scenarios assume that new development will be in addition to the existing EWEB Administrative Building and the Midgley Building. Table 3 summarizes the proposed land uses in each of the potential development scenarios evaluated.

Based on the existing PL designation, a reasonable "worst-case" scenario for the existing designation was assumed to be 460,000 square feet of new general office space and 9,000 square feet of support services (day care center and bank) in addition to the EWEB Administrative Building and the Midgley Building currently on the site. This building size estimate for the office and support services was derived by assuming a three-story building (no maximum building height is defined in the PL designation) with a floor-to-area ratio (FAR) of approximately 0.7 located across the approximately 15 acres of the site expected to be redeveloped.

[4] The proposed S-DR Downtown Riverfront SAZ is based on a streamlined and modified version of the C-2 Community Commercial zone designation with additional use restrictions, building height limitations, form based standards, and incentives for mixed use projects. Further, the site properties currently zoned S-W will retain their S-W zoning within the SAZ.

Table 3 Potential Development Scenarios

Scenario	Land Use				
	Existing Office[1] (square feet)	Residential (units)	Office (square feet)	Retail (square feet)	Restaurant (square feet)
Existing PL Designation					
"Worst Case"	118,000	-	460,000	9,000	-
Proposed S-DR Designation					
Base Scenario	118,000	250	40,000	22,000	14,000
Mixed-Use Residential	118,000	404	85,000	22,000	14,000
Civic Center	118,000	73	315,000	22,000	14,000
New Industry	118,000	85	255,000	28,000	8,000

[1] Includes EWEB Administrative Building and the Midgley Building

The C-2 zoning, which is the basis for S-DR, allows for the development of a mix of retail, office, and residential uses. Based on an evaluation of the estimated trip generation of the four potential development scenarios shown in Table 3, the "Civic Center" scenario was identified as the reasonable "worst-case" scenario for the proposed S-DR designation. *Appendix "E" contains the trip generation estimates developed for each of the four potential development scenarios. Appendix "F" contains the trip internalization calculations for the existing "worst-case" and four potential development scenarios.*

Table 4 shows the estimated trip generation comparison between the reasonable "worst-case" scenarios for the existing PL zoning and the proposed S-DR zoning. The daily trip estimates in Table 4 have been rounded to the nearest 10 while the peak hour estimates were rounded to the nearest 5.

As shown in Table 4, the trip generation potential of reasonable "worst-case" development under the proposed Downtown Riverfront (S-DR) zoning will result in fewer peak hour trips than "worst-case" development under the existing public lands (PL) zoning. As such, it is concluded that the proposed rezone can comply with the TPR. No additional intersection analyses are required to measure the potential for a significant affect.

Table 4 Reasonable "Worst Case" Trip Generation Scenario Comparison

Land Use	ITE Code	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
Existing PL Zoning									
Existing Office	714	118,000 square feet	940	175	165	10	165	15	150
Internal			*(20)*	*0*	*0*	*0*	*0*	*0*	*0*
Office*	710	460,000 square feet	5,070	715	630	85	685	115	570
Internal			*(20)*	*0*	*0*	*0*	*0*	*0*	*0*
Day Care Center	565	5,000 square feet	400	60	30	30	60	30	30
Internal			*(30)*	*0*	*0*	*0*	*0*	*0*	*0*
Bank (w/Drive Thru)	912	4,000 square feet	590	50	30	20	100	50	50
Internal			*(40)*	*0*	*0*	*0*	*(5)*	*0*	*(5)*
Pass-by (47%)			*(260)*	*(20)*	*(10)*	*(10)*	*(50)*	*(25)*	*(25)*
		Net New Trips	***6,560***	***970***	***840***	***130***	***955***	***185***	***770***
Proposed S-DR Zoning									
Existing Office	714	118,000 square feet	940	175	165	10	165	15	150
Internal			*(20)*	*0*	*0*	*0*	*0*	*0*	*0*
Townhome/Condo	230	49 units	290	20	5	15	25	15	10
Internal			*(110)*	*(5)*	*0*	*(5)*	*(10)*	*(5)*	*(5)*
Apartment	220	24 units	160	10	0	10	15	10	5
Internal			*(60)*	*(5)*	*0*	*(5)*	*(5)*	*(5)*	*0*
Office	710	315,000 square feet	3,470	490	430	60	470	80	390
Internal			*(70)*	*(5)*	*0*	*(5)*	*(5)*	*0*	*(5)*
Retail	820	22,000 square feet	950	25	15	10	80	40	40
Internal			*(90)*	*0*	*0*	*0*	*(5)*	*0*	*(5)*
Pass-by trips (34%)			*(290)*	*(10)*	*(5)*	*(5)*	*(25)*	*(15)*	*(10)*
Restaurant	932	14,000 square feet	1,780	160	85	75	155	90	65
Internal			*(160)*	*(15)*	*(10)*	*(5)*	*(10)*	*(5)*	*(5)*
Pass-by trips (43%)			*(700)*	*(60)*	*(30)*	*(30)*	*(60)*	*(30)*	*(30)*
		Net New Trips	***6,090***	***780***	***655***	***125***	***790***	***190***	***600***
Proposed Zoning - Existing Zoning			**(470)**	**(190)**	**(185)**	**(5)**	**(165)**	**5**	**(170)**

*ITE "general office" trip generation includes services such as banks, restaurants, and other support services.

Transportation Planning Rule Compliance

The following section evaluates the compliance of the proposed land use action with TPR. OAR Section 660-12-0060 of the TPR sets forth the relative criteria for evaluating plan and land use regulation amendments. Table 5 summarizes these criteria and their applicability to the proposed rezone application.

Table 5 Summary of OAR 660-012-0060 TPR Relative Compliance Criteria

Criteria	Description	Applicable?
1	Describes how to determine if a proposed land use action results in a significant impact.	See response below
2	Describes measures for complying with Criteria #1 where a significant impact is determined.	No
3	Describes measures for approving an amendment that would significantly affect an existing transportation facility without assuring that the allowed land uses are consistent with the function, capacity and performance standards of the facility.	No
4	Determinations under Criteria #1, #2, and #3 are coordinated with affected transportation facility and service providers and other affected local governments.	See response below
5	Indicates that the presence of a transportation facility shall not be the basis for an exception to allow development on rural lands.	No
6	Indicates that local agencies should credit developments that provide a reduction in trips.	No
7	Outlines requirements for a local street plan, access management plan, or future street plan.	No
8	Defines a mixed-use, pedestrian-friendly center or neighborhood.	No
9	Describes how a local government may find that an amendment to a zoning map does not significantly affect an existing or planned transportation facility under specified circumstances.	No
10	Describes how a local government may amend a functional plan, a comprehensive plan or a land use regulation without applying performance standards related to motor vehicle traffic congestion if the amendment meets specific multimodal mixed-use area criteria.	No
11	Describes how a local government may approve an amendment with partial mitigation if the amendment complies with specific criteria, meets a balancing test, and meets coordination requirements.	No

As noted in Table 5, there are 11 criteria that apply to Plan and Land Use Regulation Amendments. Of these, Criteria #1 and #4 are applicable to the proposed land use action. These criteria are provided below in italics with our response shown in standard font.

(1) A plan or land use regulation amendment significantly affects a transportation facility if it would:

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

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

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

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

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

Response: The transportation impacts of the proposed zoning map amendments will have a *reduced* peak hour impact to the site access and local transportation system compared to development under the existing zoning. As such, the proposed zone change does not have a significant impact for TPR purposes. The functional classifications of roadways in the study area are also unaffected by the proposed zone change.

(4) Determinations under sections (1)-(3) of this rule shall be coordinated with affected transportation facility and service providers and other affected local governments.

Response: The project team is coordinating the assessment of the transportation impacts with the City of Eugene.

Section 5
Traffic Impact Analysis

TRAFFIC IMPACT ANALYSIS

The traffic impact analysis identifies how the study area's transportation system may operate assuming build out of the proposed EWEB redevelopment. The impact of traffic generated by the proposed redevelopment activities during typical weekday a.m. and p.m. peak hours was examined as follows:

- Planned developments and transportation improvements in the site vicinity were identified and reviewed;
- Year 2021 background traffic conditions (assumed build-out year of the proposed redevelopment without site-generated traffic) were analyzed at each of the study intersections;
- Future peak hour site-generated trips were estimated for build-out of the site;
- A trip distribution pattern was developed and used to assign site-generated trips to the study intersections;
- Year 2021 total traffic conditions (assumed build-out year of the proposed redevelopment with site-generated traffic) were analyzed at each of the study intersections;
- Year 2031 background traffic conditions (ten years after build-out of the proposed redevelopment without site-generated traffic) were analyzed at each of the study intersections;
- Year 2031 total traffic conditions (ten years after build-out of the proposed redevelopment with site-generated traffic) were analyzed at each of the study intersections; and,
- On-site circulation and site-access operations were evaluated.

Year 2021 Background Traffic Conditions

The year 2021 background traffic analysis identifies how the study area's transportation system may operate without the proposed EWEB redevelopment. This analysis accounts for traffic attributed to planned developments within the study area and includes general growth in the region, but does not include traffic from the proposed site redevelopment.

PLANNED DEVELOPMENTS AND TRANSPORTATION IMPROVEMENTS

Conversations with City of Eugene staff identified no funded transportation capacity improvements in the site vicinity. The only currently proposed development activity identified in the site vicinity is a

proposal to convert a portion of a warehouse in the SE corner of 8th and Ferry to a fitness center (Crossfit Training). This facility is anticipated to serve from 2 to 15 students with one instructor between the hours of 5:00 a.m. to 9:00 p.m. daily. The fitness center will primarily serve Federal Courthouse employees and other nearby users who already travel to the site for work. As a result, this development is anticipated to have negligible traffic impacts; most trips generated by this development are expected to be walking trips and are not expected to add to existing traffic volumes on the site.

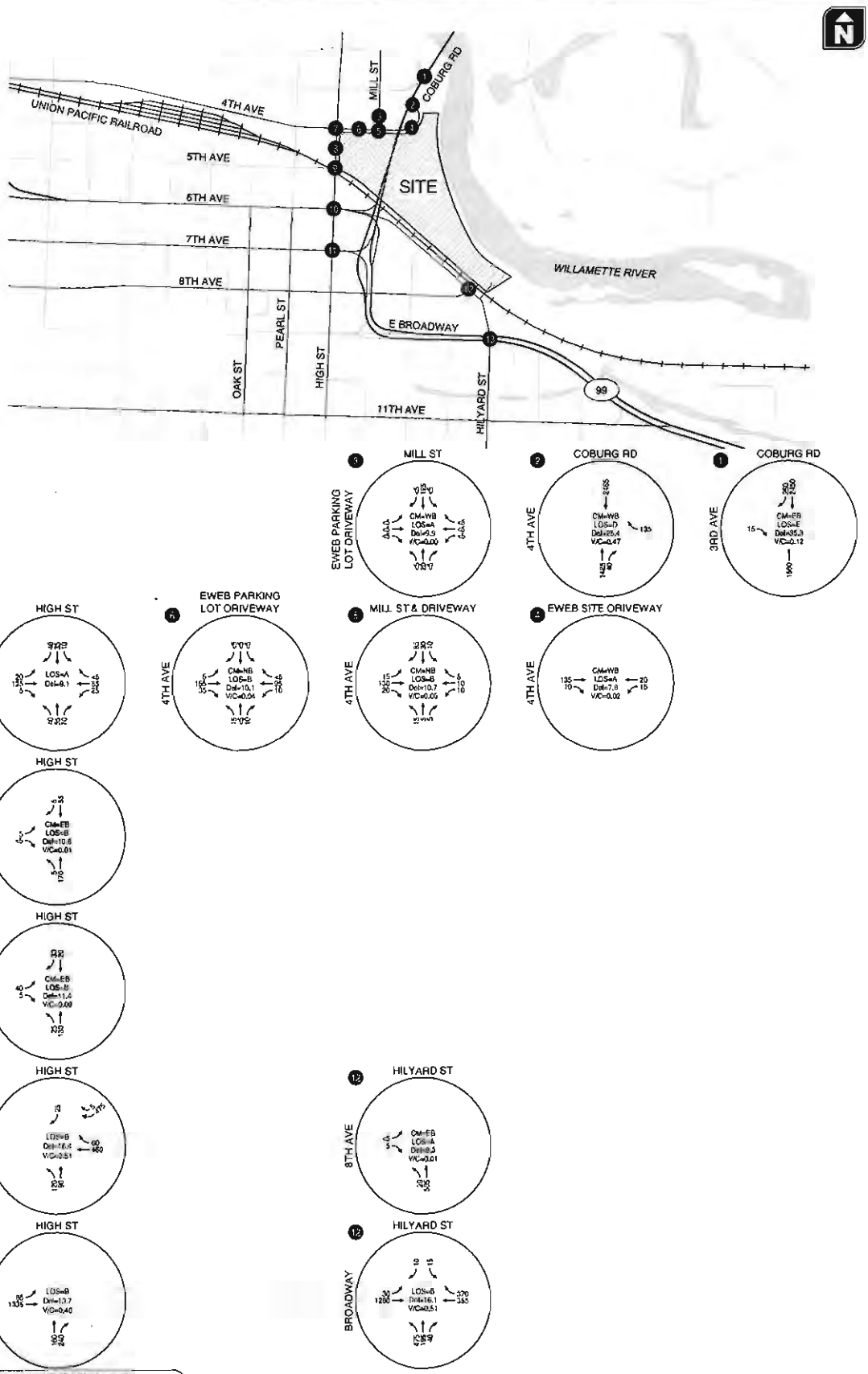
TRAFFIC VOLUMES

While no development activities were noted that will add significantly to existing traffic volumes in the immediate site vicinity, a one percent annual growth rate was assumed at the study intersections to account for local and regional traffic growth.[5] Accordingly, the year 2011 existing traffic volumes were increased by a factor of 10.4 percent to forecast year 2021 background traffic volumes. The 2021 a.m. and p.m. peak hour background traffic volumes are summarized in Figures 5 and 6.

LEVEL-OF-SERVICE ANALYSIS

The 2021 weekday a.m. and p.m. peak-hour turning-movement volumes shown in Figures 5 and 6 were used to prepare an operational analysis at each study intersection. Similar to existing conditions, all of the study intersections are forecast to operate acceptably during the a.m. and p.m. peak hours, except 4th Avenue/Coburg Road. During the p.m. peak hour, westbound right-turn movements at this intersection continue to operate at level of service "F" and over capacity (v/c > 1.0). As discussed previously, the volumes at the 4th Avenue/Coburg Road intersection meet traffic signal warrants under 2011 conditions and would continue to warrant signalization in the future. *Appendix "G" contains the year 2021 background traffic operations worksheets.*

[5] The average annual growth rate derived from the 2031 model volumes provided by Lane Council of Governments (LCOG) was 1.04 percent. Growth rates at individual intersections ranged from 0.4% to 2.4%.



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2021 BACKGROUNO WEEKDAY AM PEAK HOUR OPERATIONS
EUGENE, OREGON

FIGURE 5

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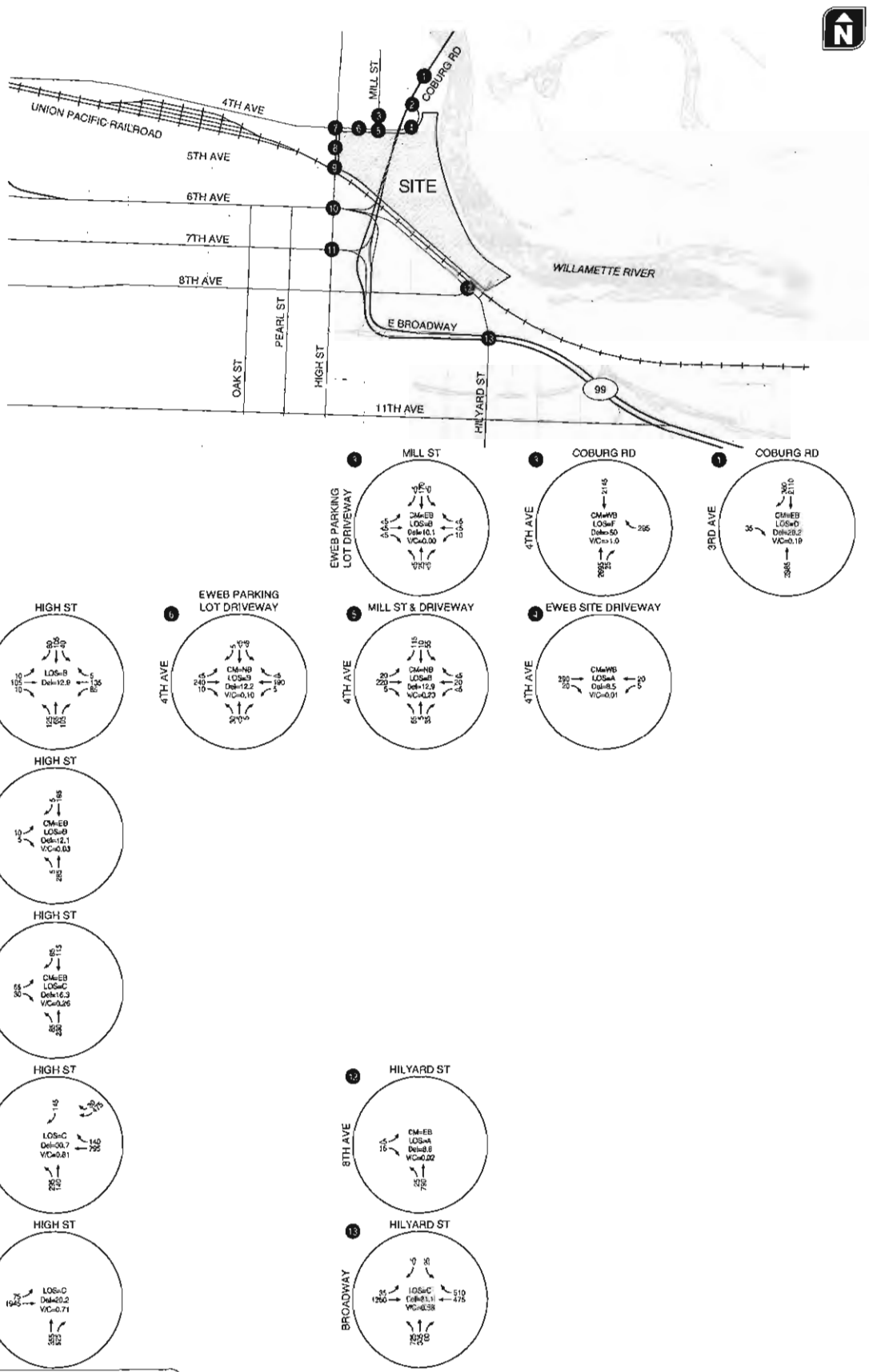

2021 BACKGROUND WEEKDAY PM PEAK HOUR OPERATIONS
EUGENE, OREGON

FIGURE 6

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Proposed Development Plan

Redevelopment of the EWEB site could begin as early as 2012. Approximately 15 acres of the site, primarily an impervious utility operations yard today, will be developed in multiple phases. The projected timeframe for complete build-out is between 10 and 15 years. At this time, the site development phases are not yet defined.

Four potential redevelopment scenarios (summarized in the Transportation Planning Rule section of this report) were developed by Rowell Brokaw Architects, PC and Cameron McCarthy staff based on the original EWEB master plan work, market forecasts, and other in-process master planning efforts.[6] For the purpose of the future operational analyses presented in this report, the "Civic Center" scenario was used. The "Civic Center" scenario resulted in the highest trip generation of the four redevelopment scenarios evaluated. This scenario includes a mixed-use redevelopment of the EWEB site, including 53 new townhome and apartment residential units, 315,000 square feet of new office building space, 22,000 square feet of new retail space, and 14,000 square feet of restaurant space.

TRANSPORTATION IMPROVEMENTS

Figure 7 shows the transportation network proposed to serve the redevelopment of the property. Vehicle access to the site will continue to be provided via 4th Avenue. Mill Street will be extended south of 4th Avenue through the site to a point north of the railroad tracks. Similarly, the existing EWEB Administrative Building driveway will be reconstructed as a local street that travels southeast through the site to a proposed southern site access, at a relocated signalized 8th Avenue railroad crossing.

In addition, a new 5th Avenue extension is proposed to provide east-west connections through the northern portion of the site. The proposed 5th Avenue extension would provide access to the site from High Street at a new intersection located approximately 150 feet north of the railroad tracks and the current eastern terminus of 5th Avenue. Figure 8 shows the anticipated lane configurations and traffic controls at study intersections after full build-out of the site redevelopment.

[6] All of the scenarios assume that new development will be in addition to the existing EWEB Administrative Building and the Midgley Building.

SITE DEVELOPMENT PLAN
EUGENE, OREGON

FIGURE 7

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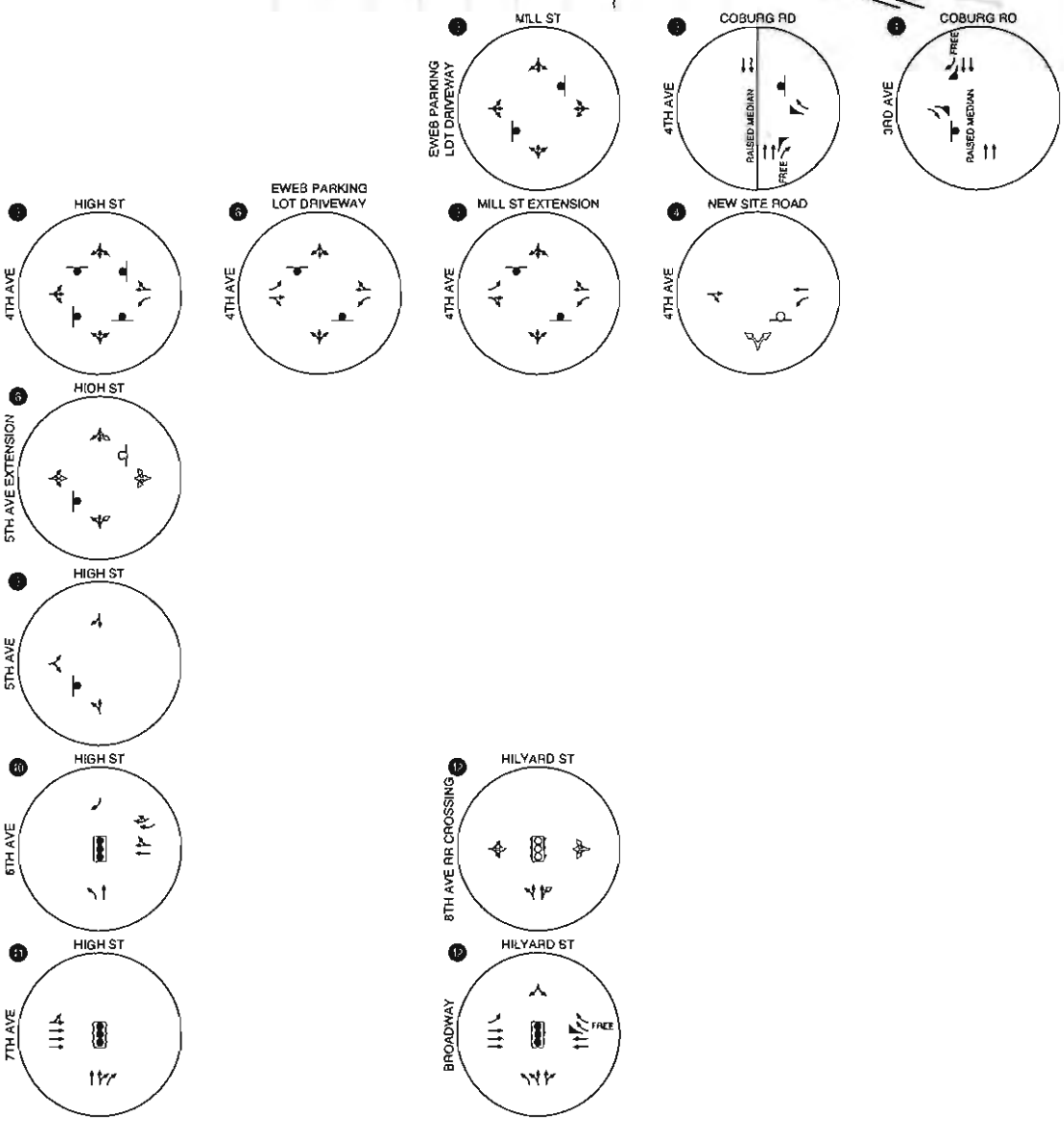

LEGEND

- NEW LANE CONFIGURATION
- NEW TRAFFIC SIGNAL

ANTICIPATED FUTURE LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES
EUGENE, OREGON

FIGURE 8

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Railroad Crossing Relocation

The analysis presented in this report assumes reconstruction of the 8th Avenue/Hilyard Street intersection in conjunction with site development as envisioned by the City of Eugene. EWEB will work with the City to procure funding for the improvement and subsequent development phases will determine the appropriate year of completion. It is expected that a variety of public and private funding sources may be used to fund the improvement given its benefits to both the EWEB site and the greater subarea.

The EWEB Master Plan accommodates relocating the existing at-grade railroad crossing situated between Broadway and 8th Avenue approximately 250 feet northwest to create a fourth leg to the reconfigured 8th Avenue/Hilyard Street intersection. The relocation will allow for several enhancements including:

- The grade crossing relocation will align with the existing 8th Avenue, allowing for signalized movements to and from the existing 8th Avenue intersection;
- The new traffic signal will accommodate full pedestrian movements (in addition to improvements at the intersection, the new crossing will require upgrading the current railroad track detection to provide adequate pedestrian clearance time prior to train arrivals which in turn is expected to trigger detection changes to the north at High Street); and
- Provision of a northbound right-turn lane that will offer storage for right-turn vehicles queued on Hilyard Street during train passage[7].

A conceptual illustration of the reconfigured intersection is shown in Appendix H.

[7] During train passage events when the railroad crossing is blocked, motorists will have the option of stopping at the crossing and waiting for the train to clear or continuing north on Hilyard Street and accessing the EWEB site via other routes, including Coburg Road. The variability in train arrival times, train length, the timing of a motorist's arrival at the crossing, and other factors make it difficult to predict how many motorists will queue and wait to turn right while a train passes through. The conceptual right-turn lane design shown on Hilyard Street can readily accommodate seven passenger cars and can be constructed within the existing right-of-way, maximizing the storage provided in the context of the intersection location and right-if-way available to the project.

TRIP GENERATION

Trip generation estimates (including pass-by and internal trips) were prepared for the existing site uses and the four potential site development scenarios using the standard reference manual, *Trip Generation, 8th Edition*, published by the Institute of Transportation Engineers (ITE). Table 6 shows the estimated trip generation for existing uses and the highest trip generation development scenario under the proposed zoning (Civic Center scenario). The final line of the table shows the potential change in net new trips between the existing and proposed development.

Table 6 Master Plan Trip Generation Estimates

Land Use	ITE Code	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
Existing Uses									
Existing Office (EWEB Headquarters & Midgley's Building)	714	118,000 square feet	940	175	165	10	165	15	150
Net New Trips			***940***	***175***	***165***	***10***	***165***	***15***	***150***
Proposed Development (Worst Case Scenario - Civic Center Scenario)									
Existing Office	714	118,000 square feet	940	175	165	10	165	15	150
Internal			*(20)*	*0*	*0*	*0*	*0*	*0*	*0*
Townhome/Condo	230	49 units	290	20	5	15	25	15	10
Internal			*(110)*	*(5)*	*0*	*(5)*	*(10)*	*(5)*	*(5)*
Apartment	220	24 units	160	10	0	10	15	10	5
Internal			*(60)*	*(5)*	*0*	*(5)*	*(5)*	*(5)*	*0*
Office*	710	315,000 square feet	3,470	490	430	60	470	80	390
Internal			*(70)*	*(5)*	*0*	*(5)*	*(5)*	*0*	*(5)*
Retail	820	22,000 square feet	950	25	15	10	80	40	40
Internal			*(90)*	*0*	*0*	*0*	*(5)*	*0*	*(5)*
Pass-by trips (34%)			*(290)*	*(10)*	*(5)*	*(5)*	*(25)*	*(15)*	*(10)*
Restaurant	932	14,000 square feet	1,780	160	85	75	155	90	65
Internal			*(160)*	*(15)*	*(10)*	*(5)*	*(10)*	*(5)*	*(5)*
Pass-by trips (43%)			*(700)*	*(60)*	*(30)*	*(30)*	*(60)*	*(30)*	*(30)*
Net New Trips			*6,090*	***780***	***655***	***125***	***790***	***190***	***600***
Net New Trip Difference (Proposed Uses - Existing Uses)			**5,150**	**605**	**490**	**115**	**625**	**175**	**450**

*ITE "general office" trip generation includes services such as banks, restaurants, and other support services.

The trips shown in Table 6 reflect an overall increase in the net new daily and weekday a.m. and p.m. peak hour site trip generation compared to existing conditions. City of Eugene Code Section 9.8670 requires a traffic impact study for any development that generates an increase of 100 trips during any peak hour.

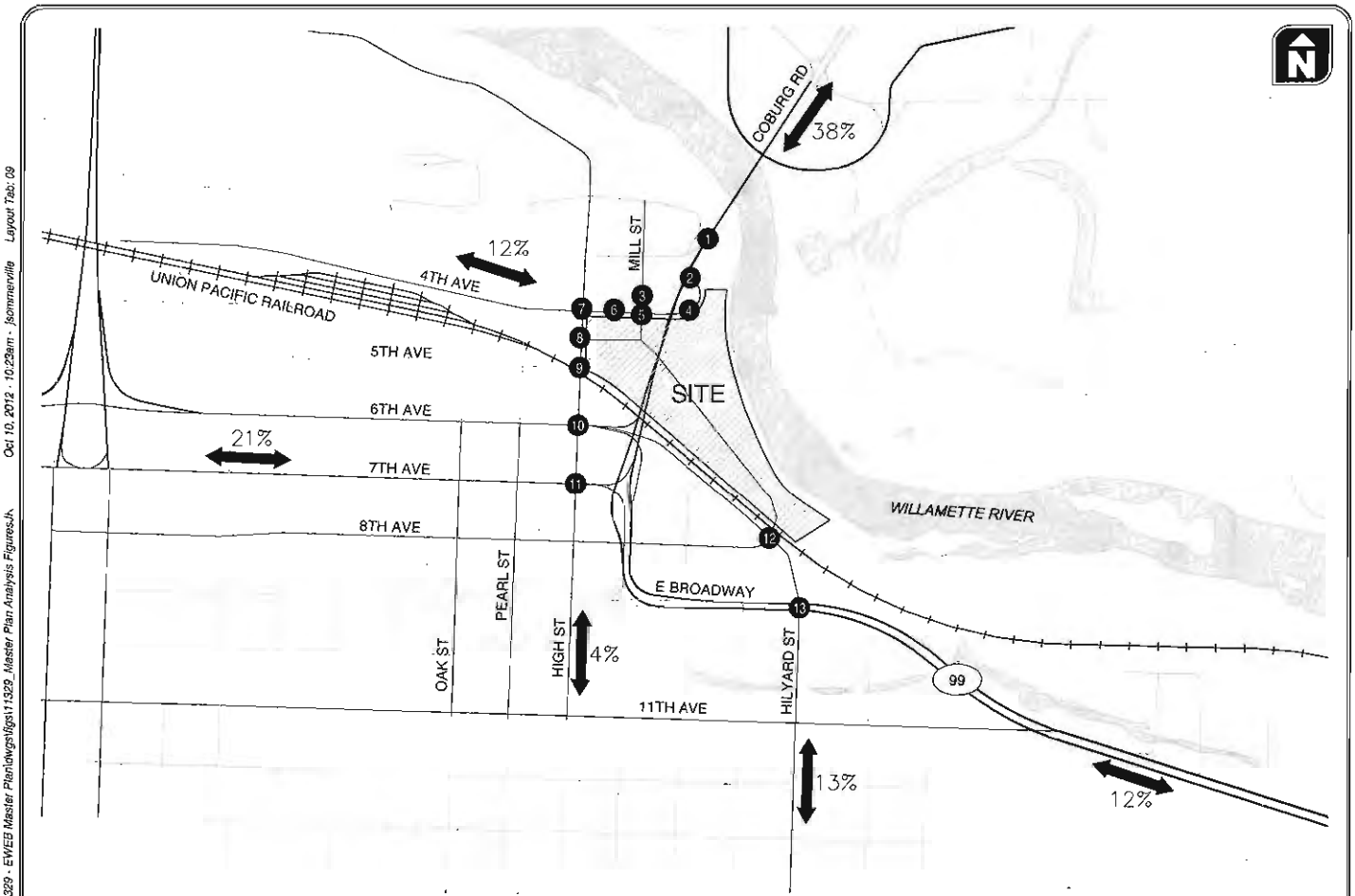
For the purpose of this analysis, the development scenario with the highest total daily trip generation was evaluated. By comparison, if a different development scenario is pursued, the site trip generation would be reduced compared to the analysis presented in this report. In addition, this trip generation estimate does not include a reduction for trips that will likely be made by non-auto modes (e.g. transit, walking, biking) due to the mixed-use nature of the site or other trip reductions that could result from travel demand management (TDM) strategies.

SITE TRIP DISTRIBUTION/TRIP ASSIGNMENT

The site-generated trips were distributed onto the study area roadway system based on travel demand model data provided for the site by the Lane Council of Governments (LCOG) and existing travel patterns.[8] Figure 9 illustrates the estimated trip distribution pattern for the proposed development.

The estimated site-generated trips were assigned to the network by distributing the trips shown in Table 6 according to the trip distribution pattern shown in Figure 9. Figures 10 and 11 illustrate the site-generated trips that are expected to use the roadway system during the weekday a.m. and p.m. peak hours. Note that the volumes shown in Figures 10 and 11 represent the anticipated increase in site trips over the existing site trip generation (net new trip difference in Table 6) plus those additional trips that reflect pass-by trips from E Broadway Street. *Appendix "I" shows the weekday a.m. and p.m. peak hour pass-by trip assignments.*

[8] LCOG provided select zone assignment data for transportation analysis zones (TAZ) number 388. The TZA data encompasses the EWEB master Plan site and included mixed-use development assumptions for the EWEB property.



ESTIMATED SITE TRIP DISTRIBUTION PATTERN
EUGENE, OREGON

FIGURE 9

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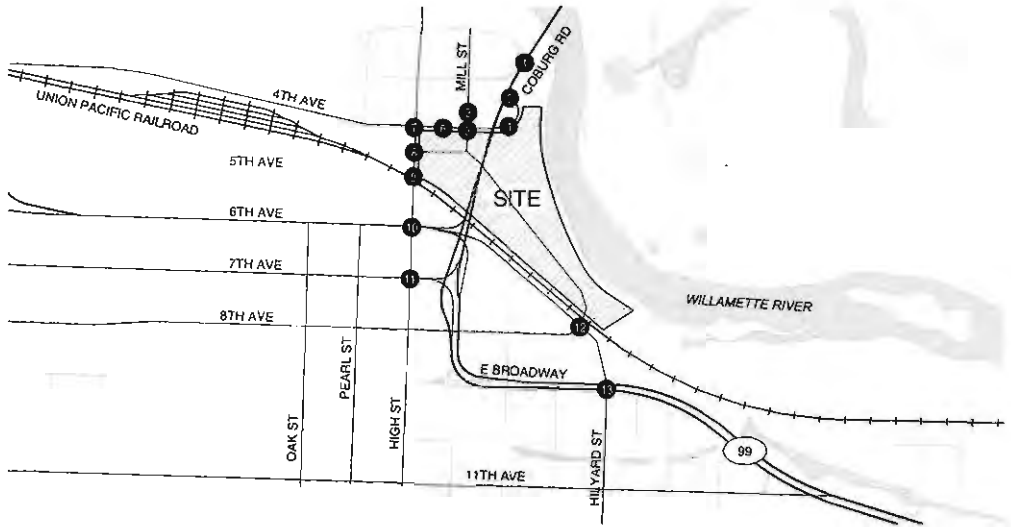
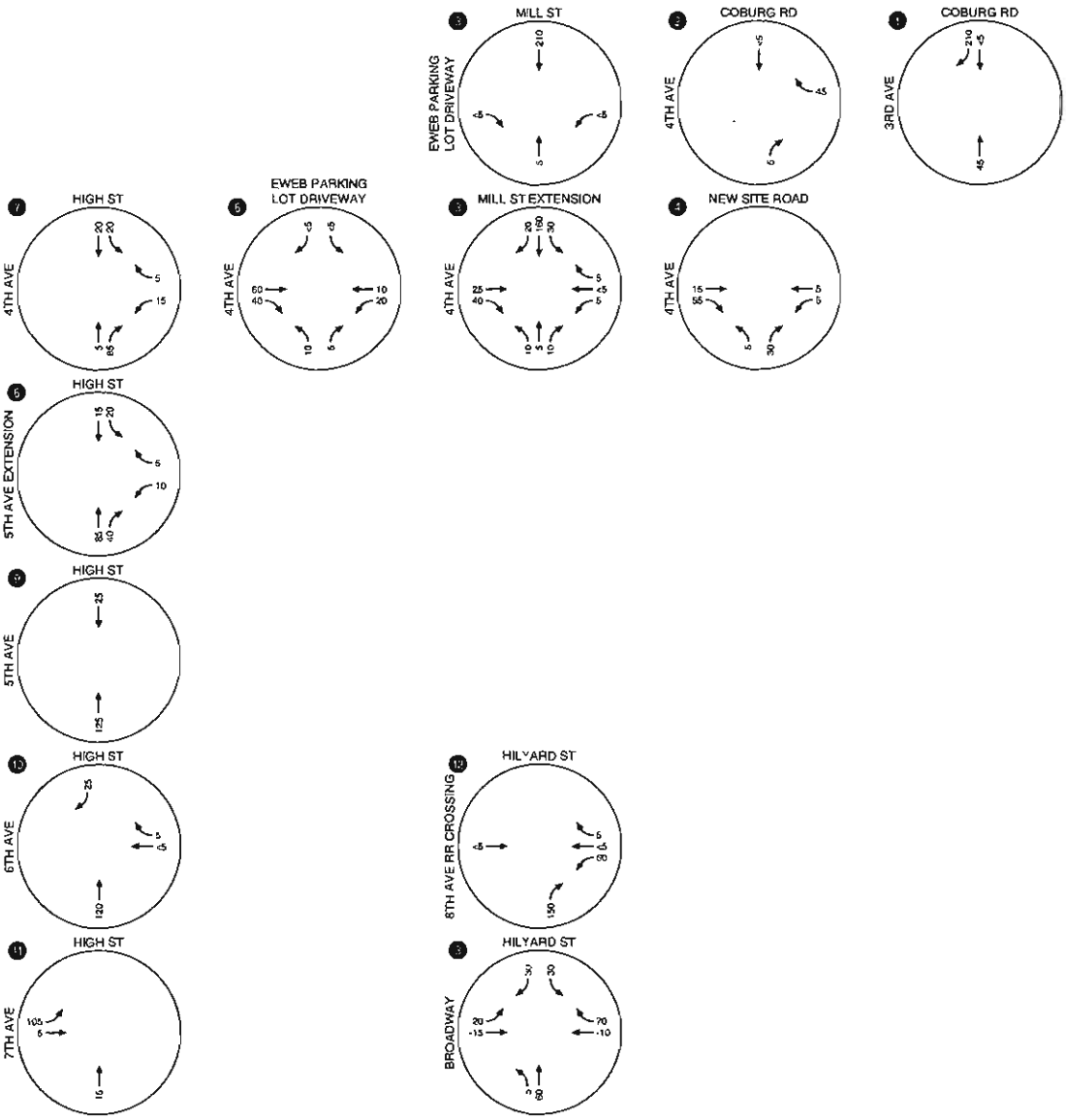
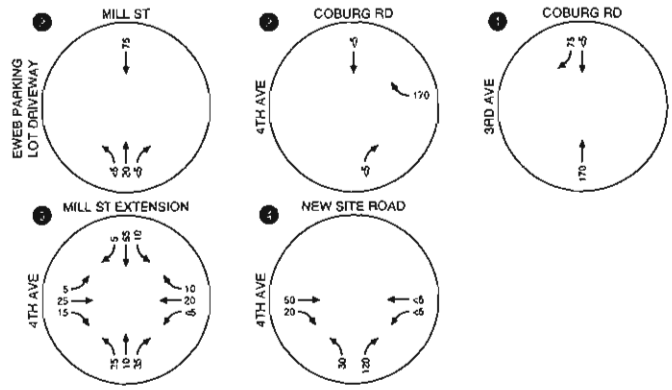


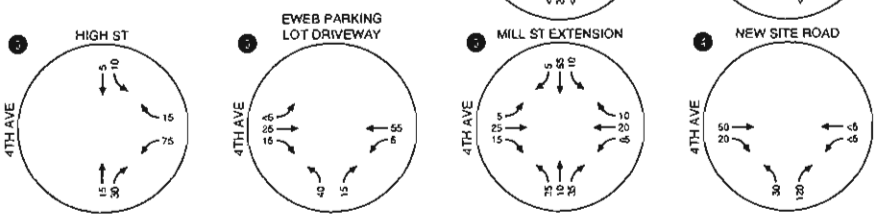


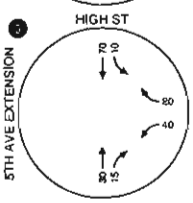
NOTE: NEGATIVE VOLUMES REFLECT PASS-BY TRIPS

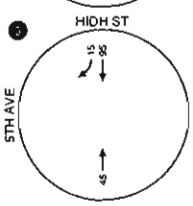
WEEKDAY AM PEAK HOUR SITE TRIP ASSIGNMENT
EUGENE, OREGON

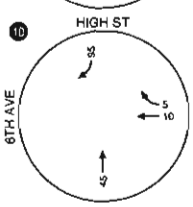
Figure 10

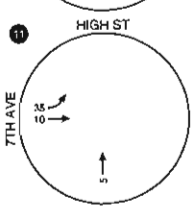


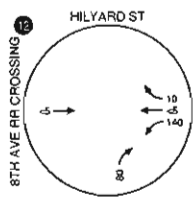


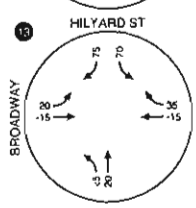












NOTE: NEGATIVE VOLUMES REFLECT PASS-BY TRIPS

WEEKDAY PM PEAK HOUR SITE TRIP ASSIGNMENT
EUGENE, OREGON

FIGURE 11

Year 2021 Total Traffic Conditions

The total traffic conditions analysis forecasts how the study area's transportation system will operate with the traffic generated by the proposed EWEB redevelopment. The year 2021 background traffic volumes for the weekday a.m. and p.m. peak hours (shown in Figures 5 and 6) were added to the site-generated traffic (shown in Figures 10 and 11) to arrive at the total traffic volumes illustrated in Figures 12 and 13.

INTERSECTION LEVEL OF SERVICE

The weekday a.m. and p.m. peak hour turning-movement volumes shown in Figures 12 and 13 were used to conduct an operational analysis at each study intersection to determine the year 2021 total traffic levels of service. The results of the total traffic analysis shown in Figures 12 and 13 indicate that all of the study intersections are forecast to operate at acceptable levels of service during the weekday a.m. and p.m. peak hours, except 4th Avenue/Coburg Road. *Appendix "J" contains the year 2021 total traffic level-of-service worksheets.*

Coburg Road/4th Avenue Intersection

The westbound right turn movements at the Coburg Road/4th Avenue intersection are projected to operate at level of service "D" during the weekday a.m. peak hour. During the p.m. peak hour the intersection is projected to continue to operate over capacity and at level of service "F" without mitigation. The westbound right turn movement has a high volume because it is the only direct access from the site to northbound Coburg Road, I-105, and destinations north of the Willamette River.

As indicated in the existing conditions discussion, signalizing northbound and westbound movements at this intersection is warranted and would restore operations to an acceptable level of service in conjunction with providing dual right-turn movements westbound. This mitigation option would:

- Retain right-in/right-out turn movement restrictions;
- Provide dual right-turn lanes on 4th Avenue between the EWEB Headquarters Building and Coburg Road (approximately 125 feet of storage)[9]; and
- Signalize westbound right turn movements on 4th Avenue and northbound through movements on Coburg Road (southbound movements would remain unsignalized and

[9] Additional queue storage is not feasible without impacting the EWEB Headquarters Building or existing bicycle and pedestrian facilities at the intersection.

pedestrian phases would not be provided recognizing grade-separated pedestrian/bicycle crossings are provided via 4th Avenue and the Southbank Ruth Bascom path under the Ferry Street Bridge).

Table 7 summarizes the operations under the mitigation alternative.

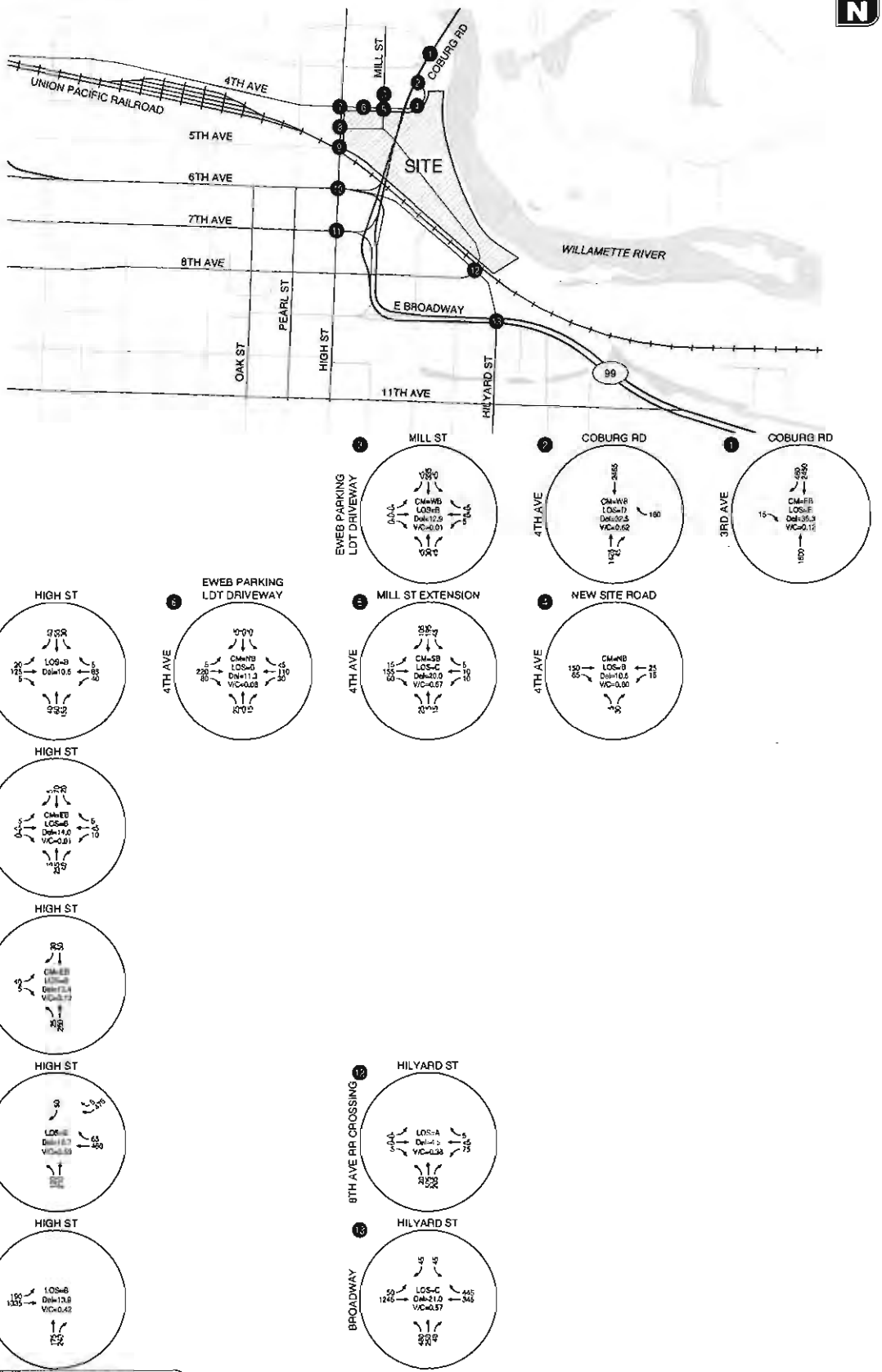
Table 7 4th Avenue/Coburg Road Intersection Mitigation (2021 Total Traffic Conditions)

Mitigation	Weekday AM Peak Hour			Weekday PM Peak Hour		
	Delay	LOS	V/C	Delay	LOS	V/C
Traffic Signal [1,2]	6.7	A	0.59	71.9	E	1.10

[1] Signal warrants 1, 2, and 3 are met at this intersection based on the Manual on Uniform Traffic Control Devices (MUTCD) (Reference 4).

[2] Free right-turn phasing was assumed on the northbound approach.

As shown in Table 7, a traffic signal with dual westbound right-turn lanes will operate at acceptable levels of service for the Central Area Transportation Study area (LOS E) during the weekday a.m. and p.m. peak hours; however, westbound right-turn movements will operate at capacity (v/c = 1.0) and northbound through movements will operate over capacity (v/c > 1.0) during the peak 15 minutes of the peak hour. Coburg Road has been identified by city staff as a "congested corridor" and the new traffic signal will essentially act as a meter, creating gaps for westbound traffic to turn into the Coburg Road northbound traffic stream that would otherwise have insufficient gaps for a turn maneuver. *Appendix "K" contains the year 2021 mitigated total traffic level-of-service worksheets.*



. CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2021 TOTAL TRAFFIC WEEKDAY AM PEAK HOUR OPERATIONS
EUGENE, OREGON

FIGURE 12

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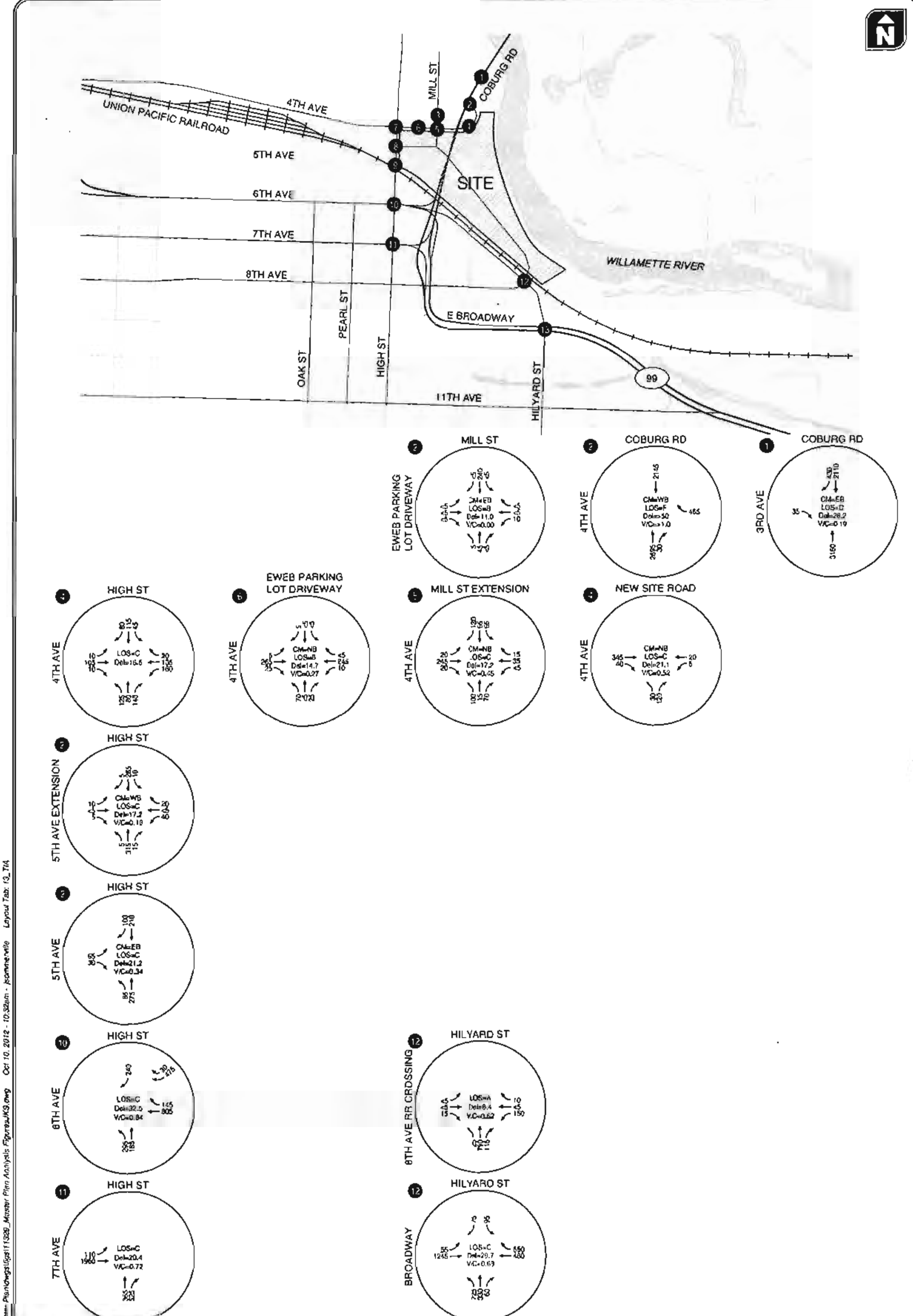

CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2021 TOTAL TRAFFIC WEEKDAY PM PEAK HOUR OPERATIONS
EUGENE, OREGON

FIGURE 13

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Year 2031 Background Traffic Conditions

The year 2031 background traffic analysis identifies how the study area's transportation system will operate without the proposed EWEB redevelopment. This analysis accounts for traffic attributed to planned developments within the study area and includes general growth in the region, but does not include traffic from the proposed site redevelopment.

PLANNED DEVELOPMENTS AND TRANSPORTATION IMPROVEMENTS

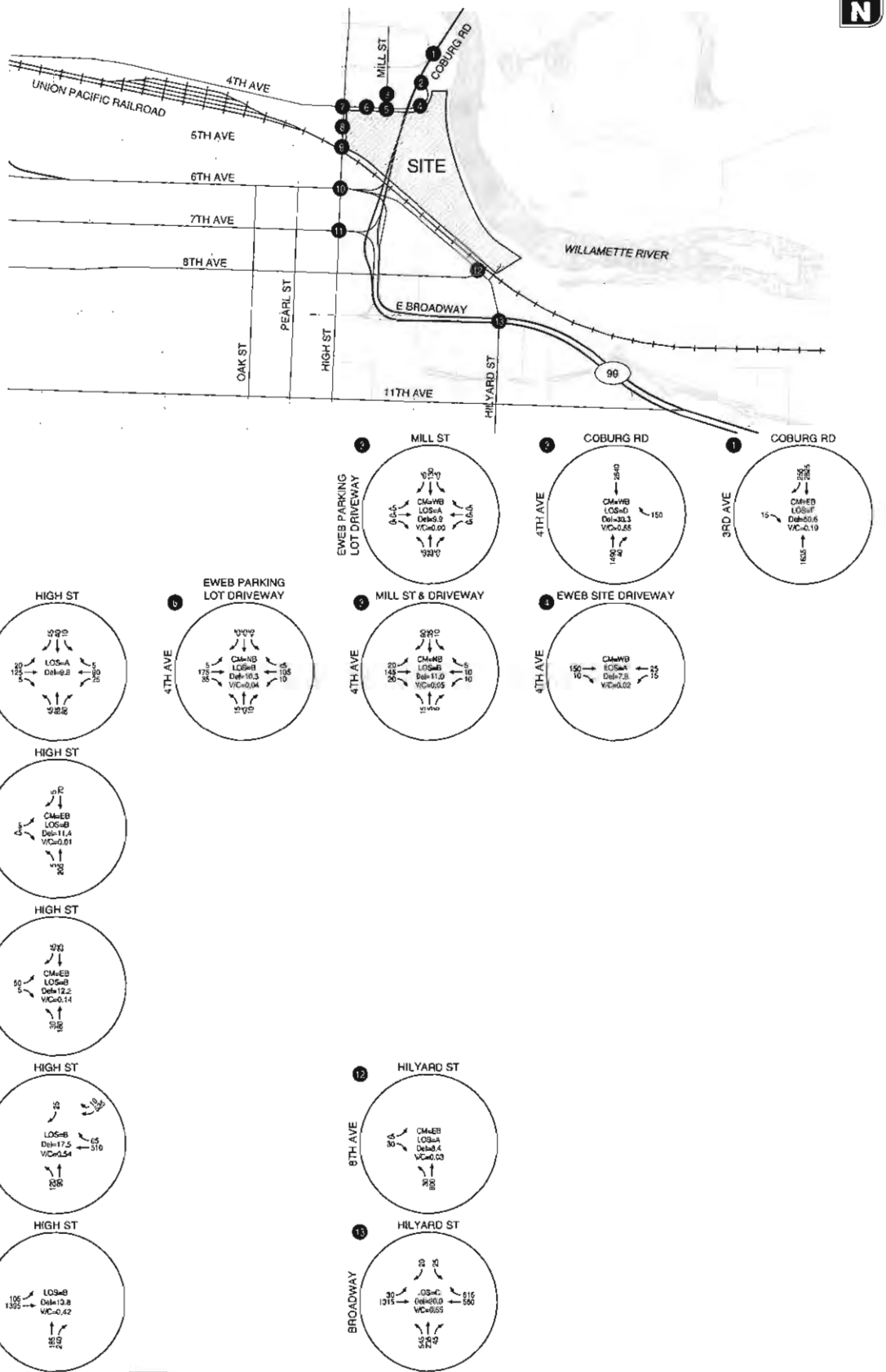
Conversations with City of Eugene staff identified no additional long-term transportation capacity improvements or development activity in the site vicinity.

TRAFFIC VOLUMES

Year 2031 traffic volume projections were derived from LCOG's year 2031 travel demand model for the study area. Unlike the year 2021 analysis, which was based on assumed annual growth rates, the LCOG 2031 model is predicated on specific growth and development assumptions city-wide. The LCOG traffic model assumes some redevelopment of the EWEB site in 2031.[10] Background traffic volumes for the year 2031 analysis were developed in part by subtracting trips originating from and terminating at the EWEB site zone from the 2031 model link volumes.[11] The 2031 a.m. and p.m. peak hour background traffic volumes are summarized in Figures 14 and 15.

[10] The 2031 model also assumes a significant shift in northwest bound traffic from Broadway Street and High Street to Hilyard Street and 6th Avenue compared to the 2004 model (which does not include Hilyard Street). This shift is not supported by current traffic counts. As a result, a one percent annual growth rate was used to estimate traffic volumes on 6th Avenue and at the 8th Avenue/Hilyard Street intersection. A minimum one percent annual growth rate was also applied to movements on High Street to ensure that background 2031 volumes were not lower than estimated background 2021 volumes. (This was the average annual growth rate derived from the 2031 model volumes provided by LCOG.)

[11] Model link volumes were adjusted and converted to turning movement counts based on a comparison to LCOG's base year 2004 model volumes, LCOG year 2031 projections, and 2011 turning movement counts using the methodology documented in NCHRP Report 255.



2031 BACKGROUND WEEKDAY AM PEAK HOUR OPERATIONS
EUGENE, OREGON

FIGURE 14

KITTELSON & ASSOCIATES, INC.
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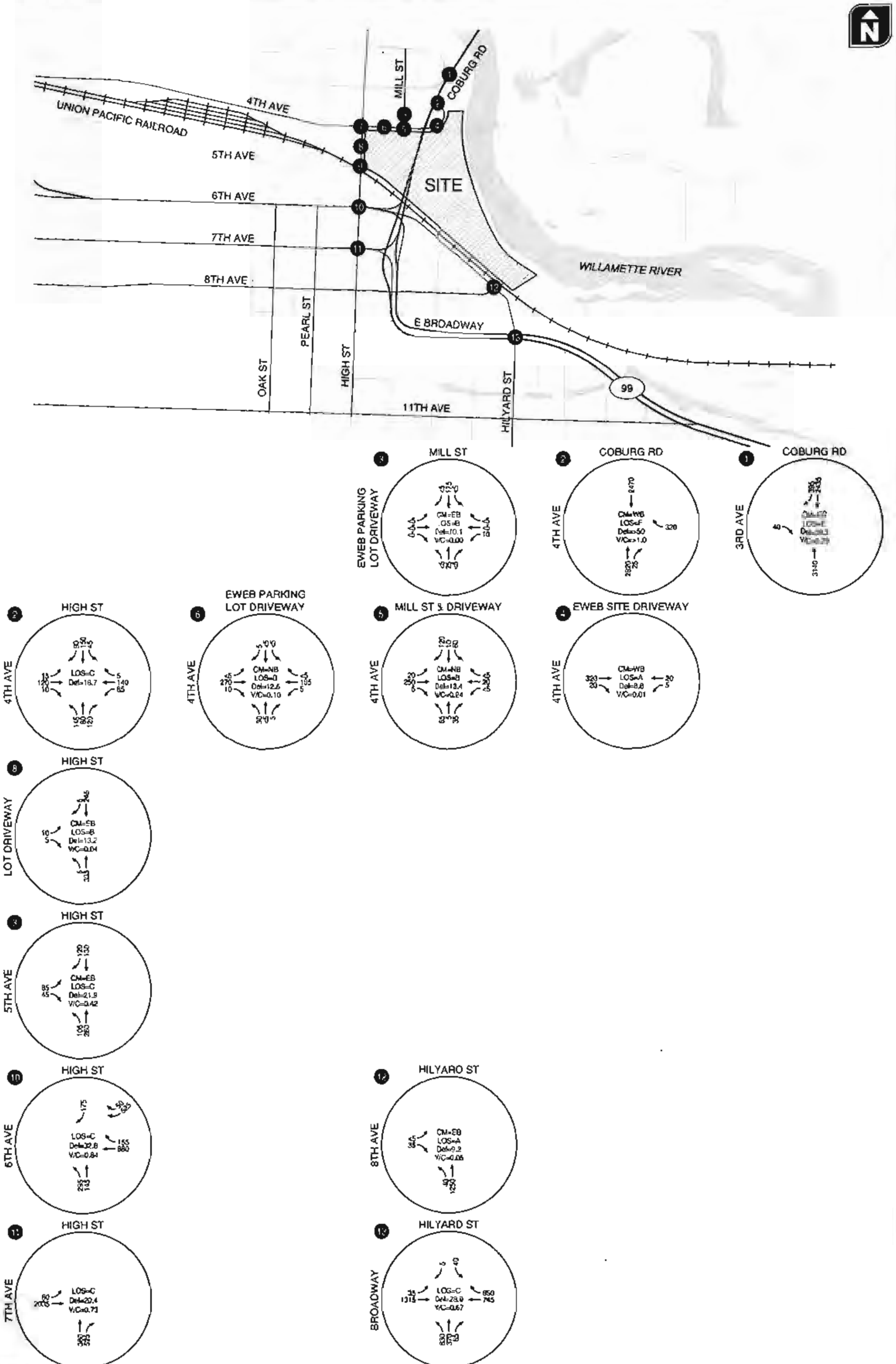

CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2031 BACKGROUND WEEKDAY PM PEAK HOUR OPERATIONS
EUGENE, OREGON

FIGURE 15

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LEVEL-OF-SERVICE ANALYSIS

The 2031 weekday a.m. and p.m. peak-hour turning-movement volumes shown in Figures 14 and 15 were used to prepare an operational analysis at each study intersection. The 2031 intersection analysis found that all of the study intersections operate acceptably during the a.m. and p.m. peak hours, except 4th Avenue/Coburg Road and 3rd Avenue/Coburg Road. During the p.m. peak hour, westbound right-turn movements at the 4th Avenue/Coburg Road intersection continue to operate at level of service "F" and over capacity (v/c > 1.0) without mitigation.

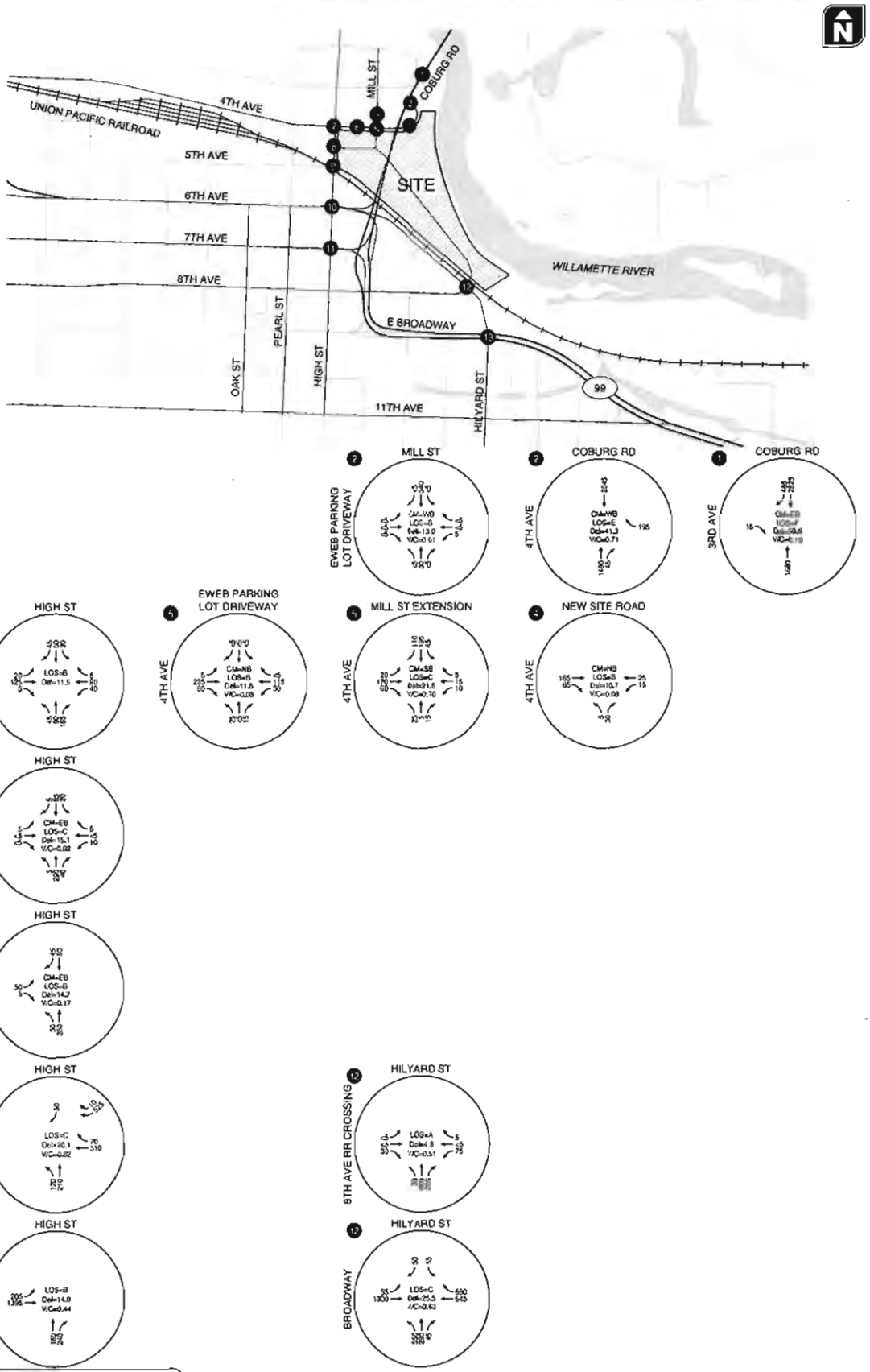
During the a.m. peak hour, eastbound right-turn movements at the 3rd Avenue/Coburg Road intersection are forecast to operate at level of service "F". The eastbound right-turn movement is forecast to operate well under capacity. *Appendix "L" contains the year 2031 background traffic operations worksheets.*

Year 2031 Total Traffic Conditions

The total traffic conditions analysis forecasts how the study area's transportation system will operate with traffic generated by the EWEB Master Plan site redevelopment. The year 2031 background traffic volumes for the weekday a.m. and p.m. peak hours (shown in Figures 14 and 15) were added to the site-generated traffic (shown in Figures 10 and 11) to arrive at the total traffic volumes illustrated in Figures 16 and 17.

INTERSECTION LEVEL OF SERVICE

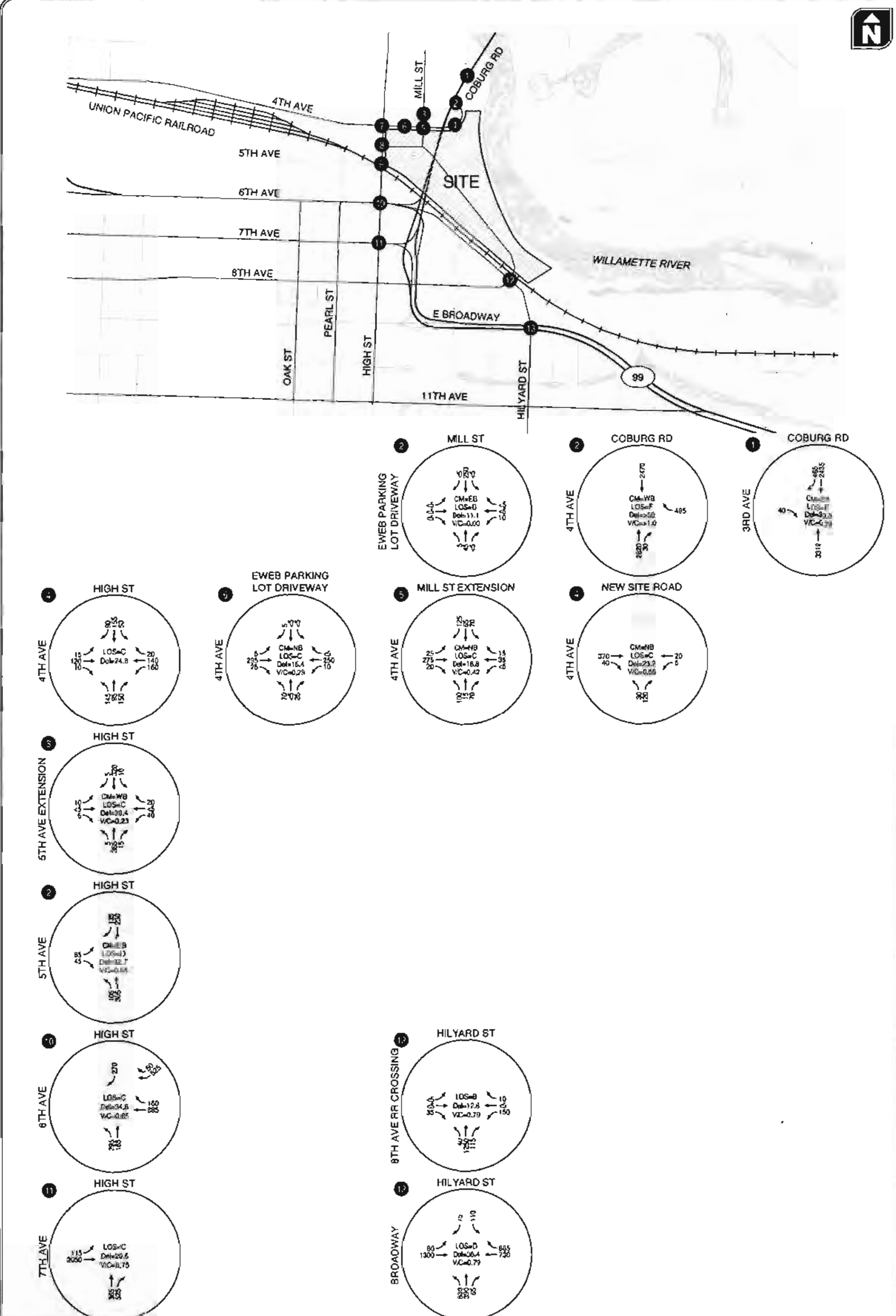
The weekday a.m. and p.m. peak hour turning-movement volumes shown in Figures 16 and 17 were used to conduct an operational analysis at each study intersection to determine the year 2031 total traffic levels of service. The results of the total traffic analysis shown in Figures 16 and 17 indicate that all of the study intersections are forecast to operate at acceptable levels of service during the weekday a.m. and p.m. peak hours, except 4th Avenue/Coburg Road and 3rd Avenue/Coburg Road. *Appendix "M" contains the year 2031 total traffic level-of-service worksheets.*



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2031 TOTAL TRAFFIC WEEKDAY AM PEAK HOUR OPERATIONS
EUGENE, OREGON

FIGURE 16



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2031 TOTAL TRAFFIC WEEKDAY PM PEAK HOUR OPERATIONS
EUGENE, OREGON

FIGURE 17

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Coburg Road/3rd Avenue Intersection

The eastbound right turn movements at the Coburg Road/3rd Avenue intersection are projected to continue to operate at level of service "F" during the weekday a.m. peak hour after site development. The movement will be well under capacity and does not warrant signalization. Further, the EWEB site redevelopment is not anticipated to add any trips to the failing eastbound right-turn movement (Few, if any, EWEB trips are likely to travel north from the site to reach the failing eastbound right-turn movement to travel south when they have other alternative routes to travel south. Even in the event that EWEB traffic does utilize the right turn movement, there is capacity to accommodate additional right-turn traffic).

Coburg Road/4th Avenue Intersection

The westbound right turn movements at the Coburg Road/4th Avenue intersection are projected to operate at level of service "E" during the weekday a.m. peak hour. During the p.m. peak hour the intersection is projected to continue to operate over capacity and at level of service "F" without mitigation. As discussed in the 2021 total traffic analysis, adding a second westbound right-turn lane in conjunction with signalizing the northbound and westbound movements at this intersection restore the intersection to an acceptable level of service. Table 8 summarizes the operations under the mitigation alternative. A traffic signal with dual westbound right-turn lanes will operate at acceptable levels of service for the Central Area Transportation Study area (LOS E) during the weekday a.m. and p.m. peak hours; however, westbound right-turn and northbound through movements will continue to operate over capacity (v/c > 1.0) during the peak 15 minutes. *Appendix "N" contains the year 2031 mitigated total traffic level-of-service worksheets.*

Table 8 4th Avenue/Coburg Road Intersection Mitigation (2031 Total Traffic Conditions)

Mitigation	Weekday AM Peak Hour			Weekday PM Peak Hour		
	Delay	LOS	V/C	Delay	LOS	V/C
Traffic Signal [1,2]	7.2	A	0.62	79.1	E	1.11

[1] Signal warrants 1, 2, and 3 are met at this intersection based on the Manual on Uniform Traffic Control Devices (MUTCD) (Reference 4).

[2] Free right-turn phasing was assumed on the northbound approach.

On-Site Circulation

Internal circulation was evaluated at a planning level to ensure that the master plan concept provides sufficient on-site circulation and connectivity for pedestrian movements and internal traffic. Key findings of this review include:

- New on-site roadways will facilitate local truck deliveries and vehicle movements.
    - The new roadways will include sidewalks and pedestrian facilities that will serve day-to-day use within the site while providing connectivity to the larger pedestrian sidewalk network surrounding the site and the Ruth Bascom Path to the west.
- The site includes bicycle and pedestrian accessways to the Ruth Bascom Path which in turn provides a pedestrian and bicycle friendly riverfront route through the site and connects to downtown and destinations north of the Willamette River. The path also allows pedestrians and bicyclists to access the site without interacting with traffic on Coburg Road.

On-site circulation is expected to be further refined as specific site plans are developed in the future.

Section 6
Conclusions and Recommendations

CONCLUSIONS AND RECOMMENDATIONS

Findings

The results of the TPR and traffic impact analysis indicate that the proposed EWEB master plan site redevelopment can be constructed while maintaining acceptable levels of service and safety on the surrounding transportation system as long as the appropriate mitigations are in place. The findings of this analysis and our recommendations are discussed below.

YEAR 2011 EXISTING CONDITIONS

- All of the study intersections operate acceptably during the weekday a.m. and p.m. peak hours, except 4th Avenue/Coburg Road. During the p.m. peak hour, westbound right-turn movement at this intersection currently operates at level of service "F" and over capacity (volume-to-capacity ratio (v/c) > 1.0).
- A review of historical crash data did not reveal any patterns or trends in the site vicinity that require mitigation associated with this project.

PROPOSED DEVELOPMENT PLAN

- Four redevelopment scenarios were prepared by Rowell Brokaw Architects, PC and Cameron McCarthy staff based on the original EWEB master plan work, market forecasts, and other in-process master planning efforts. All of the scenarios assume that any new development will be in addition to the existing EWEB Administrative Building and the Midgley Building.
- The redevelopment scenario with the highest trip generation is estimated to generate 6,090 daily net new trips; 780 net new trips (655 inbound, 125 outbound) are projected to occur during the weekday a.m. peak hour and 790 net new trips (190 inbound, 600 outbound) are projected to occur during the weekday p.m. peak hour.

TRANSPORTATION PLANNING RULE (TPR) ANALYSIS

- The EWEB site consists of multiple parcels, which are currently zoned as a combination of Public Lands (PL), Light-Medium Industrial (I-2), Heavy Industrial (I-3), and Special District (S-W Whiteaker Special Area Zone) with Transit-Oriented District (TOD) and Water Resources Conservation (WR) overlays. Under the proposed map amendment, the

properties would each change designation to a new Special Area Zone (SAZ) identified as Downtown Riverfront (S-DR), retaining the overlays.[12]

- The estimated peak hour trip generation of the site under the proposed S-DR zoning is lower than the trip generation of a reasonable "worst-case" density under the existing zoning. As a result, the proposed rezone would not have a significant effect on the transportation system.
- No future year intersection operational analysis is required for TPR purposes given the reduced peak hour trip generation associated with the rezone proposal.

TRAFFIC IMPACT ANALYSIS

- Future weekday morning and evening peak hour traffic conditions were analyzed for the horizon years 2021 and 2031 prior to site development (background traffic) and with site development (total traffic).
- The analysis assumed reconstruction of the 8th Avenue/Hilyard Street intersection in conjunction with site development as envisioned by the City of Eugene. EWEB will work with the City to procure funding for the improvement and subsequent development phases will determine the appropriate year of completion. It is expected that a variety of public and private funding sources may be used to fund the improvement given its benefits to both the EWEB site and the greater subarea.
- Under each condition evaluated (2021 and 2031 background and total traffic conditions) all but two of the study intersections are forecast to operate at acceptable levels of service during the weekday a.m. and p.m. peak hours.
    - Westbound right-turn movements at the 4th Avenue/Coburg Road intersection continue to operate at level of service "F" and over capacity (v/c > 1.0) during the p.m. peak hour without mitigation.
    - The eastbound right turn movements at the Coburg Road/3rd Avenue intersection are projected to operate at level of service "F" during the weekday a.m. peak hour

[12] The proposed S-DR Downtown Riverfront SAZ is based on a streamlined and modified version of the C-2 Community Commercial zone designation with additional use restrictions, building height limitations, form based standards, and incentives for mixed use projects. Further, the site properties currently zoned S-W will retain their S-W zoning within the SAZ.

before and after site development under year 2031 conditions. The movement will be well under capacity and does not warrant signalization. Further, the EWEB site redevelopment is not anticipated to add any trips to the failing eastbound right-turn movement. The intersection operates acceptably under forecast 2021 conditions.

- Operations at the 4th Avenue/Coburg Road intersection were found to be restored to an acceptable level of service though provision of dual westbound right-turn lanes and signalization of the intersection's northbound and westbound movements.
    - Even with signalization and the addition of a second westbound right turn lane, westbound and northbound movements will be over-capacity during the peak 15 minutes. As such, the new signal will be creating opportunities for each movement to proceed under congested conditions. This finding is consistent with the City of Eugene's identification of Coburg Road as a future "congested corridor."

Year 2031 Total Traffic Conditions

- With signalization and the addition of a second westbound right turn lane, the 4th Avenue/Coburg Road intersection is forecast to operate at an acceptable level of service during the weekday a.m. and p.m. peak hours; however, both westbound right-turn and northbound through movements are forecast to operate over capacity (v/c > 1.0).

On-Site Circulation/Site-Access Operations

- Each of the key site driveway study intersections will function acceptably with the proposed traffic control devices.
- Proposed on-site bicycle and pedestrian facilities will serve day-to-day use within the site while providing connectivity to the larger bicycle and pedestrian networks surrounding the site and the Ruth Bascom Path to the west.

Recommendations

The following list provides a summary of the mitigation measures recommended as part of this proposed development.

- The 4th Avenue/Coburg Road intersection should be improved in conjunction with initial redevelopment of the site. Recommended improvements include:
    - Retain right-in/right-out turn movement restrictions;

- Provide dual right-turn lanes on 4th Avenue between the EWEB Headquarters Building and Coburg Road (approximately 125 feet of storage);
- Signalize westbound right turn movements on 4th Avenue and northbound through movements on Coburg Road at the intersection (southbound movements would remain unsignalized and pedestrian phases would not be provided since grade-separated pedestrian/bicycle crossings are provided via 4th Avenue and the Southbank Ruth Bascom path under the Ferry Street Bridge); and
- Preserve existing multimodal facilities (bike lane and sidewalk).

- The 8th Avenue/Hilyard Street intersection should be reconstructed in conjunction with site development. Improvements should include:
  - Provision of a new highway-railroad crossing, including track panels, lights, gates, audible warning devices, and upgraded railroad track detection as required by ODOT Rail and/or Union Pacific Railroad;
  - Signalization of the 8th Avenue/Hilyard Street intersection, including pedestrian movements;
  - Provision of a northbound right-turn lane that will offer storage for right-turn vehicles queued on Hilyard Street during train passage.
- Shrubbery, landscaping, and above ground utilities near the internal intersections and site access points should be located and maintained to ensure adequate sight distance.

Section 7
References

REFERENCES

1. Lane Transit District, *Service Map*, September 2011.
   http://www.ltd.org/pdf/routes/2011%20jan%209%20system%20map.pdf
2. Lane Council of Governments, *TransPlan Policy Element*, As Amended July 2002
   http://www.lcog.org/documents/TransPlan/Jul-02/Chap%202.pdf
3. City of Eugene, *Central Area Transportation Study Update*, Adopted June 2004.
   www.eugene-or.gov/portal/server.pt/gateway/PTARGS_0_2_181672_0_0_18/01%20Cover-TOC-Intro.pdf
4. Federal Highway Administration, *Manual on Uniform Traffic Control Devices*, 2009.
   http://mutcd.fhwa.dot.gov/
5. Oregon Department of Transportation, *Analysis Procedures Manual*, April 2006.
   http://www.oregon.gov/ODOT/TD/TPAU/docs/A_APM/APM.pdf
6. Institute of Transportation Engineers. *Trip Generation, 8th Edition*. 2008.

Appendix A
Traffic Count Data

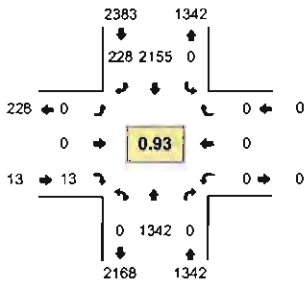
Type of peak hour being reported: User-Defined

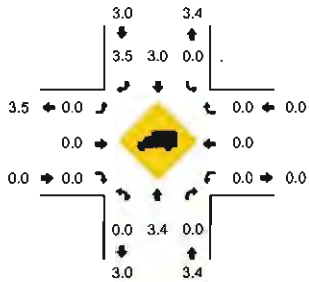
Method for determining peak hour: Total Entering Volume

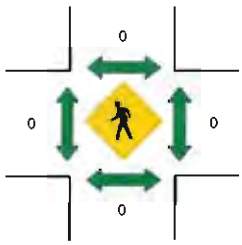
LOCATION: Coburg Rd – E 3rd Ave
CITY/STATE: Eugene, OR

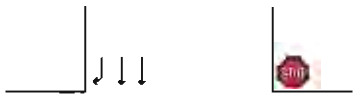
QC JOB #: 10660401
DATE: Wed, Sep 21 2011

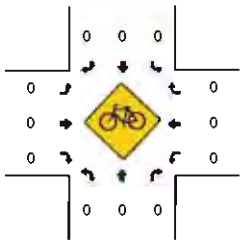
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

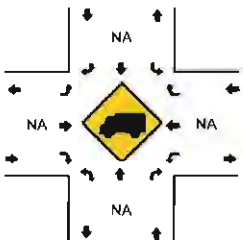


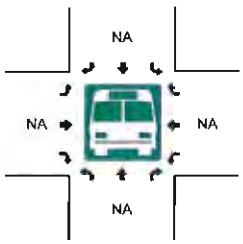












5-Min Count Period Beginning At	Coburg Rd (Northbound)				Coburg Rd (Southbound)				E 3rd Ave (Eastbound)				E 3rd Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	52	0	0	0	67	15	0	0	0	0	0	0	0	0	0	134	
7:05 AM	0	40	0	0	0	89	19	0	0	0	1	0	0	0	0	0	149	
7:10 AM	0	59	0	0	0	72	11	0	0	0	1	0	0	0	0	0	143	
7:15 AM	0	67	0	0	0	91	10	0	0	0	0	0	0	0	0	0	168	
7:20 AM	0	73	0	0	0	116	15	0	0	0	2	0	0	0	0	0	206	
7:25 AM	0	70	0	0	0	121	16	0	0	0	1	0	0	0	0	0	208	
7:30 AM	0	81	0	0	0	138	22	0	0	0	1	0	0	0	0	0	242	
7:35 AM	0	102	0	0	0	129	18	0	0	0	0	0	0	0	0	0	249	
7:40 AM	0	106	0	0	0	180	11	0	0	0	0	0	0	0	0	0	297	
7:45 AM	0	92	0	0	0	201	22	0	0	0	0	0	0	0	0	0	315	
7:50 AM	0	103	0	0	0	211	17	0	0	0	4	0	0	0	0	0	335	
7:55 AM	0	124	0	0	0	207	25	0	0	0	3	0	0	0	0	0	359	2805
8:00 AM	0	118	0	0	0	163	20	0	0	0	1	0	0	0	0	0	302	2973
8:05 AM	0	116	0	0	0	170	14	0	0	0	1	0	0	0	0	0	301	3125
8:10 AM	0	105	0	0	0	178	22	0	0	0	0	0	0	0	0	0	305	3287
8:15 AM	0	119	0	0	0	178	11	0	0	0	0	0	0	0	0	0	308	3427
8:20 AM	0	133	0	0	0	173	29	0	0	0	0	0	0	0	0	0	335	3556
8:25 AM	0	99	0	0	0	170	24	0	0	0	1	0	0	0	0	0	294	3642
8:30 AM	0	106	0	0	0	161	10	0	0	0	2	0	0	0	0	0	279	3679
8:35 AM	0	121	0	0	0	163	23	0	0	0	1	0	0	0	0	0	308	3738
8:40 AM	0	101	0	0	0	185	18	0	0	0	1	0	0	0	0	0	305	3746
8:45 AM	0	124	0	0	0	198	10	0	0	0	1	0	0	0	0	0	333	3764
8:50 AM	0	155	0	0	0	192	17	0	0	0	0	0	0	0	0	0	364	3793
8:55 AM	0	133	0	0	0	132	21	0	0	0	0	0	0	0	0	0	286	3720

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	1276	0	0	0	2476	256	0	0	0	28	0	0	0	0	0	4036
Heavy Trucks	0	48	0		0	56	4		0	0	0		0	0	0		108
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 9/22/2011 5:43 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

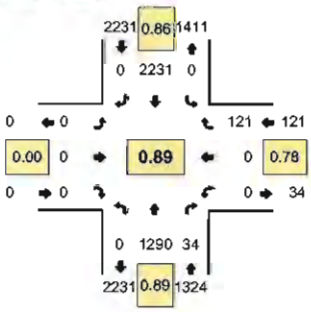
Type of peak hour being reported: User-Defined

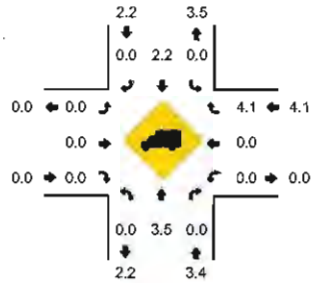
Method for determining peak hour: Total Entering Volume

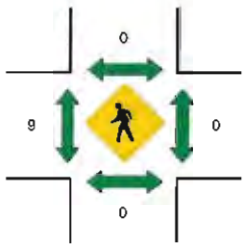
LOCATION: Coburg St -- 4th Ave
CITY/STATE: Eugene, OR

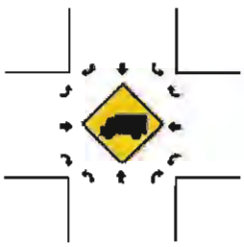
QC JOB #: 10622001
DATE: 5/24/2011

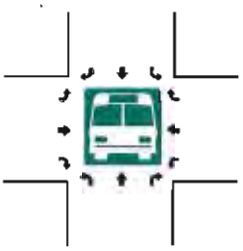
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:45 AM -- 8:00 AM











5-Min Count Period Beginning At	Coburg St (Northbound)				Coburg St (Southbound)				4th Ave (Eastbound)				4th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	44	3	0	0	81	0	0	0	0	0	0	0	0	1	0	129	
7:05 AM	0	40	2	0	0	67	0	0	0	0	0	0	0	0	5	0	114	
7:10 AM	0	42	0	0	0	74	0	0	0	0	0	0	0	0	1	0	117	
7:15 AM	0	56	1	0	0	92	0	0	0	0	0	0	0	0	4	0	153	
7:20 AM	0	67	4	0	0	119	0	0	0	0	0	0	0	0	6	0	196	
7:25 AM	0	75	1	0	0	140	0	0	0	0	0	0	0	0	5	0	221	
7:30 AM	0	70	2	0	0	122	0	0	0	0	0	0	0	0	9	0	203	
7:35 AM	0	84	4	0	0	169	0	0	0	0	0	0	0	0	4	0	261	
7:40 AM	0	116	2	0	0	190	0	0	0	0	0	0	0	0	8	0	316	
7:45 AM	0	96	3	0	0	227	0	0	0	0	0	0	0	0	14	0	340	
7:50 AM	0	149	5	0	0	207	0	0	0	0	0	0	0	0	15	0	376	
7:55 AM	0	90	6	0	0	216	0	0	0	0	0	0	0	0	9	0	321	2747
8:00 AM	0	104	5	0	0	169	0	0	0	0	0	0	0	0	15	0	293	2911
8:05 AM	0	121	0	0	0	247	0	0	0	0	0	0	0	0	9	0	377	3174
8:10 AM	0	111	0	0	0	171	0	0	0	0	0	0	0	0	10	0	292	3349
8:15 AM	0	98	2	0	0	162	0	0	0	0	0	0	0	0	15	0	277	3473
8:20 AM	0	94	3	0	0	172	0	0	0	0	0	0	0	0	9	0	278	3555
8:25 AM	0	90	4	0	0	166	0	0	0	0	0	0	0	0	4	0	264	3598
8:30 AM	0	104	3	0	0	149	0	0	0	0	0	0	0	0	5	0	261	3656
8:35 AM	0	117	1	0	0	155	0	0	0	0	0	0	0	0	8	0	281	3676
8:40 AM	0	84	1	0	0	164	0	0	0	0	0	0	0	0	8	0	257	3617
8:45 AM	0	117	5	0	0	157	0	0	0	0	0	0	0	0	12	0	291	3568
8:50 AM	0	127	0	0	0	151	0	0	0	0	0	0	0	0	18	0	296	3488
8:55 AM	0	111	2	0	0	126	0	0	0	0	0	0	0	0	7	0	246	3413

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	1340	56	0	0	2600	0	0	0	0	0	0	0	0	152	0	4148
Heavy Trucks	0	32	0		0	64	0		0	0	0		0	0	0		96
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

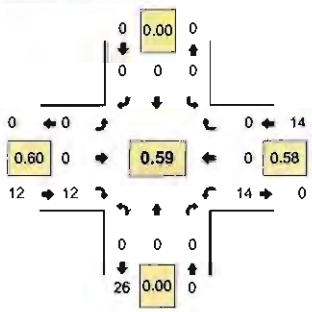
Type of peak hour being reported: User-Defined

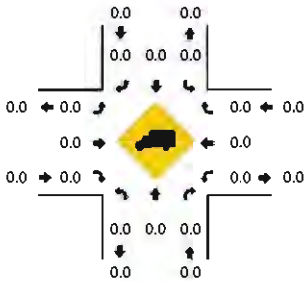
Method for determining peak hour: Total Entering Volume

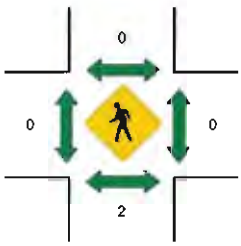
LOCATION: EWEB Parking Lot -- 4th Ave
CITY/STATE: Eugene, OR

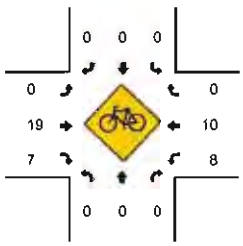
QC JOB #: 10622034
DATE: 5/24/2011

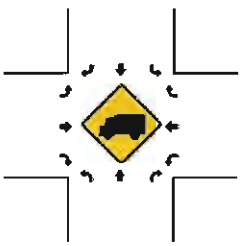
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

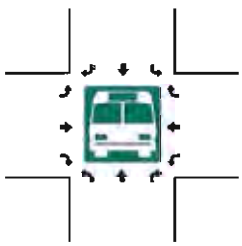












5-Min Count Period Beginning At	EWEB Parking Lot (Northbound)				EWEB Parking Lot (Southbound)				4th Ave (Eastbound)				4th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	3	
7:05 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
7:10 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
7:20 AM	0	0	0	0	0	0	0	0	0	0	2	0	3	0	0	0	5	
7:25 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	
7:35 AM	0	0	0	0	0	0	0	0	0	0	4	0	3	0	0	0	7	
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	
7:50 AM	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	3	
7:55 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	29
8:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	4	0	0	0	6	32
8:05 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	32
8:10 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	32
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	3	34
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	30
8:25 AM	0	0	0	0	0	0	0	0	0	0	2	0	3	0	0	0	5	34
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	33
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
8:40 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	28
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	3	29
8:50 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	30
8:55 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	31

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	0	20	0	24	0	0	0	44
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	3	1		0	4	0		8
Railroad Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

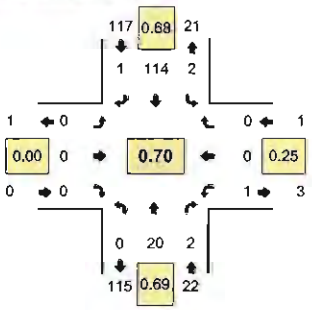
LOCATION: Mill St – EWEB Parking Lots

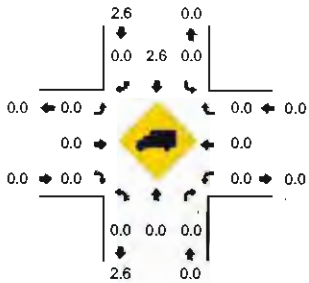
CITY/STATE: Eugene, OR

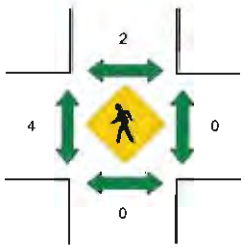
QC JOB #: 10622031

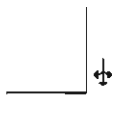
DATE: 5/24/2011

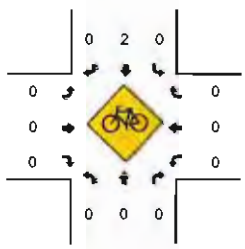
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

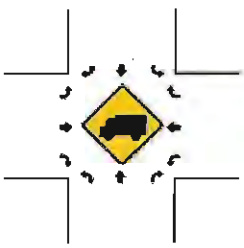


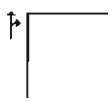


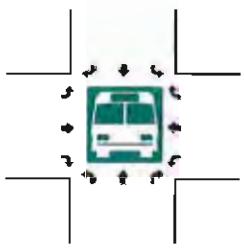












5-Min Count Period Beginning At	Mill St (Northbound)				Mill St (Southbound)				EWEB Parking Lots (Eastbound)				EWEB Parking Lots (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	10	
7:05 AM	0	0	0	0	0	6	0	1	0	0	0	0	0	0	0	0	7	
7:10 AM	0	0	0	0	0	5	0	1	0	0	0	0	0	0	0	0	6	
7:15 AM	0	1	0	0	1	5	0	0	0	0	0	0	0	0	0	0	7	
7:20 AM	0	2	1	0	0	7	0	0	0	0	0	0	0	0	0	0	10	
7:25 AM	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	17	
7:30 AM	0	2	0	0	0	12	0	0	0	0	0	0	0	0	0	0	14	
7:35 AM	0	2	0	0	1	13	0	0	0	0	0	0	0	0	0	0	16	
7:40 AM	0	2	0	0	0	10	0	0	0	0	0	0	0	0	0	0	12	
7:45 AM	0	3	0	0	0	7	0	0	0	0	0	0	1	0	0	0	11	
7:50 AM	0	1	0	0	0	11	0	0	0	0	0	0	0	0	0	0	12	
7:55 AM	0	3	0	0	0	15	0	0	0	0	0	0	0	0	0	0	18	140
8:00 AM	0	1	2	0	0	17	0	0	0	0	0	0	0	0	0	0	20	150
8:05 AM	0	1	0	0	0	9	0	1	0	0	0	0	0	0	0	0	11	154
8:10 AM	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	9	157
8:15 AM	0	0	0	0	0	7	1	0	0	0	0	0	0	0	0	0	8	158
8:20 AM	0	1	0	0	1	11	0	0	0	0	0	0	0	0	0	0	13	161
8:25 AM	0	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	7	151
8:30 AM	0	4	0	0	0	9	0	0	0	0	0	0	0	0	0	0	13	150
8:35 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6	140
8:40 AM	0	2	0	0	3	8	1	0	0	0	0	0	0	0	0	0	14	142
8:45 AM	0	0	0	0	2	7	0	0	0	0	0	0	0	0	0	0	9	140
8:50 AM	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	8	136
8:55 AM	0	1	0	0	0	14	0	0	0	0	0	0	0	0	0	0	15	133

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	20	8	0	0	172	0	0	0	0	0	0	0	0	0	0	200
Heavy Trucks	0	0	0		0	8	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	1	0		0	0	0		0	0	0		1
Railroad Stopped Buses																	

Comments: East & West parking lots

Report generated on 6/22/2011 3:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

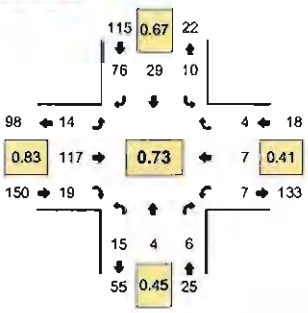
Type of peak hour being reported: User-Defined

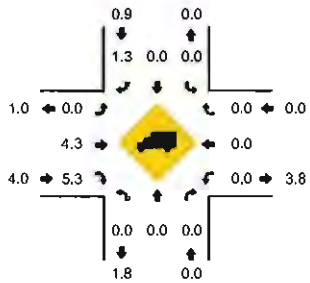
Method for determining peak hour: Total Entering Volume

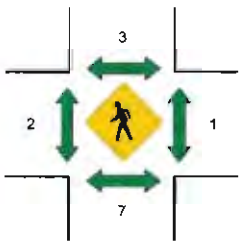
LOCATION: Mill St -- 4th Ave
CITY/STATE: Eugene, OR

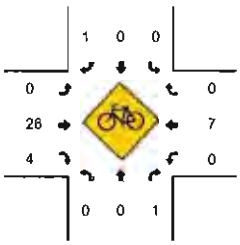
QC JOB #: 10622007
DATE: 5/24/2011

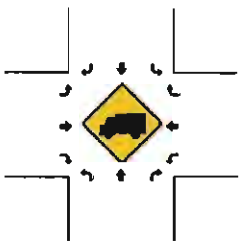
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:50 AM -- 8:05 AM











5-Min Count Period Beginning At	Mill St (Northbound)				Mill St (Southbound)				4th Ave (Eastbound)				4th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	1	4	4	0	0	1	0	0	0	1	0	0	11	
7:05 AM	0	0	0	0	1	4	2	0	0	5	1	0	1	1	0	0	15	
7:10 AM	2	0	1	0	1	2	1	0	0	2	2	0	0	0	0	0	11	
7:15 AM	0	0	0	0	0	3	3	0	1	3	1	0	0	0	0	0	11	
7:20 AM	0	0	0	0	2	0	5	0	2	7	1	0	0	0	1	0	18	
7:25 AM	1	0	0	0	2	2	13	0	0	4	0	0	0	1	0	0	23	
7:30 AM	2	0	2	0	1	0	11	0	1	7	5	0	0	0	1	0	30	
7:35 AM	2	1	0	0	4	3	6	0	1	4	3	0	0	1	0	0	25	
7:40 AM	4	2	1	0	1	2	7	0	0	9	0	0	0	1	0	0	27	
7:45 AM	0	2	0	0	0	2	6	0	0	14	1	0	0	1	1	0	27	
7:50 AM	3	0	2	0	1	4	6	0	0	8	3	0	1	1	1	0	30	
7:55 AM	1	0	1	0	1	3	11	0	1	12	0	0	1	3	2	0	36	264
8:00 AM	2	0	0	0	2	5	10	0	3	14	3	0	0	0	0	0	39	292
8:05 AM	1	0	0	0	1	1	7	0	1	9	1	0	0	0	0	0	21	296
8:10 AM	0	0	0	0	1	2	6	0	0	13	1	0	0	0	0	0	23	310
8:15 AM	1	0	2	0	1	2	4	0	0	13	0	0	0	0	0	0	23	322
8:20 AM	1	0	0	0	0	5	6	0	1	7	2	0	2	0	0	0	24	328
8:25 AM	1	0	0	0	0	1	5	0	1	6	4	0	1	0	0	0	19	324
8:30 AM	0	0	0	0	2	2	5	0	4	5	4	0	2	1	0	0	25	319
8:35 AM	1	0	0	0	0	0	3	0	3	7	0	0	0	0	0	0	14	308
8:40 AM	0	0	0	0	2	1	5	0	1	8	1	0	2	0	0	0	20	301
8:45 AM	0	0	1	0	2	0	5	0	0	11	1	0	0	4	0	0	24	298
8:50 AM	0	0	3	0	5	0	3	0	0	15	0	0	0	0	0	0	26	294
8:55 AM	0	0	2	0	2	2	10	0	1	11	3	0	0	1	0	0	32	290

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	0	12	0	16	48	108	0	16	136	24	0	8	16	12	0	420
Heavy Trucks	0	0	0		0	0	4		0	4	0		0	0	0		8
Pedestrians		4				8				0				0			12
Bicycles	0	0	1		0	0	1		0	4	3		0	2	0		11
Railroad Stopped Buses																	

Comments: (site driveway and neighborhood street)

Report generated on 6/22/2011 3:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

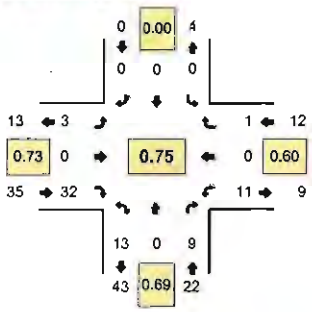
Type of peak hour being reported: User-Defined

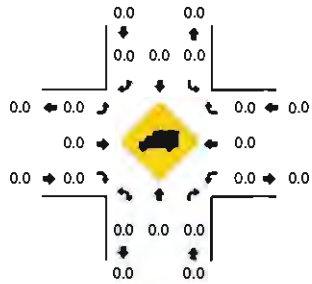
Method for determining peak hour: Total Entering Volume

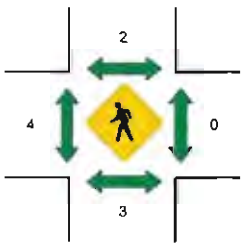
LOCATION: EWEB North & South Overflow Park -- 4th Ave
CITY/STATE: Eugene, OR

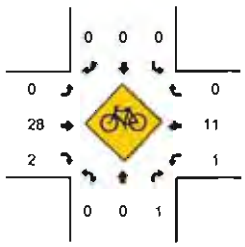
QC JOB #: 10622028
DATE: 5/24/2011

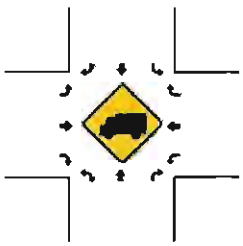
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

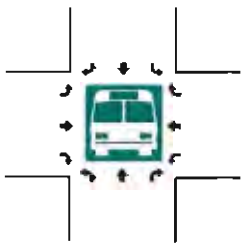












5-Min Count Period Beginning At	EWEB North & South Overflow Park (Northbound)				EWEB North & South Overflow Park (Southbound)				4th Ave (Eastbound)				4th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
7:20 AM	0	0	1	0	0	0	0	0	0	0	1	0	2	0	0	0	4	
7:25 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	4	
7:35 AM	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	4	
7:40 AM	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	5	
7:45 AM	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	6	
7:50 AM	1	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	5	
7:55 AM	1	0	1	0	0	0	0	0	0	0	7	0	3	0	0	0	12	43
8:00 AM	1	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	5	48
8:05 AM	1	0	1	0	0	0	0	0	0	0	2	0	1	0	0	0	5	53
8:10 AM	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	56
8:15 AM	1	0	1	0	0	0	0	0	0	0	5	0	0	0	0	0	7	62
8:20 AM	2	0	0	0	0	0	0	0	1	0	3	0	1	0	0	0	7	65
8:25 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	65
8:30 AM	0	0	1	0	0	0	0	0	2	0	3	0	0	0	1	0	7	68
8:35 AM	1	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	5	69
8:40 AM	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	3	67
8:45 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	63
8:50 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	59
8:55 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	49

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	0	12	0	0	0	0	0	0	0	44	0	16	0	0	0	92
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		4				4				12				0			20
Bicycles	0	0	1		0	0	0		0	9	0		0	4	0		14
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

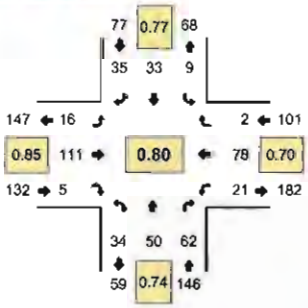
Type of peak hour being reported: User-Defined

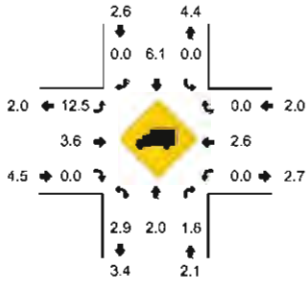
Method for determining peak hour: Total Entering Volume

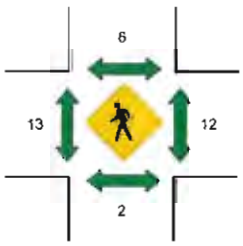
LOCATION: High St – 4th Ave
CITY/STATE: Eugene, OR

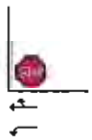
QC JOB #: 10622004
DATE: 5/24/2011

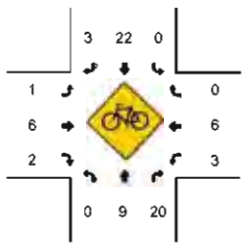
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:55 AM -- 8:10 AM

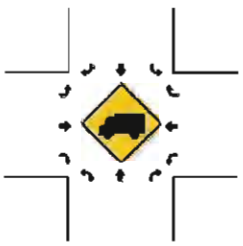


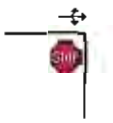


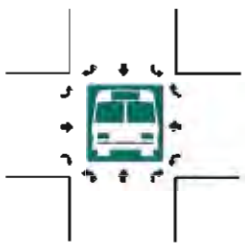












5-Min Count Period Beginning At	High St (Northbound)				High St (Southbound)				4th Ave (Eastbound)				4th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	2	1	0	1	3	0	0	0	0	0	0	1	4	0	0	12	
7:05 AM	0	0	1	0	1	1	1	0	0	5	0	0	0	4	0	0	13	
7:10 AM	1	0	1	0	0	5	3	0	0	3	0	0	2	2	0	0	17	
7:15 AM	2	1	1	0	0	0	2	0	1	5	0	0	1	2	0	0	15	
7:20 AM	1	4	4	0	1	6	2	0	2	5	0	0	1	2	0	0	28	
7:25 AM	2	2	0	0	0	4	2	0	1	5	0	0	7	7	0	0	30	
7:30 AM	3	1	6	0	3	3	1	0	0	5	0	0	5	6	0	0	33	
7:35 AM	1	4	2	0	0	3	4	0	1	7	0	0	1	9	0	0	32	
7:40 AM	1	0	0	0	2	4	2	0	4	8	0	0	2	6	0	0	29	
7:45 AM	2	4	4	0	0	1	1	0	2	13	1	0	0	10	1	0	39	
7:50 AM	3	3	4	0	1	4	2	0	0	7	0	0	2	5	1	0	32	
7:55 AM	5	7	7	0	2	3	1	0	1	11	1	0	2	11	0	0	51	331
8:00 AM	2	3	4	0	1	3	5	0	0	17	0	0	2	12	0	0	49	368
8:05 AM	6	4	4	0	1	3	6	0	1	8	0	0	2	7	0	0	42	397
8:10 AM	2	2	10	0	1	4	1	0	2	8	0	0	4	3	0	0	37	417
8:15 AM	1	8	10	0	1	4	3	0	2	5	2	0	3	2	0	0	41	443
8:20 AM	3	6	7	0	0	1	4	0	0	7	0	0	4	5	0	0	37	452
8:25 AM	1	5	3	0	0	1	1	0	2	9	0	0	0	7	0	0	29	451
8:30 AM	1	8	5	0	0	2	8	0	1	12	0	0	0	5	0	0	40	458
8:35 AM	7	2	4	0	0	3	1	0	1	6	1	0	0	5	0	0	30	456
8:40 AM	4	8	6	0	1	6	3	0	2	3	1	0	0	4	1	0	39	466
8:45 AM	3	2	5	0	1	2	3	0	1	5	1	0	3	6	1	0	33	460
8:50 AM	8	5	4	0	1	5	5	0	0	8	0	0	2	2	0	0	40	468
8:55 AM	7	6	8	0	2	4	2	0	0	7	0	0	2	8	1	0	47	464

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	56	60	0	16	36	48	0	8	144	4	0	24	120	0	0	568
Heavy Trucks	4	0	0		0	0	0		4	4	0		0	4	0		16
Pedestrians		0				0				4				12			16
Bicycles	0	3	3		0	5	0		0	2	0		0	2	0		15
Railroad Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:32 PM

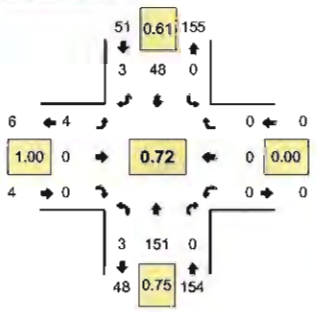
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: User-Defined

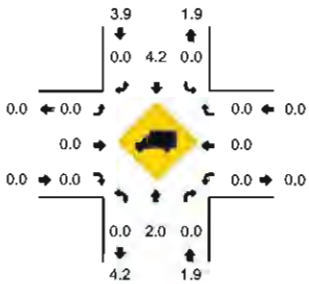
Method for determining peak hour: Total Entering Volume

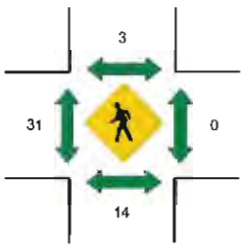
LOCATION: High St – West Dwy
CITY/STATE: Eugene, OR

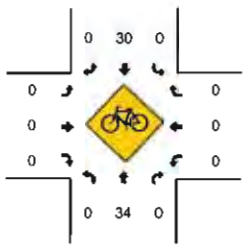
QC JOB #: 10622010
DATE: 5/24/2011

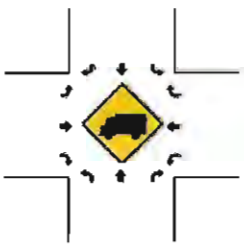


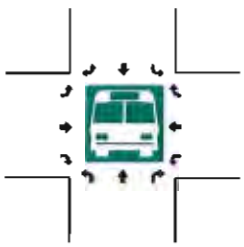
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:05 AM -- 8:20 AM











5-Min Count Period Beginning At	High St (Northbound)				High St (Southbound)				West Dwy (Eastbound)				West Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	
7:05 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
7:10 AM	0	3	0	0	0	7	0	0	0	0	0	0	0	0	0	0	10	
7:15 AM	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6	
7:20 AM	0	9	0	0	0	7	0	0	0	0	0	0	0	0	0	0	16	
7:25 AM	0	7	0	0	0	11	0	0	0	0	0	0	0	0	0	0	18	
7:30 AM	0	9	0	0	0	7	0	0	0	0	0	0	0	0	0	0	16	
7:35 AM	0	7	0	0	0	2	0	0	0	0	0	0	0	0	0	0	9	
7:40 AM	0	0	0	0	0	2	1	0	1	0	0	0	0	0	0	0	4	
7:45 AM	0	16	0	0	0	4	0	0	0	0	0	0	0	0	0	0	20	
7:50 AM	0	10	0	0	0	5	0	0	0	0	0	0	0	0	0	0	15	
7:55 AM	0	16	0	0	0	5	1	0	1	0	0	0	0	0	0	0	23	142
8:00 AM	1	11	0	0	0	2	0	0	0	0	0	0	0	0	0	0	14	152
8:05 AM	0	17	0	0	0	5	0	0	0	0	0	0	0	0	0	0	22	173
8:10 AM	0	14	0	0	0	8	0	0	0	0	0	0	0	0	0	0	22	185
8:15 AM	1	19	0	0	0	7	1	0	1	0	0	0	0	0	0	0	29	208
8:20 AM	0	16	0	0	0	3	0	0	0	0	0	0	0	0	0	0	19	211
8:25 AM	0	7	0	0	0	2	0	0	0	0	0	0	0	0	0	0	9	202
8:30 AM	1	14	0	0	0	1	0	0	1	0	0	0	0	0	0	0	17	203
8:35 AM	0	11	0	0	0	4	0	0	0	0	0	0	0	0	0	0	15	209
8:40 AM	1	19	0	0	0	6	1	0	0	0	0	0	0	0	0	0	27	232
8:45 AM	3	24	0	0	0	9	1	0	1	0	0	0	0	0	0	0	38	250
8:50 AM	2	14	0	0	0	6	0	0	0	0	0	0	0	0	0	0	22	257
8:55 AM	0	26	0	0	0	4	0	0	0	0	0	0	0	0	0	0	30	264

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	200	0	0	0	80	4	0	4	0	0	0	0	0	0	0	292
Heavy Trucks	0	8	0		0	0	0		0	0	0		0	0	0		8
Pedestrians		20				0				12				0			32
Bicycles	0	13	0		0	4	0		0	0	0		0	0	0		17
Railroad																	
Stopped Buses																	

Comments: West Driveway opposite future site access

Report generated on 6/22/2011 3:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

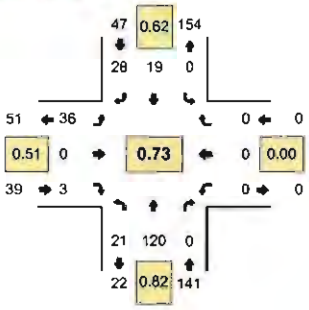
Type of peak hour being reported: User-Defined

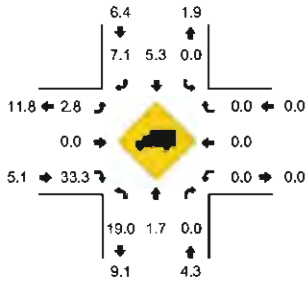
Method for determining peak hour: Total Entering Volume

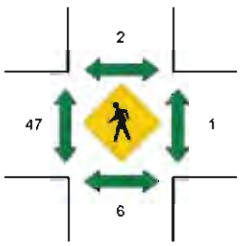
LOCATION: High St -- 5th Ave
CITY/STATE: Eugene, OR

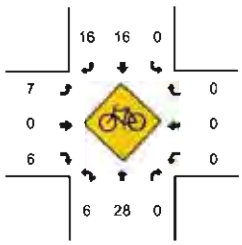
QC JOB #: 10622013
DATE: 5/24/2011

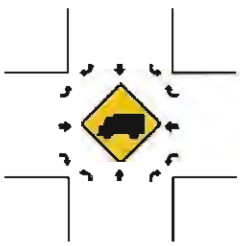
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:05 AM -- 8:20 AM

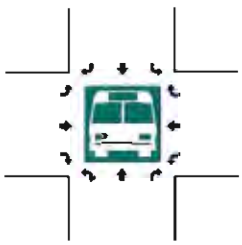












5-Min Count Period Beginning At	High St (Northbound)				High St (Southbound)				5th Ave (Eastbound)				5th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	
7:05 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
7:10 AM	1	3	0	0	0	2	5	0	0	0	1	0	0	0	0	0	12	
7:15 AM	0	5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6	
7:20 AM	1	6	0	0	0	2	5	0	3	0	0	0	0	0	0	0	17	
7:25 AM	2	5	0	0	0	2	8	0	2	0	1	0	0	0	0	0	20	
7:30 AM	0	9	0	0	0	4	4	0	0	0	0	0	0	0	0	0	17	
7:35 AM	1	6	0	0	0	1	1	0	1	0	1	0	0	0	0	0	11	
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	1	13	0	0	0	0	6	0	3	0	1	0	0	0	0	0	24	
7:50 AM	1	9	0	0	0	0	4	0	0	0	1	0	0	0	0	0	15	
7:55 AM	2	12	0	0	0	3	3	0	4	0	1	0	0	0	0	0	25	152
8:00 AM	1	11	0	0	0	0	2	0	1	0	0	0	0	0	0	0	15	163
8:05 AM	4	13	0	0	0	3	2	0	3	0	0	0	0	0	0	0	25	187
8:10 AM	1	8	0	0	0	4	4	0	7	0	0	0	0	0	0	0	24	199
8:15 AM	3	11	0	0	0	2	4	0	9	0	0	0	0	0	0	0	29	222
8:20 AM	1	15	0	0	0	2	1	0	1	0	0	1	0	0	0	0	21	226
8:25 AM	2	7	0	0	0	2	0	0	0	0	0	0	0	0	0	0	11	217
8:30 AM	3	11	0	0	0	0	1	0	4	0	0	1	0	0	0	0	20	220
8:35 AM	2	10	0	0	0	3	1	0	2	0	0	0	0	0	0	0	18	227
8:40 AM	2	16	0	0	0	2	4	0	4	0	0	0	0	0	0	0	28	255
8:45 AM	2	9	0	0	0	3	1	0	2	0	1	0	0	0	0	0	18	249
8:50 AM	2	13	0	0	0	2	4	0	3	0	0	0	0	0	0	0	24	258
8:55 AM	4	18	0	0	0	2	3	0	7	0	1	0	0	0	0	0	35	268

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	128	0	0	0	36	40	0	76	0	0	0	0	0	0	0	312
Heavy Trucks	12	4	0		0	4	0		4	0	0		0	0	0		24
Pedestrians		4				0				44				0			48
Bicycles	2	10	0		0	4	5		3	0	2		0	0	0		26
Railroad Stopped Buses																	

Comments: (T-intersection w/diagonal RR crossing near proposed new intersection)

Report generated on 6/22/2011 3:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

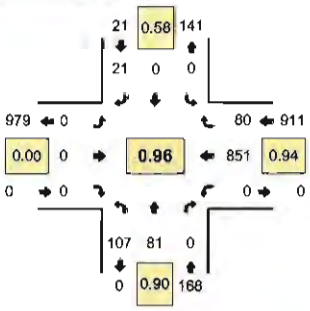
Type of peak hour being reported: User-Defined

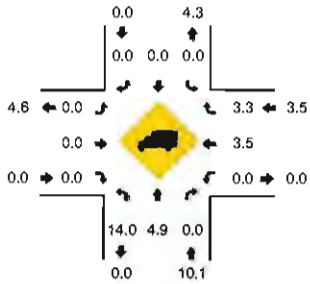
Method for determining peak hour: Total Entering Volume

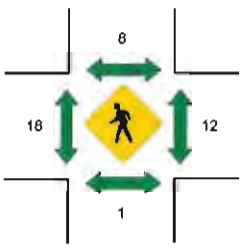
LOCATION: High St -- 6th Ave
CITY/STATE: Eugene, OR

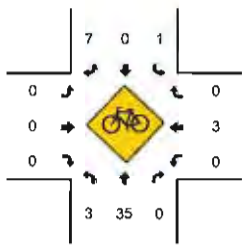
QC JOB #: 10622016
DATE: 5/24/2011

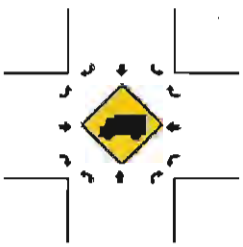
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

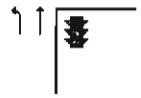


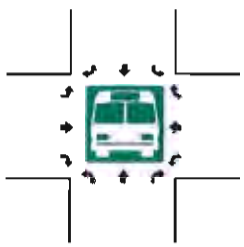












5-Min Count Period Beginning At	High St (Northbound)				High St (Southbound)				6th Ave (Eastbound)				6th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	0	0	0	0	0	1	0	0	0	0	0	0	24	2	0	30	
7:05 AM	2	0	0	0	0	0	1	0	0	0	0	0	0	41	0	0	44	
7:10 AM	5	2	0	0	0	0	3	0	0	0	0	0	0	34	1	0	45	
7:15 AM	4	1	0	0	0	0	0	0	0	0	0	0	0	44	4	0	53	
7:20 AM	5	4	0	0	0	0	2	0	0	0	0	0	0	46	3	0	60	
7:25 AM	3	3	0	0	0	0	3	0	0	0	0	0	0	56	4	0	69	
7:30 AM	8	4	0	0	0	0	4	0	0	0	0	0	0	49	6	0	71	
7:35 AM	4	2	0	0	0	0	1	0	0	0	0	0	0	56	5	0	68	
7:40 AM	11	2	0	0	0	0	0	0	0	0	0	0	0	76	1	0	90	
7:45 AM	9	5	0	0	0	0	0	0	0	0	0	0	0	68	7	0	89	
7:50 AM	11	8	0	0	0	0	1	0	0	0	0	0	0	84	2	0	106	
7:55 AM	8	7	0	0	0	0	4	0	0	0	0	0	0	68	6	0	93	818
8:00 AM	5	6	0	0	0	0	0	0	0	0	0	0	0	76	6	0	93	881
8:05 AM	15	11	0	0	0	0	3	0	0	0	0	0	0	63	6	0	98	935
8:10 AM	3	3	0	0	0	0	4	0	0	0	0	0	0	84	6	0	100	990
8:15 AM	4	9	0	0	0	0	2	0	0	0	0	0	0	72	5	0	92	1029
8:20 AM	11	11	0	0	0	0	2	0	0	0	0	0	0	65	5	0	94	1063
8:25 AM	9	3	0	0	0	0	2	0	0	0	0	0	0	80	6	0	100	1094
8:30 AM	7	11	0	0	0	0	0	0	0	0	0	0	0	48	4	0	70	1093
8:35 AM	14	5	0	0	0	0	3	0	0	0	0	0	0	67	6	0	95	1120
8:40 AM	11	9	0	0	0	0	1	0	0	0	0	0	0	54	9	0	84	1114
8:45 AM	15	5	0	0	0	0	4	0	0	0	0	0	0	63	6	0	93	1118
8:50 AM	12	8	0	0	0	0	1	0	0	0	0	0	0	60	8	0	89	1101
8:55 AM	15	16	0	0	0	0	2	0	0	0	0	0	0	50	11	0	94	1102

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	96	84	0	0	0	0	20	0	0	0	0	0	0	912	56	0	1168
Heavy Trucks	12	0	0		0	0	0		0	0	0		0	44	0		56
Pedestrians		0				16				24				8			48
Bicycles	0	8	0		1	0	2		0	0	0		0	1	0		12
Railroad Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

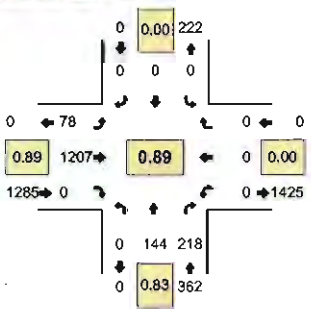
Type of peak hour being reported: User-Defined

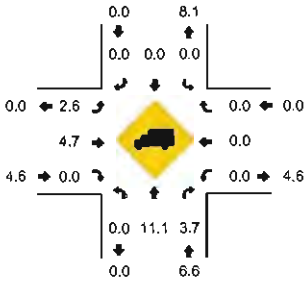
Method for determining peak hour: Total Entering Volume

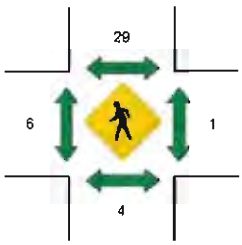
LOCATION: High St -- 7th Ave
CITY/STATE: Eugene, OR

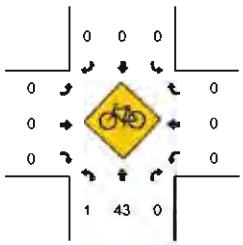
QC JOB #: 10622022
DATE: 5/24/2011

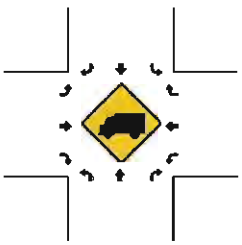
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:55 AM -- 8:10 AM

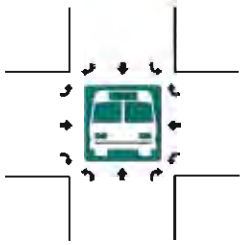












5-Min Count Period Beginning At	High St (Northbound)				High St (Southbound)				7th Ave (Eastbound)				7th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	4	5	0	0	0	0	0	2	44	0	0	0	0	0	0	55	
7:05 AM	0	5	7	0	0	0	0	0	1	41	0	0	0	0	0	0	54	
7:10 AM	0	1	7	0	0	0	0	0	5	56	0	0	0	0	0	0	69	
7:15 AM	0	5	11	0	0	0	0	0	3	59	0	0	0	0	0	0	78	
7:20 AM	0	3	7	0	0	0	0	0	4	76	0	0	0	0	0	0	90	
7:25 AM	0	6	9	0	0	0	0	0	1	65	0	0	0	0	0	0	83	
7:30 AM	0	7	9	0	0	0	0	0	4	74	0	0	0	0	0	0	94	
7:35 AM	0	6	20	0	0	0	0	0	3	101	0	0	0	0	0	0	130	
7:40 AM	0	12	19	0	0	0	0	0	3	99	0	0	0	0	0	0	133	
7:45 AM	0	13	14	0	0	0	0	0	6	106	0	0	0	0	0	0	139	
7:50 AM	0	10	30	0	0	0	0	0	15	128	0	0	0	0	0	0	183	
7:55 AM	0	14	15	0	0	0	0	0	5	100	0	0	0	0	0	0	134	1242
8:00 AM	0	9	25	0	0	0	0	0	7	102	0	0	0	0	0	0	143	1330
8:05 AM	0	22	24	0	0	0	0	0	3	139	0	0	0	0	0	0	188	1464
8:10 AM	0	9	20	0	0	0	0	0	1	55	0	0	0	0	0	0	85	1480
8:15 AM	0	11	12	0	0	0	0	0	6	99	0	0	0	0	0	0	128	1530
8:20 AM	0	10	16	0	0	0	0	0	10	117	0	0	0	0	0	0	153	1593
8:25 AM	0	10	13	0	0	0	0	0	7	88	0	0	0	0	0	0	118	1628
8:30 AM	0	13	15	0	0	0	0	0	7	78	0	0	0	0	0	0	113	1647
8:35 AM	0	11	15	0	0	0	0	0	8	96	0	0	0	0	0	0	130	1647
8:40 AM	0	21	17	0	0	0	0	0	7	77	0	0	0	0	0	0	122	1636
8:45 AM	0	12	19	0	0	0	0	0	3	108	0	0	0	0	0	0	142	1639
8:50 AM	0	15	21	0	0	0	0	0	8	109	0	0	0	0	0	0	153	1609
8:55 AM	0	23	18	0	0	0	0	0	9	95	0	0	0	0	0	0	145	1620

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	180	256	0	0	0	0	0	60	1364	0	0	0	0	0	0	1860
Heavy Trucks	0	28	12		0	0	0		0	76	0		0	0	0		116
Pedestrians		4				12				0				0			16
Bicycles	0	11	0		0	0	0		0	0	0		0	0	0		11
Railroad Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

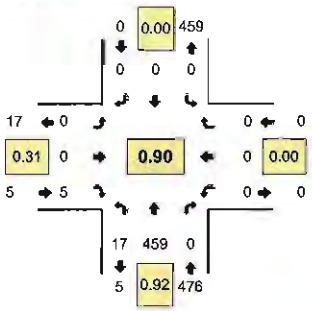
Type of peak hour being reported: User-Defined

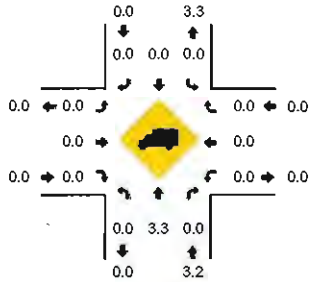
Method for determining peak hour: Total Entering Volume

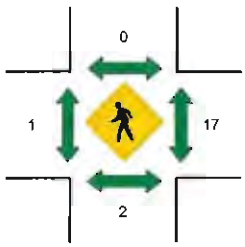
LOCATION: Hilyard St – 8th Ave
CITY/STATE: Eugene, OR

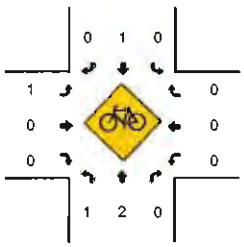
QC JOB #: 10622019
DATE: 5/24/2011

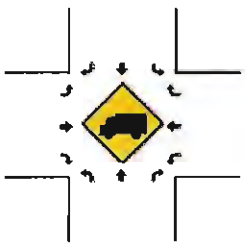
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

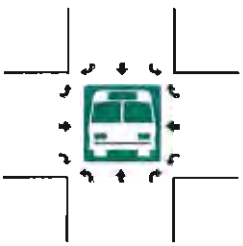












5-Min Count Period Beginning At	Hilyard St (Northbound)				Hilyard St (Southbound)				8th Ave (Eastbound)				8th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	
7:05 AM	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	
7:10 AM	0	16	0	0	0	0	0	0	0	0	2	0	0	0	0	0	18	
7:15 AM	2	24	0	0	0	0	0	0	0	0	1	0	0	0	0	0	27	
7:20 AM	1	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	
7:25 AM	2	26	0	0	0	0	0	0	0	0	1	0	0	0	0	0	29	
7:30 AM	1	33	0	0	0	0	0	0	0	0	1	0	0	0	0	0	35	
7:35 AM	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	
7:40 AM	1	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	
7:45 AM	2	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	
7:50 AM	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	
7:55 AM	2	41	0	0	0	0	0	0	0	0	1	0	0	0	0	0	44	381
8:00 AM	1	39	0	0	0	0	0	0	0	0	2	0	0	0	0	0	42	404
8:05 AM	1	39	0	0	0	0	0	0	0	0	1	0	0	0	0	0	41	423
8:10 AM	1	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	455
8:15 AM	3	32	0	0	0	0	0	0	0	0	1	0	0	0	0	0	36	464
8:20 AM	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	472
8:25 AM	1	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	490
8:30 AM	3	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	487
8:35 AM	2	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	481
8:40 AM	2	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	475
8:45 AM	4	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	464
8:50 AM	2	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	476
8:55 AM	0	41	0	0	0	0	0	0	0	0	2	0	0	0	0	0	43	475

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	508	0	0	0	0	0	0	0	0	12	0	0	0	0	0	532
Heavy Trucks	0	24	0		0	0	0		0	0	0		0	0	0		24
Pedestrians		4				0				0				12			16
Bicycles	0	0	0		0	1	0		1	0	0		0	0	0		2
Railroad Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:32 PM

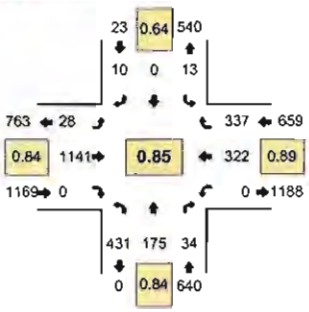
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: User-Defined

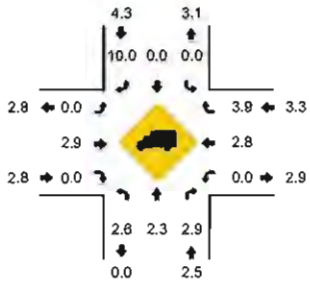
Method for determining peak hour: Total Entering Volume

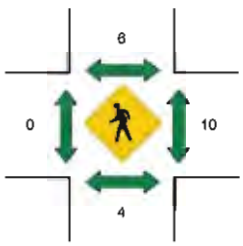
LOCATION: Hilyard St – Broadway
CITY/STATE: Eugene, OR

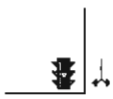
QC JOB #: 10622025
DATE: 5/24/2011

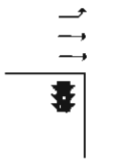


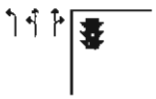
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

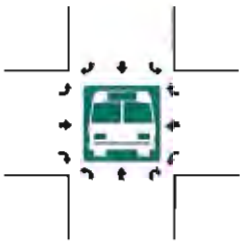












5-Min Count Period Beginning At	Hilyard St (Northbound)				Hilyard St (Southbound)				Broadway (Eastbound)				Broadway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	10	8	1	0	0	0	0	0	3	46	0	0	0	11	11	0	90	
7:05 AM	13	10	1	0	1	0	0	0	3	40	0	0	0	12	13	0	93	
7:10 AM	12	9	0	0	1	0	0	0	3	52	0	0	0	12	8	0	97	
7:15 AM	19	11	1	0	2	0	0	0	2	57	0	0	0	10	14	0	116	
7:20 AM	22	8	1	0	0	0	0	0	1	43	0	0	0	13	23	0	111	
7:25 AM	25	8	3	0	2	0	0	0	4	69	0	0	0	26	18	0	155	
7:30 AM	17	16	1	0	1	0	1	0	1	51	0	0	0	18	19	0	125	
7:35 AM	21	11	2	0	0	0	1	0	2	93	0	0	0	19	27	0	176	
7:40 AM	37	18	2	0	1	0	4	0	1	110	0	0	0	21	28	0	222	
7:45 AM	31	13	2	0	0	0	0	0	2	91	0	0	0	29	30	0	198	
7:50 AM	38	11	7	0	0	0	0	0	1	119	0	0	0	35	16	0	227	
7:55 AM	32	11	2	0	2	0	0	0	5	99	0	0	0	31	28	0	210	1820
8:00 AM	35	17	3	0	1	0	3	0	1	93	0	0	0	25	29	0	207	1937
8:05 AM	35	13	0	0	3	0	0	0	1	79	0	0	0	28	28	0	187	2031
8:10 AM	26	16	3	0	1	0	0	0	3	64	0	0	0	23	28	0	164	2098
8:15 AM	41	15	5	0	1	0	2	0	4	83	0	0	0	28	22	0	201	2183
8:20 AM	55	22	3	0	2	0	0	0	2	171	0	0	0	32	53	0	340	2412
8:25 AM	34	15	1	0	1	0	0	0	3	85	0	0	0	18	32	0	189	2446
8:30 AM	37	15	2	0	1	0	0	0	1	58	0	0	0	29	18	0	159	2480
8:35 AM	30	9	4	0	0	0	1	0	4	89	0	0	0	23	27	0	187	2491
8:40 AM	42	21	2	0	1	0	0	0	1	60	0	0	0	21	16	0	164	2433
8:45 AM	37	17	5	0	1	0	1	0	3	86	0	0	0	23	20	0	173	2408
8:50 AM	40	16	3	0	1	0	0	0	2	75	0	0	0	25	24	0	186	2367
8:55 AM	37	19	1	0	2	0	1	0	3	63	0	0	0	17	21	0	164	2321

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	520	208	36	0	16	0	8	0	36	1356	0	0	0	312	428	0	2920
Heavy Trucks	12	4	0		0	0	4		0	48	0		0	12	20		100
Pedestrians		0				4				0				16			20
Bicycles	0	2	0		2	0	0		0	0	0		0	0	0		4
Railroad Stopped Buses																	

Comments: (site access from south)

Report generated on 6/22/2011 3:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

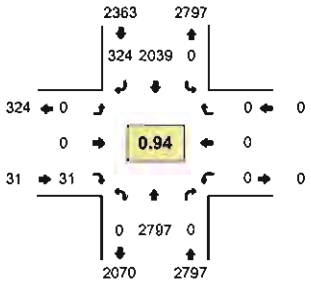
Type of peak hour being reported: User-Defined

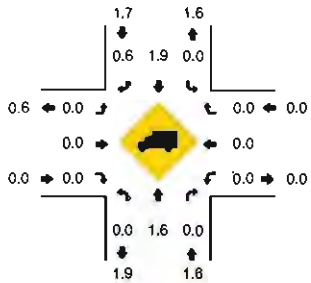
Method for determining peak hour: Total Entering Volume

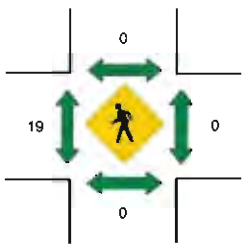
LOCATION: Coburg Rd -- E 3rd Ave
CITY/STATE: Eugene, OR

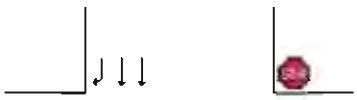
QC JOB #: 10660402
DATE: Wed, Sep 21 2011

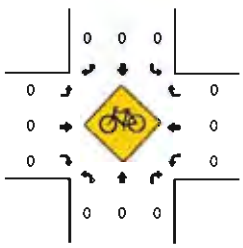
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

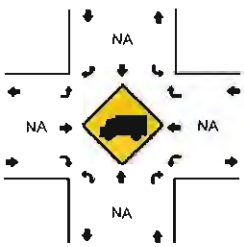


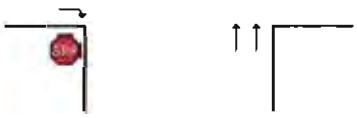


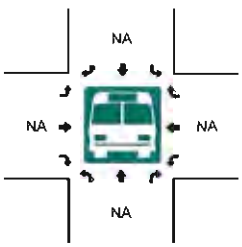












5-Min Count Period Beginning At	Coburg Rd (Northbound)				Coburg Rd (Southbound)				E 3rd Ave (Eastbound)				E 3rd Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	189	0	0	0	119	26	0	0	0	0	0	0	0	0	0	334	
4:05 PM	0	212	0	0	0	142	27	0	0	0	3	0	0	0	0	0	384	
4:10 PM	0	206	0	0	0	168	19	0	0	0	3	0	0	0	0	0	396	
4:15 PM	0	206	0	0	0	148	14	0	0	0	5	0	0	0	0	0	373	
4:20 PM	0	186	0	0	0	149	17	0	0	0	1	0	0	0	0	0	353	
4:25 PM	0	183	0	0	0	161	18	0	0	0	1	0	0	0	0	0	363	
4:30 PM	0	179	0	0	0	154	17	0	0	0	0	0	0	0	0	0	350	
4:35 PM	0	214	0	0	0	156	14	0	0	0	1	0	0	0	0	0	385	
4:40 PM	0	225	0	0	0	144	16	0	0	0	2	0	0	0	0	0	387	
4:45 PM	0	224	0	0	0	188	20	0	0	0	4	0	0	0	0	0	436	
4:50 PM	0	217	0	0	0	166	27	0	0	0	1	0	0	0	0	0	411	
4:55 PM	0	216	0	0	0	177	17	0	0	0	2	0	0	0	0	0	412	4584
5:00 PM	0	234	0	0	0	171	26	0	0	0	2	0	0	0	0	0	433	4683
5:05 PM	0	259	0	0	0	178	28	0	0	0	7	0	0	0	0	0	472	4771
5:10 PM	0	249	0	0	0	176	26	0	0	0	3	0	0	0	0	0	454	4829
5:15 PM	0	227	0	0	0	191	32	0	0	0	4	0	0	0	0	0	454	4910
5:20 PM	0	234	0	0	0	180	28	0	0	0	2	0	0	0	0	0	444	5001
5:25 PM	0	260	0	0	0	160	24	0	0	0	1	0	0	0	0	0	445	5083
5:30 PM	0	245	0	0	0	156	34	0	0	0	1	0	0	0	0	0	436	5169
5:35 PM	0	207	0	0	0	152	46	0	0	0	2	0	0	0	0	0	407	5191
5:40 PM	0	193	0	0	0	132	43	0	0	0	0	0	0	0	0	0	368	5172
5:45 PM	0	211	0	0	0	146	44	0	0	0	1	0	0	0	0	0	402	5138
5:50 PM	0	186	0	0	0	127	58	0	0	0	1	0	0	0	0	0	372	5099
5:55 PM	0	176	0	0	0	123	25	0	0	0	3	0	0	0	0	0	327	5014

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	2940	0	0	0	2180	344	0	0	0	56	0	0	0	0	0	5520
Heavy Trucks	0	40	0		0	40	8		0	0	0		0	0	0		88
Pedestrians		0				0				24				0			24
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 9/22/2011 5:44 PM

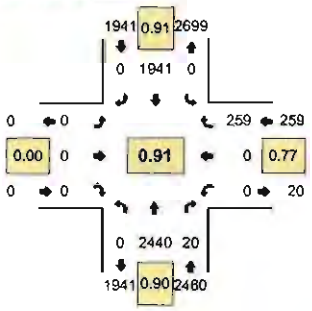
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

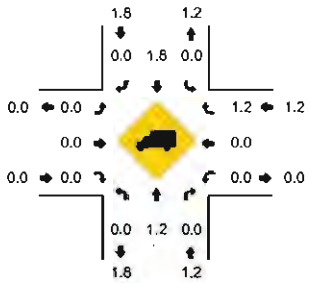
Method for determining peak hour: Total Entering Volume

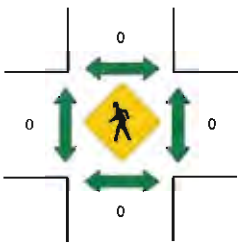
LOCATION: Coburg St -- 4th Ave
CITY/STATE: Eugene, OR

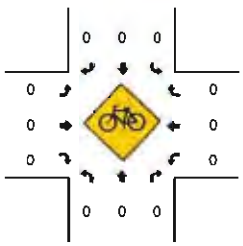
QC JOB #: 10622002
DATE: 5/24/2011

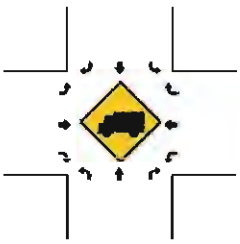


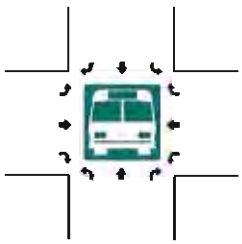
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:15 PM -- 5:30 PM











5-Min Count Period Beginning At	Coburg St (Northbound)				Coburg St (Southbound)				4th Ave (Eastbound)				4th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	172	2	0	0	122	0	0	0	0	0	0	0	0	12	0	308	
4:05 PM	0	203	2	0	0	143	0	0	0	0	0	0	0	0	21	0	369	
4:10 PM	0	212	2	0	0	156	0	0	0	0	0	0	0	0	29	0	399	
4:15 PM	0	212	1	0	0	145	0	0	0	0	0	0	0	0	14	0	372	
4:20 PM	0	148	1	0	0	146	0	0	0	0	0	0	0	0	23	0	318	
4:25 PM	0	181	2	0	0	116	0	0	0	0	0	0	0	0	15	0	314	
4:30 PM	0	172	0	0	0	126	0	0	0	0	0	0	0	0	11	0	309	
4:35 PM	0	169	0	0	0	139	0	0	0	0	0	0	0	0	19	0	327	
4:40 PM	0	194	2	0	0	154	0	0	0	0	0	0	0	0	17	0	367	
4:45 PM	0	187	3	0	0	158	0	0	0	0	0	0	0	0	17	0	365	
4:50 PM	0	177	3	0	0	155	0	0	0	0	0	0	0	0	23	0	358	
4:55 PM	0	181	4	0	0	168	0	0	0	0	0	0	0	0	25	0	378	4184
5:00 PM	0	200	1	0	0	133	0	0	0	0	0	0	0	0	20	0	354	4230
5:05 PM	0	236	1	0	0	152	0	0	0	0	0	0	0	0	21	0	412	4273
5:10 PM	0	186	2	0	0	177	0	0	0	0	0	0	0	0	38	0	405	4279
5:15 PM	0	237	1	0	0	193	0	0	0	0	0	0	0	0	24	0	455	4362
5:20 PM	0	219	0	0	0	164	0	0	0	0	0	0	0	0	22	0	405	4449
5:25 PM	0	224	1	0	0	178	0	0	0	0	0	0	0	0	16	0	419	4554
5:30 PM	0	203	1	0	0	147	0	0	0	0	0	0	0	0	16	0	367	4612
5:35 PM	0	192	1	0	0	162	0	0	0	0	0	0	0	0	20	0	375	4660
5:40 PM	0	208	1	0	0	149	0	0	0	0	0	0	0	0	17	0	375	4668
5:45 PM	0	183	1	0	0	159	0	0	0	0	0	0	0	0	18	0	361	4664
5:50 PM	0	149	0	0	0	165	0	0	0	0	0	0	0	0	16	0	330	4636
5:55 PM	0	182	0	0	0	125	0	0	0	0	0	0	0	0	10	0	317	4575

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	2720	8	0	0	2140	0	0	0	0	0	0	0	0	248	0	5116
Heavy Trucks	0	20	0		0	48	0		0	0	0		0	0	4		72
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

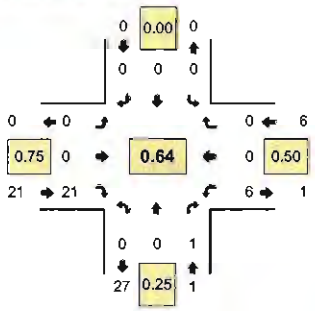
Type of peak hour being reported: User-Defined

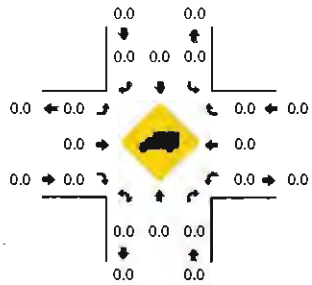
Method for determining peak hour: Total Entering Volume

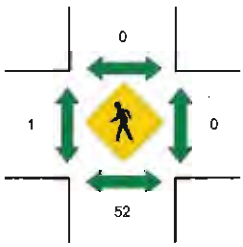
LOCATION: EWEB Parking Lot -- 4th Ave
CITY/STATE: Eugene, OR

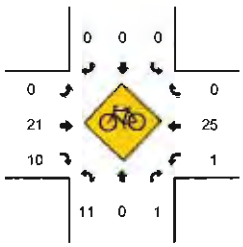
QC JOB #: 10622035
DATE: 5/24/2011

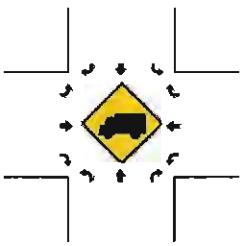
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

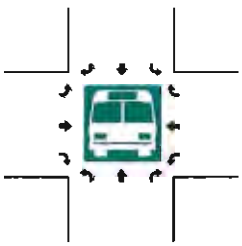












5-Min Count Period Beginning At	EWEB Parking Lot (Northbound)				EWEB Parking Lot (Southbound)				4th Ave (Eastbound)				4th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	5	0	1	0	0	0	6	
4:05 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	
4:10 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	3	
4:20 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
4:30 PM	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	
4:35 PM	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	4	
4:40 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	
4:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	4	
4:50 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
4:55 PM	0	0	1	0	0	0	0	0	0	0	3	0	2	0	0	0	6	42
5:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	39
5:05 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	38
5:10 PM	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	3	34
5:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	5	36
5:20 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	34
5:25 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	34
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	28
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	23
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	4	0	0	0	0	0	0	0	28	0	12	0	0	0	44
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		48				0				4				0			52
Bicycles	3	0	0		0	0	0		0	1	3		1	8	0		16
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:33 PM

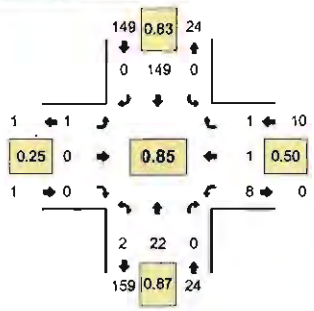
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: User-Defined

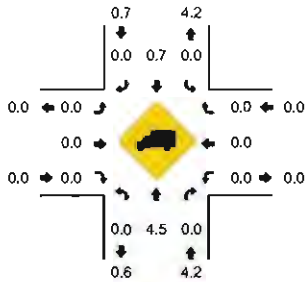
Method for determining peak hour: Total Entering Volume

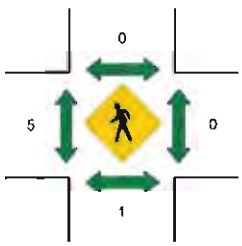
LOCATION: Mill St -- EWEB Parking Lots
CITY/STATE: Eugene, OR

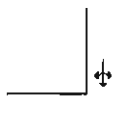
QC JOB #: 10622032
DATE: 5/24/2011

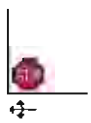


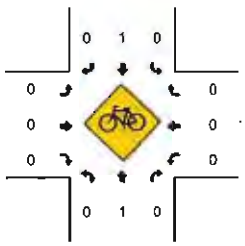
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:55 PM -- 5:10 PM

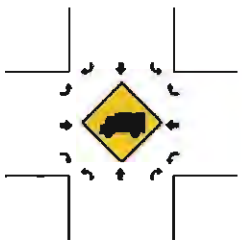


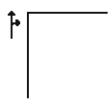


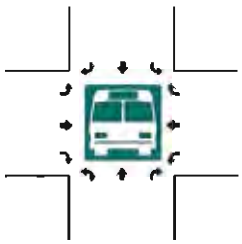












5-Min Count Period Beginning At	Mill St (Northbound)				Mill St (Southbound)				EWEB Parking Lots (Eastbound)				EWEB Parking Lots (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	9	0	0	0	0	0	0	1	0	0	0	10	
4:05 PM	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	7	
4:10 PM	0	1	0	0	0	10	0	0	0	0	0	0	0	0	0	0	11	
4:15 PM	0	1	0	0	0	16	0	0	0	0	0	0	0	0	0	0	17	
4:20 PM	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	10	
4:25 PM	0	1	0	0	0	7	0	0	0	0	0	0	0	0	0	0	8	
4:30 PM	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	7	
4:35 PM	0	2	0	0	0	21	0	0	0	0	0	0	0	0	0	0	23	
4:40 PM	0	2	0	0	0	9	0	0	1	0	0	0	2	0	0	0	14	
4:45 PM	0	3	0	0	0	11	0	0	0	0	0	0	0	0	0	0	14	
4:50 PM	0	1	0	0	0	7	0	0	0	0	0	0	0	0	0	0	8	
4:55 PM	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	17	146
5:00 PM	0	2	0	0	0	13	0	0	0	0	0	0	1	1	0	0	17	153
5:05 PM	0	3	0	2	0	15	0	0	0	0	0	0	0	0	0	0	20	166
5:10 PM	0	2	0	0	0	14	0	0	0	0	0	0	0	0	0	0	16	171
5:15 PM	0	2	0	0	0	12	0	0	0	0	0	0	0	0	0	0	14	168
5:20 PM	0	0	0	0	0	11	0	0	0	0	0	0	0	0	1	0	12	170
5:25 PM	0	1	0	0	0	15	0	0	0	0	0	0	2	0	0	0	18	180
5:30 PM	0	3	0	0	0	12	0	0	0	0	0	0	0	0	0	0	15	188
5:35 PM	0	3	0	0	0	13	0	0	0	0	0	0	3	0	0	0	19	184
5:40 PM	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	11	181
5:45 PM	0	0	1	0	0	9	0	0	0	0	0	0	1	0	0	0	11	178
5:50 PM	0	1	0	0	0	7	0	0	0	0	0	0	0	0	0	0	8	178
5:55 PM	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	12	173

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	20	0	8	0	180	0	0	0	0	0	0	4	4	0	0	216
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		4				0				4				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments: East & West parking lots

Report generated on 6/22/2011 3:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

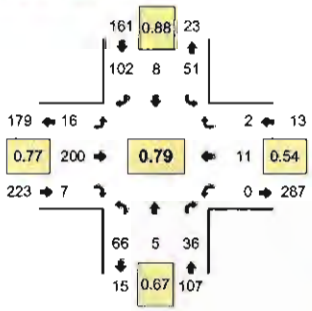
Type of peak hour being reported: User-Defined

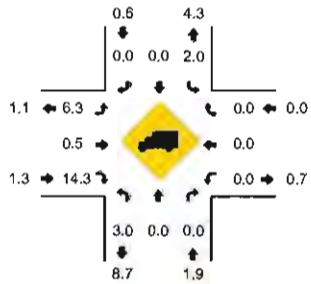
Method for determining peak hour: Total Entering Volume

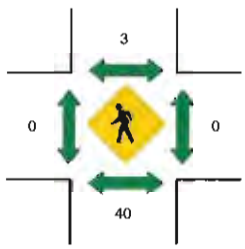
LOCATION: Mill St – 4th Ave
CITY/STATE: Eugene, OR

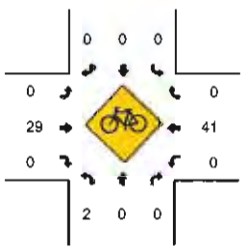
QC JOB #: 10622008
DATE: 5/24/2011

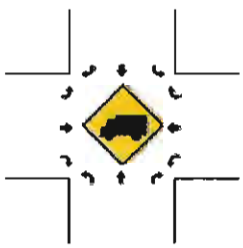
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:55 PM -- 5:10 PM

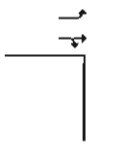


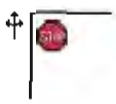


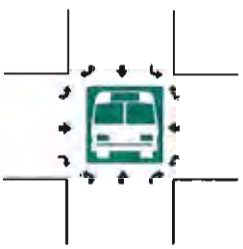












5-Min Count Period Beginning At	Mill St (Northbound)				Mill St (Southbound)				4th Ave (Eastbound)				4th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	0	4	0	3	0	8	0	0	16	0	0	3	0	0	0	42	
4:05 PM	4	0	4	0	3	0	4	0	0	15	0	0	0	1	0	0	31	
4:10 PM	6	0	2	0	4	1	5	0	1	19	0	0	1	1	0	0	40	
4:15 PM	8	1	1	0	6	1	9	0	0	17	3	0	0	1	0	0	47	
4:20 PM	4	0	5	0	3	2	5	0	0	12	0	0	0	0	0	0	31	
4:25 PM	1	1	4	0	0	1	6	0	0	9	0	0	0	2	0	0	24	
4:30 PM	3	0	3	0	1	0	6	0	0	19	0	0	0	1	0	0	33	
4:35 PM	11	0	3	0	6	1	12	0	2	10	1	0	0	0	0	0	46	
4:40 PM	7	1	1	0	1	2	9	0	1	11	1	0	0	2	0	0	36	
4:45 PM	2	2	0	0	7	2	3	0	0	15	1	0	0	0	1	0	33	
4:50 PM	1	0	4	0	2	1	4	0	0	16	2	0	0	2	1	0	33	
4:55 PM	5	0	3	0	3	1	13	0	0	25	0	0	0	1	0	0	51	447
5:00 PM	4	0	4	0	6	0	7	0	2	21	1	0	0	1	0	0	46	451
5:05 PM	17	2	3	0	4	0	12	0	2	19	2	0	0	2	0	0	63	483
5:10 PM	5	0	5	0	8	1	7	0	2	16	0	0	0	0	0	0	44	487
5:15 PM	4	0	4	0	3	0	9	0	2	18	0	0	0	1	0	0	41	481
5:20 PM	7	0	2	0	3	0	8	0	0	16	0	0	0	0	0	0	36	486
5:25 PM	2	0	3	0	6	0	11	0	1	17	0	0	0	1	0	0	41	503
5:30 PM	8	0	5	0	3	1	7	0	3	14	0	0	0	1	0	0	40	510
5:35 PM	6	0	2	0	5	0	12	0	3	12	0	0	0	0	0	0	40	504
5:40 PM	5	0	1	0	2	0	9	0	0	8	0	0	0	1	0	0	26	494
5:45 PM	2	0	2	0	0	0	10	0	1	10	0	0	0	0	0	0	25	486
5:50 PM	0	0	0	0	3	0	5	0	1	11	0	0	0	0	0	0	20	473
5:55 PM	0	0	1	0	3	1	8	0	0	6	1	0	0	0	0	0	20	442

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	104	8	40	0	52	4	128	0	16	260	12	0	0	16	0	0	640
Heavy Trucks	4	0	0		0	0	0		0	4	0		0	0	0		8
Pedestrians		24				8				0				0			32
Bicycles	0	0	0		0	0	0		0	9	0		0	7	0		16
Railroad Stopped Buses																	

Comments: (site driveway and neighborhood street)

Report generated on 6/22/2011 3:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

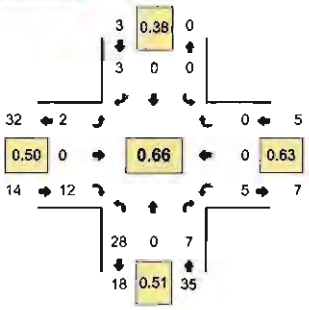
Type of peak hour being reported: User-Defined

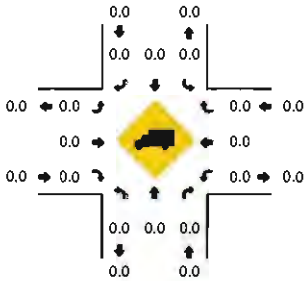
Method for determining peak hour: Total Entering Volume

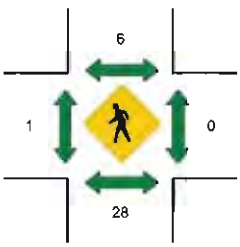
LOCATION: EWEB North & South Overflow Park -- 4th Ave
CITY/STATE: Eugene, OR

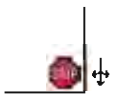
QC JOB #: 10622029
DATE: 5/24/2011

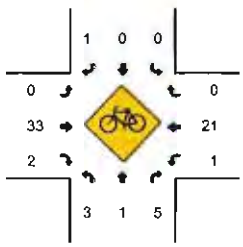
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:25 PM -- 5:40 PM

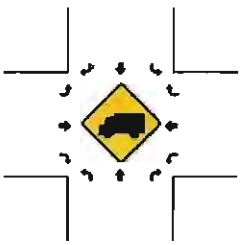


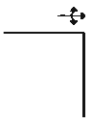


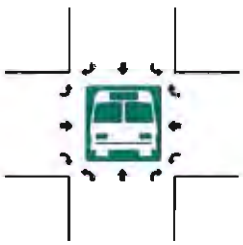












5-Min Count Period Beginning At	EWEB North & South Overflow Park (Northbound)				EWEB North & South Overflow Park (Southbound)				4th Ave (Eastbound)				4th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	4	
4:05 PM	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	
4:10 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:20 PM	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
4:45 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	
4:50 PM	2	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	5	
4:55 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	26
5:00 PM	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3	25
5:05 PM	6	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	9	31
5:10 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	31
5:15 PM	1	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	4	35
5:20 PM	2	0	0	1	0	0	0	0	0	0	1	0	2	0	0	0	6	38
5:25 PM	2	0	1	0	0	0	1	0	0	0	2	0	0	0	0	0	6	44
5:30 PM	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	47
5:35 PM	6	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	10	57
5:40 PM	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	3	59
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
5:55 PM	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	51

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	48	0	20	0	0	0	4	0	0	0	8	4	0	0	0	0	84
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		24				0				4				0			28
Bicycles	1	0	2		0	0	0		0	8	2		1	5	0		19
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

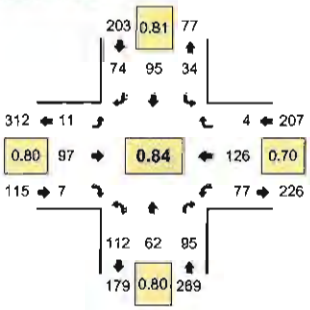
Type of peak hour being reported: User-Defined

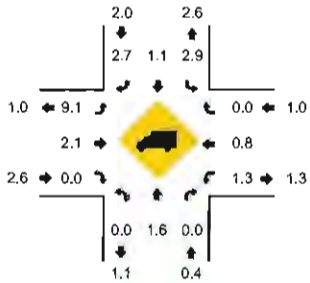
Method for determining peak hour: Total Entering Volume

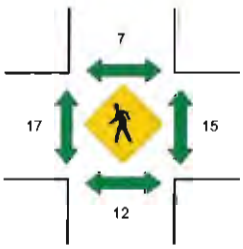
LOCATION: High St -- 4th Ave
CITY/STATE: Eugene, OR

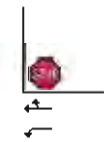
QC JOB #: 10622005
DATE: 5/24/2011

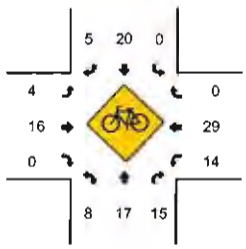
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:55 PM -- 5:10 PM

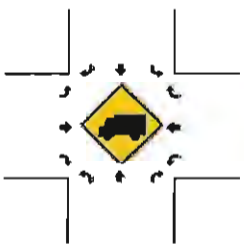


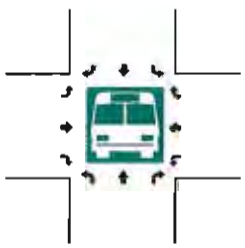












5-Min Count Period Beginning At	High St (Northbound)				High St (Southbound)				4th Ave (Eastbound)				4th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	2	9	0	4	4	3	0	2	7	0	0	3	11	0	0	53	
4:05 PM	1	0	1	0	3	5	9	0	1	8	0	0	3	9	0	0	40	
4:10 PM	11	8	10	0	4	10	3	0	1	9	1	0	4	8	0	0	69	
4:15 PM	3	3	10	0	1	5	3	0	1	10	0	0	6	13	0	0	55	
4:20 PM	2	8	4	0	0	11	9	0	0	7	1	0	6	4	0	0	52	
4:25 PM	4	5	3	0	1	1	3	0	1	6	1	0	5	6	0	0	36	
4:30 PM	10	4	8	0	2	8	4	0	1	10	0	0	3	9	0	0	59	
4:35 PM	6	3	4	0	2	10	5	0	1	6	2	0	7	15	2	0	63	
4:40 PM	7	5	4	0	3	5	2	0	2	6	0	0	7	8	0	0	49	
4:45 PM	1	2	3	0	4	6	6	0	3	9	0	0	2	6	1	0	43	
4:50 PM	8	4	7	0	1	2	8	0	0	11	0	0	1	2	1	0	45	
4:55 PM	9	4	10	0	6	7	3	0	0	13	0	0	6	16	1	0	75	639
5:00 PM	9	5	8	0	8	9	4	0	1	8	0	0	6	7	0	0	65	651
5:05 PM	9	5	11	0	3	13	7	0	0	9	1	0	19	18	1	0	96	707
5:10 PM	10	6	5	0	3	7	7	0	1	9	1	0	2	12	0	0	63	701
5:15 PM	8	6	12	0	0	9	14	0	0	7	1	0	4	14	0	0	75	721
5:20 PM	12	6	9	0	2	10	6	0	0	8	0	0	8	5	0	0	66	735
5:25 PM	10	9	9	0	1	8	5	0	3	8	1	0	2	12	0	0	68	767
5:30 PM	12	4	10	0	2	8	4	0	0	3	1	0	8	9	0	0	81	769
5:35 PM	17	6	7	0	1	11	8	0	1	6	2	0	12	17	0	0	88	794
5:40 PM	4	6	1	0	1	4	1	0	0	4	0	0	4	10	0	0	35	780
5:45 PM	9	4	3	0	3	9	5	0	2	5	0	0	5	4	0	0	49	786
5:50 PM	6	2	7	0	0	10	4	0	0	5	0	0	2	5	0	0	41	782
5:55 PM	4	5	2	0	2	5	4	0	1	3	0	0	3	8	0	0	37	744

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	108	56	116	0	68	116	56	0	4	120	4	0	124	164	8	0	944
Heavy Trucks	0	0	0		4	4	4		0	0	0		0	4	0		16
Pedestrians		8				8				20				20			56
Bicycles	0	4	6		0	3	0		0	4	0		5	6	0		28
Railroad Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

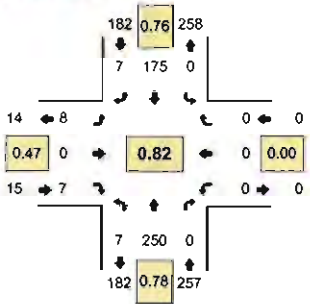
Type of peak hour being reported: User-Defined

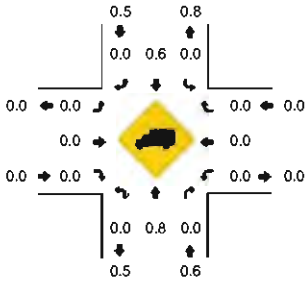
Method for determining peak hour: Total Entering Volume

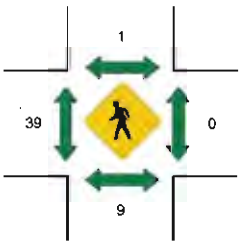
LOCATION: High St -- West Dwy
CITY/STATE: Eugene, OR

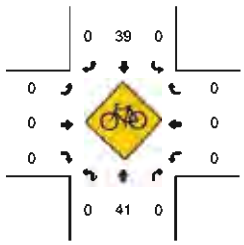
QC JOB #: 10622011
DATE: 5/24/2011

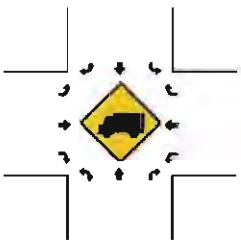
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:25 PM -- 5:40 PM

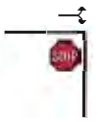


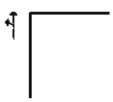


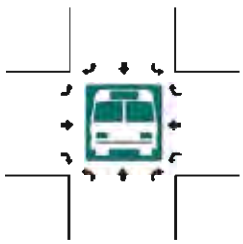












5-Min Count Period Beginning At	High St (Northbound)				High St (Southbound)				West Dwy (Eastbound)				West Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	17	0	0	0	8	0	0	0	0	0	0	0	0	0	0	25	
4:05 PM	0	6	0	0	0	8	0	0	0	0	0	0	0	0	0	0	14	
4:10 PM	0	27	0	0	0	16	0	0	0	0	0	0	0	0	0	0	43	
4:15 PM	0	13	0	0	0	9	0	0	0	0	0	0	0	0	0	0	22	
4:20 PM	1	12	0	0	0	19	2	0	0	0	1	0	0	0	0	0	35	
4:25 PM	2	14	0	0	0	5	1	0	3	0	0	0	0	0	0	0	25	
4:30 PM	0	17	0	0	0	12	0	0	0	0	0	0	0	0	0	0	29	
4:35 PM	0	18	0	0	0	20	0	0	0	0	0	0	0	0	0	0	38	
4:40 PM	1	10	0	0	0	10	2	0	0	0	0	0	0	0	0	0	23	
4:45 PM	1	11	0	0	0	10	0	0	0	0	0	0	0	0	0	0	22	
4:50 PM	2	17	0	0	0	4	0	0	1	0	3	0	0	0	0	0	27	
4:55 PM	0	20	0	0	0	11	0	0	0	0	2	0	0	0	0	0	33	336
5:00 PM	0	20	0	0	0	14	1	0	1	0	1	0	0	0	0	0	37	348
5:05 PM	0	24	0	0	0	33	0	0	0	0	0	0	0	0	0	0	57	391
5:10 PM	0	21	0	0	0	12	0	0	2	0	0	0	0	0	0	0	35	383
5:15 PM	0	22	0	0	0	13	0	0	2	0	0	0	0	0	0	0	37	398
5:20 PM	1	25	0	0	0	17	2	0	0	0	0	0	0	0	0	0	45	408
5:25 PM	1	25	0	0	0	10	2	0	0	0	0	0	0	0	0	0	38	421
5:30 PM	1	29	0	0	0	19	0	0	0	0	0	0	0	0	0	0	49	441
5:35 PM	0	26	0	0	0	22	0	0	2	0	1	0	0	0	0	0	51	454
5:40 PM	0	12	0	0	0	11	0	0	0	0	0	0	0	0	0	0	23	454
5:45 PM	0	15	0	0	0	16	0	0	0	0	1	0	0	0	0	0	32	464
5:50 PM	0	15	0	0	0	11	0	0	0	0	1	0	0	0	0	0	27	464
5:55 PM	0	10	0	0	0	8	0	0	0	0	0	0	0	0	0	0	18	449

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	320	0	0	0	204	8	0	8	0	4	0	0	0	0	0	552
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		4				0				48				0			52
Bicycles	0	14	0		0	12	0		0	0	0		0	0	0		26
Railroad Stopped Buses																	

Comments: West Driveway opposite future site access

Report generated on 6/22/2011 3:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

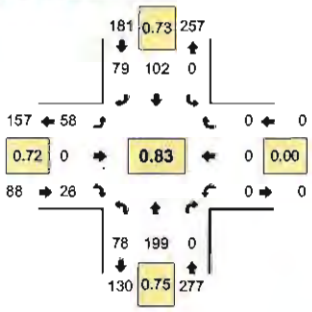
Type of peak hour being reported: User-Defined

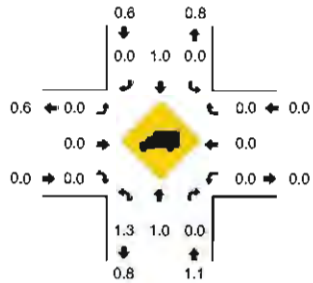
Method for determining peak hour: Total Entering Volume

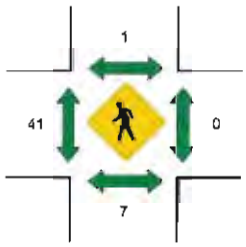
LOCATION: High St -- 5th Ave
CITY/STATE: Eugene, OR

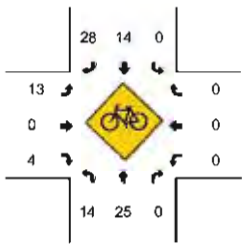
QC JOB #: 10622014
DATE: 5/24/2011

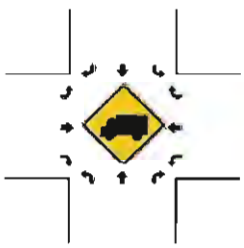
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:20 PM -- 5:35 PM

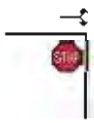


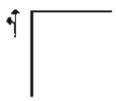


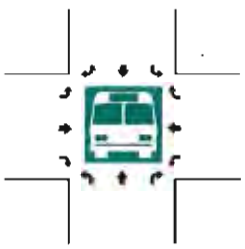












5-Min Count Period Beginning At	High St (Northbound)				High St (Southbound)				5th Ave (Eastbound)				5th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	13	0	0	0	4	5	0	4	0	0	0	0	0	0	0	32	
4:05 PM	1	5	0	0	0	6	3	0	1	0	0	0	0	0	0	0	16	
4:10 PM	6	17	0	0	0	9	5	0	10	0	1	0	0	0	0	0	48	
4:15 PM	8	8	0	0	0	5	4	0	5	0	0	0	0	0	0	0	30	
4:20 PM	6	12	0	0	0	13	5	0	2	0	1	0	0	0	0	0	39	
4:25 PM	6	10	0	0	0	4	2	0	5	0	1	0	0	0	0	0	28	
4:30 PM	2	13	0	0	0	8	4	0	4	0	3	0	0	0	0	0	34	
4:35 PM	5	15	0	0	0	17	3	0	3	0	2	0	0	0	0	0	45	
4:40 PM	3	10	0	0	0	6	3	0	1	0	0	0	0	0	0	0	23	
4:45 PM	2	11	0	0	0	5	5	0	0	0	1	0	0	0	0	0	24	
4:50 PM	4	13	0	0	0	3	4	0	6	0	1	0	0	0	0	0	31	
4:55 PM	4	15	0	0	0	6	8	0	6	0	3	0	0	0	0	0	42	392
5:00 PM	6	19	0	0	0	10	5	0	1	0	7	0	0	0	0	0	48	408
5:05 PM	9	16	0	0	0	21	12	0	8	0	1	0	0	0	0	0	67	459
5:10 PM	12	17	0	0	0	7	3	0	4	0	5	0	0	0	0	0	48	459
5:15 PM	4	16	0	0	0	8	6	0	6	0	1	0	0	0	0	0	41	470
5:20 PM	14	22	0	0	0	9	6	0	3	0	2	0	0	0	0	0	56	487
5:25 PM	5	19	0	0	0	5	7	0	7	0	3	0	0	0	0	0	46	505
5:30 PM	10	22	0	0	0	11	6	0	9	0	4	0	0	0	0	0	62	533
5:35 PM	5	19	0	0	0	11	14	0	7	0	0	0	0	0	0	0	56	544
5:40 PM	6	11	0	0	0	6	5	0	1	0	1	0	0	0	0	0	30	551
5:45 PM	3	11	0	0	0	9	6	0	3	0	1	0	0	0	0	0	33	560
5:50 PM	5	10	0	0	0	10	4	0	5	0	1	0	0	0	0	0	35	564
5:55 PM	5	9	0	0	0	3	5	0	1	0	3	0	0	0	0	0	26	548

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	116	252	0	0	0	100	76	0	76	0	36	0	0	0	0	0	656
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		8				0				64				0			72
Bicycles	7	10	0		0	1	9		5	0	0		0	0	0		32
Railroad																	
Stopped Buses																	

Comments: (T-intersection w/diagonal RR crossing near proposed new intersection)

Report generated on 6/22/2011 3:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

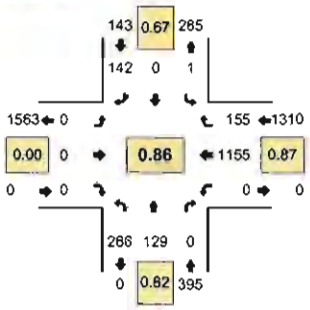
Type of peak hour being reported: User-Defined

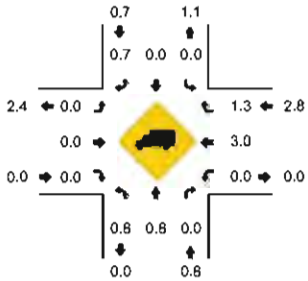
Method for determining peak hour: Total Entering Volume

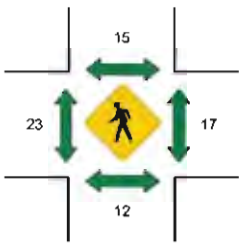
LOCATION: High St -- 6th Ave
CITY/STATE: Eugene, OR

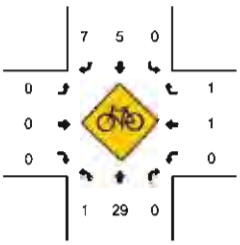
QC JOB #: 10622017
DATE: 5/24/2011

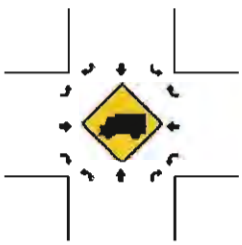
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

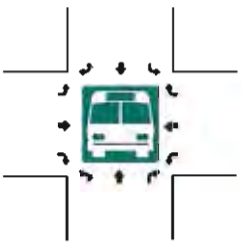












5-Min Count Period Beginning At	High St (Northbound)				High St (Southbound)				6th Ave (Eastbound)				6th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	14	8	0	0	0	0	1	0	0	0	0	0	0	76	11	0	110	
4:05 PM	19	6	0	0	0	0	8	0	0	0	0	0	0	100	9	0	142	
4:10 PM	19	8	0	0	0	0	12	0	0	0	0	0	0	97	8	0	144	
4:15 PM	14	8	0	0	0	0	9	0	0	0	0	0	0	95	8	0	134	
4:20 PM	20	7	0	0	0	0	12	0	0	0	0	0	0	94	10	0	143	
4:25 PM	27	6	0	0	0	0	7	0	0	0	0	0	0	60	8	0	108	
4:30 PM	11	5	0	0	0	0	8	0	0	0	0	0	0	89	9	0	122	
4:35 PM	21	13	0	0	0	0	16	0	0	0	0	0	0	79	9	0	138	
4:40 PM	19	8	0	0	0	0	14	0	0	0	0	0	0	84	12	0	137	
4:45 PM	18	7	0	0	0	0	7	0	0	0	0	0	0	89	5	0	126	
4:50 PM	23	7	0	0	0	0	9	0	0	0	0	0	0	90	10	0	139	
4:55 PM	17	15	0	0	0	0	6	0	0	0	0	0	0	89	9	0	136	1579
5:00 PM	22	11	0	0	0	0	17	1	0	0	0	0	0	101	12	0	164	1633
5:05 PM	24	9	0	0	0	0	16	0	0	0	0	0	0	91	15	0	155	1646
5:10 PM	24	14	0	0	0	0	19	0	0	0	0	0	0	113	13	0	183	1685
5:15 PM	24	9	0	0	0	0	8	0	0	0	0	0	0	115	12	0	168	1719
5:20 PM	27	22	0	0	0	0	13	0	0	0	0	0	0	106	16	0	184	1760
5:25 PM	28	9	0	0	0	0	9	0	0	0	0	0	0	111	15	0	172	1824
5:30 PM	21	11	0	0	0	0	11	0	0	0	0	0	0	88	20	0	151	1853
5:35 PM	19	7	0	0	0	0	13	0	0	0	0	0	0	78	16	0	133	1848
5:40 PM	15	3	0	0	0	0	7	0	0	0	0	0	0	77	12	0	114	1825
5:45 PM	12	4	0	0	0	0	10	0	0	0	0	0	0	82	9	0	117	1816
5:50 PM	12	9	0	0	0	0	8	0	0	0	0	0	0	84	9	0	122	1799
5:55 PM	15	3	0	0	0	0	11	0	0	0	0	0	0	77	8	0	114	1777

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	300	180	0	0	0	0	160	0	0	0	0	0	0	1336	164	0	2140
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	28	0		32
Pedestrians		12				24				24				20			80
Bicycles	0	10	0		0	3	2		0	0	0		0	0	0		15
Railroad Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

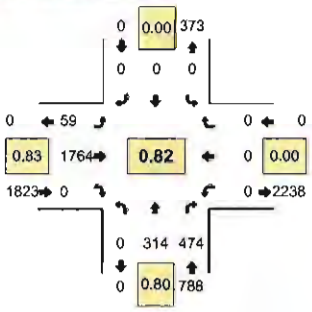
Type of peak hour being reported: User-Defined

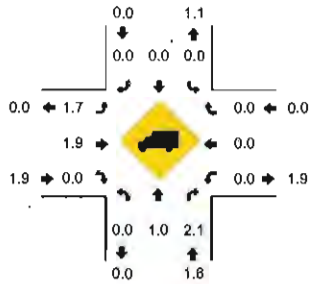
Method for determining peak hour: Total Entering Volume

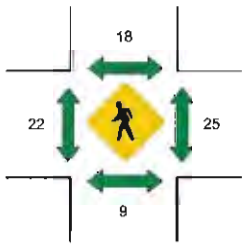
LOCATION: High St -- 7th Ave
CITY/STATE: Eugene, OR

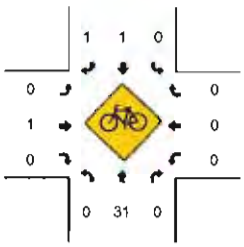
QC JOB #: 10622023
DATE: 5/24/2011

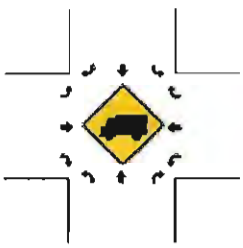
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

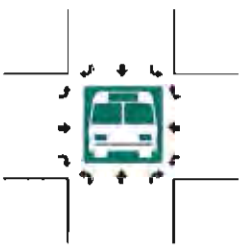












5-Min Count Period Beginning At	High St (Northbound)				High St (Southbound)				7th Ave (Eastbound)				7th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	24	29	0	0	0	0	0	1	127	0	0	0	0	0	0	181	
4:05 PM	0	18	34	0	0	0	0	0	6	161	0	0	0	0	0	0	219	
4:10 PM	0	22	41	0	0	0	0	0	6	128	0	0	0	0	0	0	197	
4:15 PM	0	24	37	0	0	0	0	0	3	132	0	0	0	0	0	0	196	
4:20 PM	0	15	26	0	0	0	0	0	10	122	0	0	0	0	0	0	173	
4:25 PM	0	30	18	0	0	0	0	0	3	121	0	0	0	0	0	0	172	
4:30 PM	0	14	37	0	0	0	0	0	1	112	0	0	0	0	0	0	164	
4:35 PM	0	27	40	0	0	0	0	0	5	143	0	0	0	0	0	0	215	
4:40 PM	0	25	39	0	0	0	0	0	3	134	0	0	0	0	0	0	201	
4:45 PM	0	15	32	0	0	0	0	0	6	125	0	0	0	0	0	0	178	
4:50 PM	0	28	30	0	0	0	0	0	6	156	0	0	0	0	0	0	220	
4:55 PM	0	22	37	0	0	0	0	0	7	134	0	0	0	0	0	0	200	2316
5:00 PM	0	27	42	0	0	0	0	0	8	132	0	0	0	0	0	0	209	2344
5:05 PM	0	30	56	0	0	0	0	0	5	206	0	0	0	0	0	0	297	2422
5:10 PM	0	30	43	0	0	0	0	0	6	159	0	0	0	0	0	0	238	2463
5:15 PM	0	39	49	0	0	0	0	0	3	167	0	0	0	0	0	0	258	2525
5:20 PM	0	26	28	0	0	0	0	0	6	153	0	0	0	0	0	0	213	2565
5:25 PM	0	30	34	0	0	0	0	0	4	126	0	0	0	0	0	0	194	2587
5:30 PM	0	28	39	0	0	0	0	0	4	138	0	0	0	0	0	0	209	2632
5:35 PM	0	14	45	0	0	0	0	0	1	134	0	0	0	0	0	0	194	2611
5:40 PM	0	20	36	0	0	0	0	0	1	115	0	0	0	0	0	0	172	2582
5:45 PM	0	21	28	0	0	0	0	0	3	114	0	0	0	0	0	0	166	2570
5:50 PM	0	11	19	0	0	0	0	0	1	129	0	0	0	0	0	0	160	2510
5:55 PM	0	17	17	0	0	0	0	0	1	100	0	0	0	0	0	0	135	2445

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	396	592	0	0	0	0	0	56	2128	0	0	0	0	0	0	3172
Heavy Trucks	0	4	16		0	0	0		0	44	0		0	0	0		64
Pedestrians		12				28				24				28			92
Bicycles	0	10	0		0	0	0		0	0	0		0	0	0		10
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

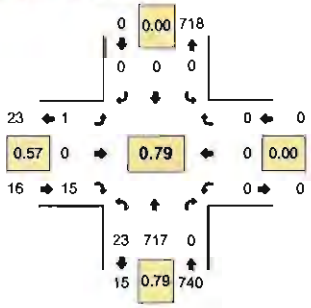
Type of peak hour being reported: User-Defined

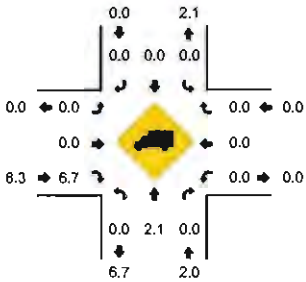
Method for determining peak hour: Total Entering Volume

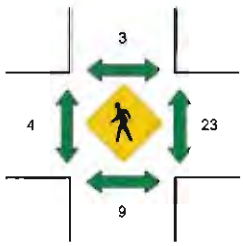
LOCATION: Hilyard St – 8th Ave
CITY/STATE: Eugene, OR

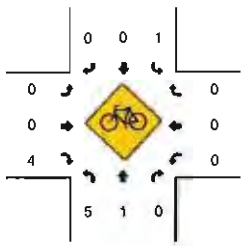
QC JOB #: 10622020
DATE: 5/24/2011

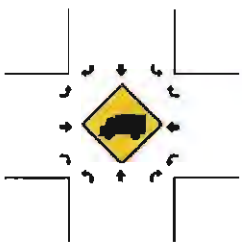
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:05 PM – 5:20 PM

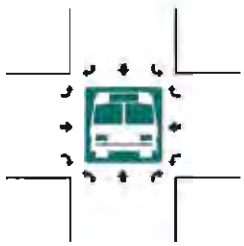












5-Min Count Period Beginning At	Hilyard St (Northbound)				Hilyard St (Southbound)				8th Ave (Eastbound)				8th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	
4:05 PM	4	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	
4:10 PM	4	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	
4:15 PM	3	56	0	0	0	0	0	0	0	0	1	0	0	0	0	0	60	
4:20 PM	1	47	0	0	0	0	0	0	1	0	1	0	0	0	0	0	50	
4:25 PM	3	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	
4:30 PM	2	47	0	0	0	0	0	0	0	0	1	0	0	0	0	0	50	
4:35 PM	2	59	0	0	0	0	0	0	1	0	0	0	0	0	0	0	62	
4:40 PM	4	51	0	0	0	0	0	0	0	0	2	0	0	0	0	0	57	
4:45 PM	4	48	0	0	0	0	0	0	0	0	2	0	0	0	0	0	54	
4:50 PM	2	49	0	0	0	0	0	0	0	0	3	0	0	0	0	0	54	
4:55 PM	1	51	0	0	0	0	0	0	0	0	1	0	0	0	0	0	53	693
5:00 PM	1	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	688
5:05 PM	2	78	0	0	0	0	0	0	0	0	3	0	0	0	0	0	83	702
5:10 PM	3	81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	721
5:15 PM	1	70	0	0	0	0	0	0	1	0	1	0	0	0	0	0	73	734
5:20 PM	1	65	0	0	0	0	0	0	0	0	1	0	0	0	0	0	67	751
5:25 PM	1	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	757
5:30 PM	2	60	0	0	0	0	0	0	0	0	1	0	0	0	0	0	63	770
5:35 PM	1	46	0	0	0	0	0	0	0	0	1	0	0	0	0	0	48	756
5:40 PM	4	59	0	0	0	0	0	0	0	0	1	0	0	0	0	0	64	763
5:45 PM	0	49	0	0	0	0	0	0	0	0	1	0	0	0	0	0	50	759
5:50 PM	2	52	0	0	0	0	0	0	0	0	4	0	0	0	0	0	58	763
5:55 PM	2	42	0	0	0	0	0	0	0	0	2	0	0	0	0	0	46	756

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	916	0	0	0	0	0	0	4	0	16	0	0	0	0	0	960
Heavy Trucks	0	16	0		0	0	0		0	0	0		0	0	0		16
Pedestrians		0				4				4				32			40
Bicycles	2	0	0		1	0	0		0	0	1		0	0	0		4
Railroad Stopped Buses																	

Comments:

Report generated on 6/22/2011 3:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

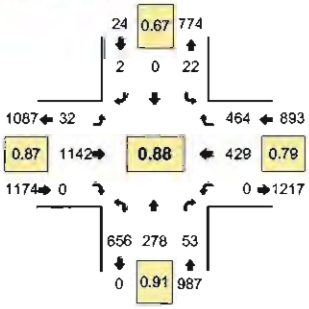
Type of peak hour being reported: User-Defined

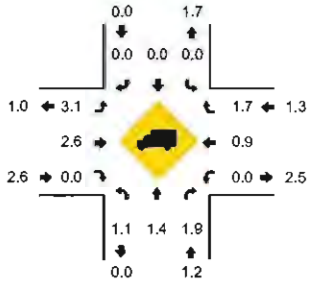
Method for determining peak hour: Total Entering Volume

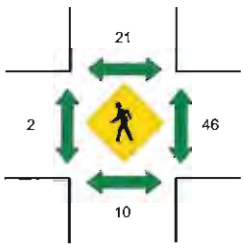
LOCATION: Hilyard St – Broadway
CITY/STATE: Eugene, OR

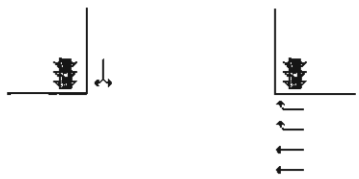
QC JOB #: 10622026
DATE: 5/24/2011

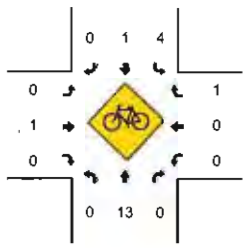
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

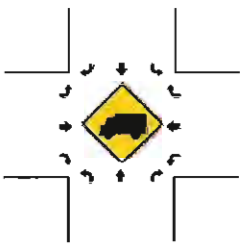


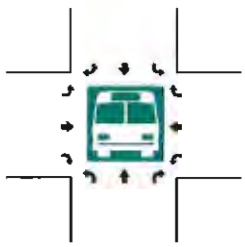












5-Min Count Period Beginning At	Hilyard St (Northbound)				Hilyard St (Southbound)				Broadway (Eastbound)				Broadway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	58	22	4	0	0	0	1	0	5	82	0	0	0	41	43	0	256	
4:05 PM	71	21	3	0	0	0	0	0	4	105	0	0	0	47	46	0	297	
4:10 PM	55	24	2	0	1	0	0	0	6	69	0	0	0	38	42	0	237	
4:15 PM	46	16	7	0	1	0	1	0	5	90	0	0	0	41	38	0	245	
4:20 PM	62	25	5	0	2	0	1	0	4	80	0	0	0	29	25	0	233	
4:25 PM	51	16	4	0	0	0	0	0	2	63	0	0	0	25	37	0	198	
4:30 PM	55	17	7	0	2	0	1	0	4	80	0	0	0	27	28	0	221	
4:35 PM	51	26	3	0	5	1	0	0	2	72	0	0	0	18	40	0	218	
4:40 PM	51	12	7	0	2	0	0	0	3	97	0	0	0	39	42	0	253	
4:45 PM	46	27	4	0	3	0	0	0	3	77	0	0	0	24	25	0	209	
4:50 PM	39	14	3	0	1	0	1	0	3	93	0	0	0	30	34	0	218	
4:55 PM	47	20	2	0	2	0	0	0	2	93	0	0	0	30	31	0	227	2812
5:00 PM	64	27	6	0	0	0	0	0	2	82	0	0	0	36	31	0	248	2804
5:05 PM	50	28	3	0	4	0	0	0	3	105	0	0	0	45	51	0	289	2796
5:10 PM	57	28	4	0	0	0	0	0	3	113	0	0	0	44	57	0	306	2865
5:15 PM	58	28	4	0	1	0	0	0	2	105	0	0	0	41	44	0	283	2903
5:20 PM	60	25	2	0	1	0	0	0	2	114	0	0	0	33	41	0	278	2948
5:25 PM	48	21	6	0	3	0	0	0	3	87	0	0	0	37	45	0	250	3000
5:30 PM	60	21	8	0	4	0	0	0	2	91	0	0	0	31	35	0	252	3031
5:35 PM	76	27	4	0	1	0	1	0	4	85	0	0	0	39	28	0	265	3078
5:40 PM	84	22	8	0	1	0	0	0	4	80	0	0	0	35	35	0	269	3094
5:45 PM	51	18	4	0	2	0	0	0	4	87	0	0	0	27	32	0	225	3110
5:50 PM	60	26	3	0	6	0	0	0	4	94	0	0	0	28	26	0	247	3139
5:55 PM	64	20	8	0	2	0	2	0	2	79	0	0	0	28	27	0	232	3144

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	660	336	44	0	20	0	0	0	32	1292	0	0	0	520	608	0	3512
Heavy Trucks	4	4	0		0	0	0		0	28	0		0	4	8		48
Pedestrians		0				24				0				56			80
Bicycles	0	2	0		1	0	0		0	0	0		0	0	0		3
Railroad																	
Stopped Buses																	

Comments: (site access from south)

Report generated on 6/22/2011 3:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Appendix B
Description of Level-of-Service Methods and Criteria

APPENDIX B LEVEL-OF-SERVICE CONCEPT

Level of service (LOS) is a concept developed to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection or roadway segment. Six grades are used to denote the various level of service from "A" to "F".1

Signalized Intersections

The six level-of-service grades are described qualitatively for signalized intersections in Table B1. Additionally, Table B2 identifies the relationship between level of service and average control delay per vehicle. Control delay is defined to include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Using this definition, Level of Service "D" is generally considered to represent the minimum acceptable design standard.

Table B-1 Level-of-Service Definitions (Signalized Intersections)

Level of Service	Average Delay per Vehicle
A	Very low average control delay, less than 10 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Average control delay is greater than 10 seconds per vehicle and less than or equal to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for a level of service A, causing higher levels of average delay.
C	Average control delay is greater than 20 seconds per vehicle and less than or equal to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Average control delay is greater than 35 seconds per vehicle and less than or equal to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle length, or high volume/capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Average control delay is greater than 55 seconds per vehicle and less than or equal to 80 seconds per vehicle. This is usually considered to be the limit of acceptable delay. These high delay values generally (but not always) indicate poor progression, long cycle lengths, and high volume/capacity ratios. Individual cycle failures are frequent occurrences.
F	Average control delay is in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation. It may also occur at high volume/capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such high delay values.

[1] Most of the material in this appendix is adapted from the Transportation Research Board, Highway Capacity Manual, (2000).

Table B2 Level-of-Service Criteria for Signalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Unsignalized Intersections

Unsignalized intersections include two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections. The 2000 Highway Capacity Manual (HCM) provides models for estimating control delay at both TWSC and AWSC intersections. A qualitative description of the various service levels associated with an unsignalized intersection is presented in Table B3. A quantitative definition of level of service for unsignalized intersections is presented in Table B4. Using this definition, Level of Service "E" is generally considered to represent the minimum acceptable design standard.

Table B3 Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Delay per Vehicle to Minor Street
A	• Nearly all drivers find freedom of operation. • Very seldom is there more than one vehicle in queue.
B	• Some drivers begin to consider the delay an inconvenience. • Occasionally there is more than one vehicle in queue.
C	• Many times there is more than one vehicle in queue. • Most drivers feel restricted, but not objectionably so.
D	• Often there is more than one vehicle in queue. • Drivers feel quite restricted.
E	• Represents a condition in which the demand is near or equal to the probable maximum number of vehicles that can be accommodated by the movement. • There is almost always more than one vehicle in queue. • Drivers find the delays approaching intolerable levels.
F	• Forced flow. • Represents an intersection failure condition that is caused by geometric and/or operational constraints external to the intersection.

Table B4 Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10.0 and ≤ 15.0
C	>15.0 and ≤ 25.0
D	>25.0 and ≤ 35.0
E	>35.0 and ≤ 50.0
F	>50.0

It should be noted that the level-of-service criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, there are a number of driver behavior considerations that combine to make delays at signalized intersections less galling than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, while drivers on the minor street approaches to TWSC intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections than signalized intersections. For these reasons, it is considered that the control delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection. While overall intersection level of service is calculated for AWSC intersections, level of service is only calculated for the minor approaches and the major street left turn movements at TWSC intersections. No delay is assumed to the major street through movements. For TWSC intersections, the overall intersection level of service remains undefined: level of service is only calculated for each minor street lane.

In the performance evaluation of TWSC intersections, it is important to consider other measures of effectiveness (MOEs) in addition to delay, such as v/c ratios for individual movements, average queue lengths, and 95th-percentile queue lengths. By focusing on a single MOE for the worst movement only, such as delay for the minor-street left turn, users may make inappropriate traffic control decisions. The potential for making such inappropriate decisions is likely to be particularly pronounced when the HCM level-of-service thresholds are adopted as legal standards, as is the case in many public agencies.

Appendix C Year 2011 Existing Conditions Level-of-Service Worksheets & Preliminary Signal Warrants

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	121	1290	34	0	2231
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	136	1449	38	0	2507
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	2703	725			1488	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2703	725			1488	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	63			100	
cM capacity (veh/h)	18	363			458	

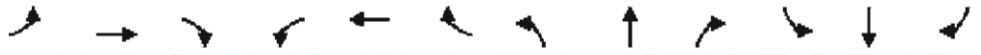
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	136	725	725	38	1253	1253
Volume Left	0	0	0	0	0	0
Volume Right	136	0	0	38	0	0
cSH	363	1700	1700	1700	1700	1700
Volume to Capacity	0.37	0.43	0.43	0.02	0.74	0.74
Queue Length 95th (ft)	42	0	0	0	0	0
Control Delay (s)	20.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s)	20.7	0.0			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	121	12	14	20	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59
Hourly flow rate (vph)	205	20	24	34	0	0
Pedestrians					2	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			227		299	217
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			227		299	217
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1353		685	828

Direction, Lane #	EB 1	WB 1	WB 2
Volume Total	225	24	34
Volume Left	0	24	0
Volume Right	20	0	0
cSH	1700	1353	1700
Volume to Capacity	0.13	0.02	0.02
Queue Length 95th (ft)	0	1	0
Control Delay (s)	0.0	7.7	0.0
Lane LOS		A	
Approach Delay (s)	0.0	3.2	
Approach LOS			

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	15.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Volume (veh/h)	0	0	0	1	0	0	0	20	2	2	114	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	0	0	0	1	0	0	0	29	3	3	163	1
Pedestrians		4									2	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		4.0									4.0	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	205	205	168	199	204	32	168			31		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	205	205	168	199	204	32	168			31		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	750	692	879	761	692	1046	1417			1594		

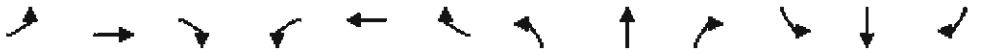
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	1	31	167
Volume Left	0	1	0	3
Volume Right	0	0	3	1
cSH	1700	761	1417	1594
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	9.7	0.0	0.1
Lane LOS	A	A		A
Approach Delay (s)	0.0	9.7	0.0	0.1
Approach LOS	A	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	117	19	8	8	4	15	4	6	10	29	76
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	19	160	26	11	11	5	21	5	8	14	40	104
Pedestrians		2			1			7			3	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	19			193			377	260	181	249	270	19
vC1, stage 1 conf vol							219	219		39	39	
vC2, stage 2 conf vol							159	41		211	232	
vCu, unblocked vol	19			193			377	260	181	249	270	19
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			97	99	99	98	94	90
cM capacity (veh/h)	1606			1384			635	688	861	739	672	1058

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	19	186	11	16	34	158
Volume Left	19	0	11	0	21	14
Volume Right	0	26	0	5	8	104
cSH	1606	1700	1384	1700	687	895
Volume to Capacity	0.01	0.11	0.01	0.01	0.05	0.18
Queue Length 95th (ft)	1	0	1	0	4	16
Control Delay (s)	7.3	0.0	7.6	0.0	10.5	9.9
Lane LOS	A		A		B	A
Approach Delay (s)	0.7		3.0		10.5	9.9
Approach LOS					B	A

Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	23.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	141	37	11	87	1	14	0	9	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	5	188	49	15	116	1	19	0	12	0	0	0
Pedestrians		4						3			2	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	119			240			376	375	216	359	399	123
vC1, stage 1 conf vol							226	226		148	148	
vC2, stage 2 conf vol							149	149		211	251	
vCu, unblocked vol	119			240			376	375	216	359	399	123
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			97	100	99	100	100	100
cM capacity (veh/h)	1479			1335			709	657	827	709	638	929

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	5	237	15	117	31	0
Volume Left	5	0	15	0	19	0
Volume Right	0	49	0	1	12	0
cSH	1479	1700	1335	1700	751	1700
Volume to Capacity	0.00	0.14	0.01	0.07	0.04	0.00
Queue Length 95th (ft)	0	0	1	0	3	0
Control Delay (s)	7.4	0.0	7.7	0.0	10.0	0.0
Lane LOS	A		A		A	A
Approach Delay (s)	0.2		0.9		10.0	0.0
Approach LOS					A	A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	16	111	5	21	78	2	34	50	62	9	33	35
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	20	139	6	26	98	2	42	62	78	11	41	44

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	165	26	100	183	96
Volume Left (vph)	20	26	0	43	11
Volume Right (vph)	6	0	3	78	44
Hadj (s)	0.08	0.50	0.03	-0.17	-0.21
Departure Headway (s)	4.9	5.9	5.4	4.6	4.7
Degree Utilization, x	0.23	0.04	0.15	0.23	0.13
Capacity (veh/h)	681	577	628	735	708
Control Delay (s)	9.4	7.9	8.1	9.0	8.3
Approach Delay (s)	9.4	8.1		9.0	8.3
Approach LOS	A	A		A	A

Intersection Summary			
Delay	8.8		
HCM Level of Service	A		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	4	0	3	153	48	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	6	0	4	212	67	4
Pedestrians	31			14	3	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	3			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				510		
pX, platoon unblocked						
vC, conflicting volume	324	114	102			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	324	114	102			
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)	653	909	1464			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	217	71
Volume Left	6	4	0
Volume Right	0	0	4
cSH	653	1464	1700
Volume to Capacity	0.01	0.00	0.04
Queue Length 95th (ft)	1	0	0
Control Delay (s)	10.6	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	10.6	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	36	3	21	120	20	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	49	4	29	164	27	38
Pedestrians	47			6	2	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	4			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				393		
pX, platoon unblocked						
vC, conflicting volume	317	100	113			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	317	100	113			
tC, single (s)	6.4	6.5	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.6	2.4			
p0 queue free %	92	100	98			
cM capacity (veh/h)	632	839	1323			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	53	193	66
Volume Left	49	29	0
Volume Right	4	0	38
cSH	644	1323	1700
Volume to Capacity	0.08	0.02	0.04
Queue Length 95th (ft)	7	2	0
Control Delay (s)	11.1	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	11.1	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBT	WBR	NBL	NBT	SBR	SWR	SWR2
Lane Configurations							
Volume (vph)	418	55	107	81	21	429	5
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	1.00	1.00	*0.95	
Frpb, ped/bikes	1.00		1.00	1.00	0.97	1.00	
Flpb, ped/bikes	1.00		0.99	1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.86	0.98	
Flt Protected	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (prot)	3271		1513	1749	1537	3295	
Flt Permitted	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (perm)	3271		1513	1749	1537	3295	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.86	0.86
Adj. Flow (vph)	435	57	111	84	22	499	6
RTOR Reduction (vph)	0	0	94	0	19	0	0
Lane Group Flow (vph)	492	0	17	84	3	505	0
Confl. Peds. (#/hr)		6	16		16		
Confl. Bikes (#/hr)	3		3	35	7		
Heavy Vehicles (%)	5%	0%	14%	5%	0%	3%	40%
Turn Type			Perm		custom	custom	
Protected Phases	5			8		6	
Permitted Phases			8		4		
Actuated Green, G (s)	13.0		6.9	6.9	6.9	13.8	
Effective Green, g (s)	13.5		7.4	7.4	7.4	14.3	
Actuated g/C Ratio	0.29		0.16	0.16	0.16	0.30	
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	936		237	274	241	998	
v/s Ratio Prot	c0.15			c0.05		c0.15	
v/s Ratio Perm			0.01		0.00		
v/c Ratio	0.53		0.07	0.31	0.01	0.51	
Uniform Delay, d1	14.2		17.0	17.6	16.8	13.5	
Progression Factor	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2		0.0	0.2	0.0	0.1	
Delay (s)	14.4		17.0	17.9	16.8	13.7	
Level of Service	B		B	B	B	B	
Approach Delay (s)	14.4			17.4			
Approach LOS	B			B			

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	47.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	1207	0	0	0	0	0	144	218	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0						4.0	4.0			
Lane Util. Factor		0.86						0.91	0.91			
Frpb, ped/bikes		1.00						0.99	0.99			
Flpb, ped/bikes		1.00						1.00	1.00			
Frt		1.00						0.94	0.85			
Flt Protected		1.00						1.00	1.00			
Satd. Flow (prot)		5989						2881	1347			
Flt Permitted		1.00						1.00	1.00			
Satd. Flow (perm)		5989						2881	1347			
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	88	1356	0	0	0	0	0	162	245	0	0	0
RTOR Reduction (vph)	0	11	0	0	0	0	0	33	33	0	0	0
Lane Group Flow (vph)	0	1433	0	0	0	0	0	247	94	0	0	0
Confl. Peds. (#/hr)	29		4	4		29	6		1	1		6
Confl. Bikes (#/hr)							1	43				
Heavy Vehicles (%)	3%	5%	0%	0%	0%	0%	0%	11%	4%	0%	0%	0%
Turn Type	Perm								Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		52.5						28.5	28.5			
Effective Green, g (s)		53.0						29.0	29.0			
Actuated g/C Ratio		0.59						0.32	0.32			
Clearance Time (s)		4.5						4.5	4.5			
Vehicle Extension (s)		1.0						1.0	1.0			
Lane Grp Cap (vph)		3527						928	434			
v/s Ratio Prot								c0.09				
v/s Ratio Perm		0.24							0.07			
v/c Ratio		0.41						0.27	0.22			
Uniform Delay, d1		10.0						22.6	22.2			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		0.3						0.7	1.1			
Delay (s)		10.3						23.3	23.4			
Level of Service		B						C	C			
Approach Delay (s)		10.3			0.0			23.3			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	5	17	459	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	6	19	510	0	0
Pedestrians	1			2		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				403		
pX, platoon unblocked						
vC, conflicting volume	294	3	1			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	294	3	1			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	670	1083	1634			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	6	189	340
Volume Left	0	19	0
Volume Right	6	0	0
cSH	1083	1634	1700
Volume to Capacity	0.01	0.01	0.20
Queue Length 95th (ft)	0	1	0
Control Delay (s)	8.3	0.8	0.0
Lane LOS	A	A	
Approach Delay (s)	8.3	0.3	
Approach LOS	A		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	1141	0	0	322	337	431	175	34	13	0	10
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0	-0.5			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91			0.95	0.88	0.91	0.91			1.00	
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Frt	1.00	1.00			1.00	0.85	1.00	0.99			0.94	
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98			0.97	
Satd. Flow (prot)	1744	4866			3387	2558	1541	3133			1608	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98			0.97	
Satd. Flow (perm)	1744	4866			3387	2558	1541	3133			1608	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	33	1342	0	0	379	396	507	206	40	15	0	12
RTOR Reduction (vph)	0	0	0	0	0	251	0	5	0	0	11	0
Lane Group Flow (vph)	33	1342	0	0	379	145	253	495	0	0	16	0
Confl. Peds. (#/hr)	6		4	4		6			10	10		
Confl. Bikes (#/hr)								6		9	1	
Heavy Vehicles (%)	0%	3%	0%	0%	3%	4%	3%	2%	3%	0%	0%	10%
Turn Type	Prot					Perm	Split			Split		
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	2.4	31.6			24.7	24.7	20.7	20.7			2.1	
Effective Green, g (s)	2.9	36.6			25.2	25.2	21.7	21.7			3.1	
Actuated g/C Ratio	0.04	0.53			0.37	0.37	0.31	0.31			0.04	
Clearance Time (s)	4.5	4.5			4.5	4.5	5.0	5.0			5.0	
Vehicle Extension (s)	2.5	2.0			2.0	2.0	2.5	2.5			2.5	
Lane Grp Cap (vph)	73	2585			1239	936	485	987			72	
v/s Ratio Prot	0.02	c0.28			0.11		c0.16	0.16			0.01	
v/s Ratio Perm						0.06						
v/c Ratio	0.45	0.52			0.31	0.15	0.52	0.50			0.22	
Uniform Delay, d1	32.2	10.5			15.6	14.7	19.3	19.2			31.7	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	3.2	0.1			0.1	0.0	0.8	0.3			1.1	
Delay (s)	35.4	10.5			15.7	14.7	20.1	19.5			32.8	
Level of Service	D	B			B	B	C	B			C	
Approach Delay (s)		11.1			15.2			19.7			32.8	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	3.5
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	13	0	1411	2218	228
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	15	0	1585	2492	256
Pedestrians	9					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3294	1255	2501			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3294	1255	2501			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	91	100			
cM capacity (veh/h)	7	164	184			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	15	793	793	1246	1246	256
Volume Left	0	0	0	0	0	0
Volume Right	15	0	0	0	0	256
cSH	164	1700	1700	1700	1700	1700
Volume to Capacity	0.09	0.47	0.47	0.73	0.73	0.15
Queue Length 95th (ft)	7	0	0	0	0	0
Control Delay (s)	29.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	D					
Approach Delay (s)	29.0	0.0		0.0		
Approach LOS	D					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	267	2440	20	0	1941
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	293	2681	22	0	2133
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	3748	1341			2703	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3748	1341			2703	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	0			100	
cM capacity (veh/h)	3	144			154	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	293	1341	1341	22	1066	1066
Volume Left	0	0	0	0	0	0
Volume Right	293	0	0	22	0	0
cSH	144	1700	1700	1700	1700	1700
Volume to Capacity	2.04	0.79	0.79	0.01	0.63	0.63
Queue Length 95th (ft)	585	0	0	0	0	0
Control Delay (s)	542.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	542.9	0.0			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	31.1		
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	266	21	6	13	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	416	33	9	20	0	0
Pedestrians	1				52	
Lane Width (ft)	12.0				0.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			500		524	484
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			500		524	484
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1074		512	587

Direction, Lane #	EB 1	WB 1	WB 2
Volume Total	448	9	20
Volume Left	0	9	0
Volume Right	33	0	0
cSH	1700	1074	1700
Volume to Capacity	0.26	0.01	0.01
Queue Length 95th (ft)	0	1	0
Control Delay (s)	0.0	8.4	0.0
Lane LOS		A	
Approach Delay (s)	0.0	2.6	
Approach LOS			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	1	0	0	8	1	1	2	22	0	0	153	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	0	0	9	1	1	2	26	0	0	180	0
Pedestrians		5						1				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	217	216	186	212	216	26	185			26		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	217	216	186	212	216	26	185			26		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	735	682	857	746	682	1056	1396			1601		

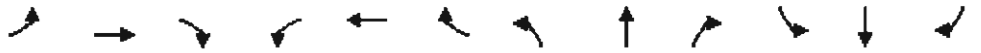
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	12	28	180
Volume Left	1	9	2	0
Volume Right	0	1	0	0
cSH	735	761	1396	1601
Volume to Capacity	0.00	0.02	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	9.9	9.8	0.6	0.0
Lane LOS	A	A	A	
Approach Delay (s)	9.9	9.8	0.6	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	19.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	200	7	0	11	2	66	6	36	51	8	102
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	20	253	9	0	14	3	84	8	46	65	10	129
Pedestrians								40			3	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								3			0	
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	19			302			486	358	298	361	361	18
vC1, stage 1 conf vol							338	338		18	18	
vC2, stage 2 conf vol							148	19		343	343	
vCu, unblocked vol	19			302			486	358	298	361	361	18
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			85	99	94	89	98	88
cM capacity (veh/h)	1567			1228			568	597	722	597	595	1063

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	20	262	0	16	137	204
Volume Left	20	0	0	0	84	65
Volume Right	0	9	0	3	46	129
cSH	1567	1700	1700	1700	613	827
Volume to Capacity	0.01	0.15	0.00	0.01	0.22	0.25
Queue Length 95th (ft)	1	0	0	0	21	24
Control Delay (s)	7.3	0.0	0.0	0.0	12.5	10.8
Lane LOS	A				B	B
Approach Delay (s)	0.5		0.0		12.5	10.8
Approach LOS					B	B

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	216	12	5	174	0	30	0	7	0	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	3	318	18	7	256	0	44	0	10	0	0	4
Pedestrians		1						28			6	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						2			1	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	262			363			636	637	354	610	646	263
vC1, stage 1 conf vol							360	360		277	277	
vC2, stage 2 conf vol							276	277		334	369	
vCu, unblocked vol	262			363			636	637	354	610	646	263
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			92	100	98	100	100	99
cM capacity (veh/h)	1308			1178			562	541	678	577	534	776

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	3	335	7	256	54	4
Volume Left	3	0	7	0	44	0
Volume Right	0	18	0	0	10	4
cSH	1308	1700	1178	1700	580	776
Volume to Capacity	0.00	0.20	0.01	0.15	0.09	0.01
Queue Length 95th (ft)	0	0	0	0	8	0
Control Delay (s)	7.8	0.0	8.1	0.0	11.8	9.7
Lane LOS	A		A		B	A
Approach Delay (s)	0.1		0.2		11.8	9.7
Approach LOS					B	A

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	11	99	7	77	126	4	112	62	96	35	95	74
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	13	118	8	92	150	5	133	74	114	42	113	88

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	139	92	155	321	243
Volume Left (vph)	13	92	0	133	42
Volume Right (vph)	8	0	5	114	88
Hadj (s)	0.03	0.52	-0.01	-0.12	-0.15
Departure Headway (s)	6.1	6.8	6.3	5.3	5.4
Degree Utilization, x	0.24	0.17	0.27	0.48	0.37
Capacity (veh/h)	525	486	528	630	613
Control Delay (s)	10.9	10.0	10.4	13.1	11.6
Approach Delay (s)	10.9	10.3		13.1	11.6
Approach LOS	B	B		B	B

Intersection Summary				
Delay	11.7			
HCM Level of Service	B			
Intersection Capacity Utilization	55.5%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	8	7	7	250	175	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	10	9	9	305	213	9
Pedestrians	39			9	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	3			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				510		
pX, platoon unblocked						
vC, conflicting volume	580	266	261			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	580	266	261			
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	99	99			
cM capacity (veh/h)	461	747	1272			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	18	313	222
Volume Left	10	9	0
Volume Right	9	0	9
cSH	561	1272	1700
Volume to Capacity	0.03	0.01	0.13
Queue Length 95th (ft)	3	1	0
Control Delay (s)	11.6	0.3	0.0
Lane LOS	B	A	
Approach Delay (s)	11.6	0.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	58	28	78	199	103	79
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	70	34	94	240	124	95
Pedestrians	41			7	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	3			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				393		
pX, platoon unblocked	0.96					
vC, conflicting volume	641	220	260			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	602	220	260			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	96	93			
cM capacity (veh/h)	398	792	1265			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	104	334	219
Volume Left	70	94	0
Volume Right	34	0	95
cSH	475	1265	1700
Volume to Capacity	0.22	0.07	0.13
Queue Length 95th (ft)	21	6	0
Control Delay (s)	14.7	2.8	0.0
Lane LOS	B	A	
Approach Delay (s)	14.7	2.8	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBT	WBR	NBL	NBT	SBR	SWR	SWR2
Lane Configurations							
Volume (vph)	720	127	266	129	143	430	29
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	1.00	1.00	*0.95	
Frpb, ped/bikes	0.99		1.00	1.00	0.96	1.00	
Flpb, ped/bikes	1.00		0.98	1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.86	0.98	
Flt Protected	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (prot)	3295		1689	1818	1509	3309	
Flt Permitted	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (perm)	3295		1689	1818	1509	3309	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	837	148	309	150	166	500	34
RTOR Reduction (vph)	0	0	70	0	69	0	0
Lane Group Flow (vph)	985	0	239	150	97	534	0
Confl. Peds. (#/hr)		15	23		23		
Confl. Bikes (#/hr)	1	1	1	29	7		
Heavy Vehicles (%)	3%	2%	1%	1%	1%	3%	3%
Turn Type			Perm		custom	custom	
Protected Phases	5			8		6	
Permitted Phases			8		4		
Actuated Green, G (s)	23.4		14.5	14.5	14.5	15.8	
Effective Green, g (s)	23.9		15.0	15.0	15.0	16.3	
Actuated g/C Ratio	0.36		0.22	0.22	0.22	0.24	
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1172		377	406	337	803	
v/s Ratio Prot	c0.30			0.08		c0.16	
v/s Ratio Perm			c0.14		0.06		
v/c Ratio	0.84		0.63	0.37	0.29	0.67	
Uniform Delay, d1	19.9		23.6	22.1	21.7	23.0	
Progression Factor	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.4		2.6	0.2	0.2	1.6	
Delay (s)	25.3		26.2	22.3	21.8	24.6	
Level of Service	C		C	C	C	C	
Approach Delay (s)	25.3			24.9			
Approach LOS	C			C			

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	67.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	1764	0	0	0	0	0	314	474	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0						4.0	4.0			
Lane Util. Factor		0.86						0.91	0.91			
Frpb, ped/bikes		1.00						0.98	0.95			
Flpb, ped/bikes		1.00						1.00	1.00			
Frt		1.00						0.94	0.85			
Flt Protected		1.00						1.00	1.00			
Satd. Flow (prot)		6177						3029	1330			
Flt Permitted		1.00						1.00	1.00			
Satd. Flow (perm)		6177						3029	1330			
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	72	2151	0	0	0	0	0	383	578	0	0	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	5	5	0	0	0
Lane Group Flow (vph)	0	2218	0	0	0	0	0	655	296	0	0	0
Confl. Peds. (#/hr)	18		9	9		18	22		25	25		22
Confl. Bikes (#/hr)		1						31			1	1
Heavy Vehicles (%)	2%	2%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%
Turn Type	Perm								Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		52.5						28.5	28.5			
Effective Green, g (s)		53.0						29.0	29.0			
Actuated g/C Ratio		0.59						0.32	0.32			
Clearance Time (s)		4.5						4.5	4.5			
Vehicle Extension (s)		1.0						1.0	1.0			
Lane Grp Cap (vph)		3638						976	429			
v/s Ratio Prot								0.22				
v/s Ratio Perm		0.36							c0.22			
v/c Ratio		0.61						0.67	0.69			
Uniform Delay, d1		11.9						26.4	26.6			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		0.8						3.7	8.8			
Delay (s)		12.6						30.1	35.4			
Level of Service		B						C	D			
Approach Delay (s)		12.6			0.0			31.7			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	15	23	717	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	1	19	29	908	0	0
Pedestrians	4			9	3	
Lane Width (ft)	12.0			12.0	0.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				403		
pX, platoon unblocked						
vC, conflicting volume	519	13	4			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	519	13	4			
tC, single (s)	6.8	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	98	98			
cM capacity (veh/h)	481	1036	1625			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	20	332	605
Volume Left	1	29	0
Volume Right	19	0	0
cSH	967	1625	1700
Volume to Capacity	0.02	0.02	0.36
Queue Length 95th (ft)	2	1	0
Control Delay (s)	8.8	0.8	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	0.3	
Approach LOS	A		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	1142	0	0	429	464	656	278	53	22	0	2
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0	-0.5			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91			0.95	0.88	0.91	0.91			1.00	
Frpb, ped/bikes	1.00	1.00			1.00	0.94	1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Frt	1.00	1.00			1.00	0.85	1.00	0.99			0.99	
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98			0.96	
Satd. Flow (prot)	1693	4866			3454	2520	1572	3174			1734	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98			0.96	
Satd. Flow (perm)	1693	4866			3454	2520	1572	3174			1734	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	36	1298	0	0	488	527	745	316	60	25	0	2
RTOR Reduction (vph)	0	0	0	0	0	360	0	4	0	0	2	0
Lane Group Flow (vph)	36	1298	0	0	488	167	372	745	0	0	25	0
Confl. Peds. (#/hr)	21		10	10		21	2		46	46		2
Confl. Bikes (#/hr)		1				1		13		4	1	
Heavy Vehicles (%)	3%	3%	0%	0%	1%	2%	1%	1%	2%	0%	0%	0%
Turn Type	Prot					Perm	Split			Split		
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	4.0	32.0			23.5	23.5	26.8	26.8			2.3	
Effective Green, g (s)	4.5	37.0			24.0	24.0	27.8	27.8			3.3	
Actuated g/C Ratio	0.06	0.49			0.32	0.32	0.37	0.37			0.04	
Clearance Time (s)	4.5	4.5			4.5	4.5	5.0	5.0			5.0	
Vehicle Extension (s)	2.5	2.0			2.0	2.0	2.5	2.5			2.5	
Lane Grp Cap (vph)	101	2382			1097	800	578	1167			76	
v/s Ratio Prot	0.02	c0.27			0.14		c0.24	0.23			0.01	
v/s Ratio Perm						0.07						
v/c Ratio	0.36	0.54			0.44	0.21	0.64	0.64			0.33	
Uniform Delay, d1	34.2	13.4			20.5	18.9	19.8	19.7			35.1	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	1.6	0.1			0.1	0.0	2.2	1.0			1.9	
Delay (s)	35.7	13.6			20.6	18.9	22.0	20.8			36.9	
Level of Service	D	B			C	B	C	C			D	
Approach Delay (s)		14.2			19.7			21.2			36.9	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	3.5
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	31	0	2707	1910	324
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	34	0	2975	2099	356
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	3586	1049	2099			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3586	1049	2099			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	85	100			
cM capacity (veh/h)	4	227	266			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	34	1487	1487	1049	1049	356
Volume Left	0	0	0	0	0	0
Volume Right	34	0	0	0	0	356
cSH	227	1700	1700	1700	1700	1700
Volume to Capacity	0.15	0.87	0.87	0.62	0.62	0.21
Queue Length 95th (ft)	13	0	0	0	0	0
Control Delay (s)	23.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s)	23.6	0.0		0.0		
Approach LOS	C					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

Oregon Department of Transportation

Transportation Development Branch

Transportation Planning Analysis Unit

Preliminary Traffic Signal Warrant Analysis[1]

Major Street:	Coburg Road	**Minor Street:**	4th Avenue
Project:	EWEB Master Plan TIA	**City/County:**	Eugene, OR
Year:	2011	**Alternative:**	Existing Conditions

Preliminary Signal Warrant Volumes

Number of Approach lanes		ADT on major street approaching from both directions		ADT on minor street, highest approaching volume	
Major Street	Minor Street	Percent of standard warrants 100	70	Percent of standard warrants 100	70
Case A: Minimum Vehicular Traffic					
1	1	8850	6200	2650	1850
2 or more	1	10600	7400	2650	1850
2 or more	2 or more	10600	7400	3550	2500
1	2 or more	8850	6200	3550	2500
Case B: Interruption of Continuous Traffic					
1	1	13300	9300	1350	950
2 or more	1	15900	11100	1350	950
2 or more	2 or more	15900	11100	1750	1250
1	2 or more	13300	9300	1750	1250
X	100 percent of standard warrants				
	70 percent of standard warrants[2]				

Preliminary Signal Warrant Calculation

	Street	Number of Lanes	Warrant Volumes	Approach Volumes	Warrant Met
Case A	Major	2	10600	2733333	Y
	Minor	1	2650	151778	
Case B	Major	2	15900	2733333	Y
	Minor	1	1350	151778	

Analyst and Date:	Reviewer and Date:

[1] Meeting preliminary signal warrants does **not** guarantee that a signal will be installed. When preliminary signal warrants are met, project analysts need to coordinate with Region Traffic to initiate the traffic signal engineering investigation as outlined in the Traffic Manual. Before a signal can be installed, the engineering investigation must be conducted or reviewed by the Region Traffic Manager who will forward signal rccommendations to headquarters. Traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a state highway.

[2] Used due to 85th percentile speed in excess of 40 mph or isolated community with population of less than 10,000.

Analysis Procedures Manual
Fcbruary 2009

Appendix D Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Coburg Road @ 3rd Avenue
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2005														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2005 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
FINAL TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

4th Avenue @ Coburg Road
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2009														
REAR-END	0	0	3	3	0	0	0	3	0	3	0	3	0	0
2009 TOTAL	0	0	3	3	0	0	0	3	0	3	0	3	0	0
YEAR: 2008														
REAR-END	0	2	2	4	0	2	0	2	2	4	0	4	0	0
2008 TOTAL	0	2	2	4	0	2	0	2	2	4	0	4	0	0
YEAR: 2007														
REAR-END	0	2	1	3	0	3	0	2	1	3	0	3	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2007 TOTAL	0	2	2	4	0	3	0	3	1	4	0	4	0	0
YEAR: 2005														
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2005 TOTAL	0	0	1	1	0	0	0	0	1	1	0	1	0	0
FINAL TOTAL	0	4	8	12	0	5	0	8	4	12	0	12	0	0

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fawar property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

4th Avenue @ Mill Street
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

4th Avenue @ High Street
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Date File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

5th Avenue @ High Street
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

6th Avenue @ High Street
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2009														
TURNING MOVEMENTS	0	0	2	2	0	0	0	1	1	2	0	2	0	0
2009 TOTAL	0	0	2	2	0	0	0	1	1	2	0	2	0	0
YEAR: 2008														
TURNING MOVEMENTS	0	1	3	4	0	1	0	3	1	1	3	4	0	0
2008 TOTAL	0	1	3	4	0	1	0	3	1	1	3	4	0	0
YEAR: 2007														
ANGLE	0	1	0	1	0	1	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	1	0	0
2007 TOTAL	0	1	1	2	0	1	0	0	2	1	1	2	0	0
YEAR: 2006														
ANGLE	0	1	0	1	0	2	0	1	0	0	1	1	0	0
2006 TOTAL	0	1	0	1	0	2	0	1	0	0	1	1	0	0
YEAR: 2005														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2005 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	3	7	10	0	4	0	6	4	5	5	10	0	0

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

7th Avenue @ High Street
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2009														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2009 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2008														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2008 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2007														
ANGLE	0	0	1	1	0	0	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	0	1	1	0	0
2007 TOTAL	0	0	2	2	0	0	0	1	1	1	1	2	0	0
YEAR: 2006														
ANGLE	0	2	3	5	0	3	0	4	1	4	1	5	0	0
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2006 TOTAL	0	3	4	7	0	4	0	5	2	6	1	7	0	0
YEAR: 2005														
ANGLE	0	1	1	2	0	2	0	2	0	1	1	2	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2005 TOTAL	0	1	2	3	0	2	0	3	0	2	1	3	0	0
FINAL TOTAL	0	5	9	14	0	7	0	11	3	11	3	14	0	0

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

8th Avenue @ Hilyard Street
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Broadway Street @ Hilyard Street
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2009														
ANGLE	0	1	1	2	0	1	0	1	1	2	0	2	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	1	1	2	0	0
2009 TOTAL	0	2	2	4	0	2	0	2	2	3	1	4	0	0
YEAR: 2008														
ANGLE	0	2	1	3	0	2	0	3	0	2	1	3	0	0
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2008 TOTAL	0	2	2	4	0	2	0	4	0	3	1	4	0	0
YEAR: 2007														
ANGLE	0	0	1	1	0	0	0	1	0	0	1	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2007 TOTAL	0	0	2	2	0	0	0	2	0	1	1	2	0	0
YEAR: 2006														
PEDESTRIAN	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2006 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2005														
ANGLE	0	1	2	3	0	1	0	3	0	2	1	3	0	0
2005 TOTAL	0	1	2	3	0	1	0	3	0	2	1	3	0	0
FINAL TOTAL	0	6	8	14	0	6	0	12	2	10	4	14	0	0

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

Appendix E EWEB Development Scenario Trip Generation Estimates

BASE SCENARIO

Land Use	ITE Code	Size	Weekday	Weekday AM			Weekday PM		
				Total	In	Out	Total	In	Out
Existing Office	714	118,000 square feet	940	175	165	10	165	15	150
Internal			*(80)*	*(5)*	*0*	*(5)*	*(5)*	*0*	*(5)*
Townhome/Condo	230	61 units	360	25	5	20	30	20	10
Internal			*(60)*	*0*	*0*	*0*	*(5)*	*(5)*	*0*
Apartment	220	198 units	1,320	100	20	80	125	80	45
Internal			*(220)*	*(15)*	*(5)*	*(10)*	*(20)*	*(10)*	*(10)*
Office	710	40,000 square feet	440	60	55	5	60	10	50
Internal			*(40)*	*0*	*0*	*0*	*0*	*0*	*0*
Retail	820	22,000 square feet	950	25	15	10	80	40	40
Internal			*(130)*	*0*	*0*	*0*	*(10)*	*(5)*	*(5)*
Pass-by (34%)			*(280)*	*(10)*	*(5)*	*(5)*	*(20)*	*(10)*	*(10)*
Restaurant	932	14,000 square feet	1,780	160	85	75	155	90	65
Internal			*(250)*	*(20)*	*(10)*	*(10)*	*(20)*	*(10)*	*(10)*
Pass-by (43%)			*(660)*	*(60)*	*(30)*	*(30)*	*(60)*	*(30)*	*(30)*
		Net New Trips	4,070	**435**	**295**	**140**	**475**	**185**	**290**

The daily trip estimates have been rounded to the nearest 10 trips. The peak hour estimates are rounded to the nearest 5 trips.

MIXED-USE RESIDENTIAL SCENARIO

Land Use	ITE Code	Size	Weekday	Weekday AM			Weekday PM		
				Total	In	Out	Total	In	Out
Existing Office	714	118,000 square feet	940	175	165	10	165	15	150
Internal			*(60)*	*0*	*0*	*0*	*(5)*	*0*	*(5)*
Townhome/Condo	230	96 units	570	40	5	35	50	35	15
Internal			*(60)*	*(5)*	*0*	*(5)*	*(5)*	*(5)*	*0*
Apartment	220	308 units	2,050	155	30	125	190	125	65
Internal			*(230)*	*(15)*	*(10)*	*(5)*	*(20)*	*(10)*	*(10)*
Office	710	85,000 square feet	940	130	115	15	125	20	105
Internal			*(60)*	*(5)*	*0*	*(5)*	*0*	*0*	*0*
Retail	820	22,000 square feet	950	25	15	10	80	40	40
Internal			*(130)*	*0*	*0*	*0*	*(10)*	*(5)*	*(5)*
Pass-by (34%)			*(280)*	*(10)*	*(5)*	*(5)*	*(20)*	*(10)*	*(10)*
Restaurant	932	14,000 square feet	1,780	160	85	75	155	90	65
Internal			*(250)*	*(20)*	*(10)*	*(10)*	*(20)*	*(10)*	*(10)*
Pass-by (43%)			*(660)*	*(60)*	*(30)*	*(30)*	*(60)*	*(30)*	*(30)*
Net New Trips			**5,500**	**570**	**360**	**210**	**625**	**255**	**370**

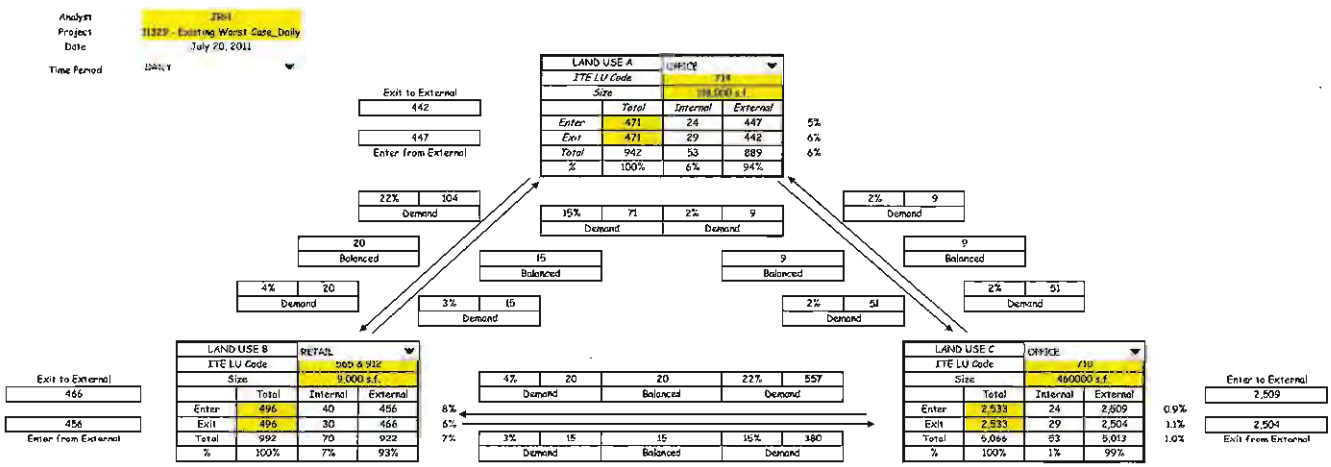
The daily trip estimates have been rounded to the nearest 10 trips. The peak hour estimates are rounded to the nearest 5 trips.

NEW INDUSTRY SCENARIO

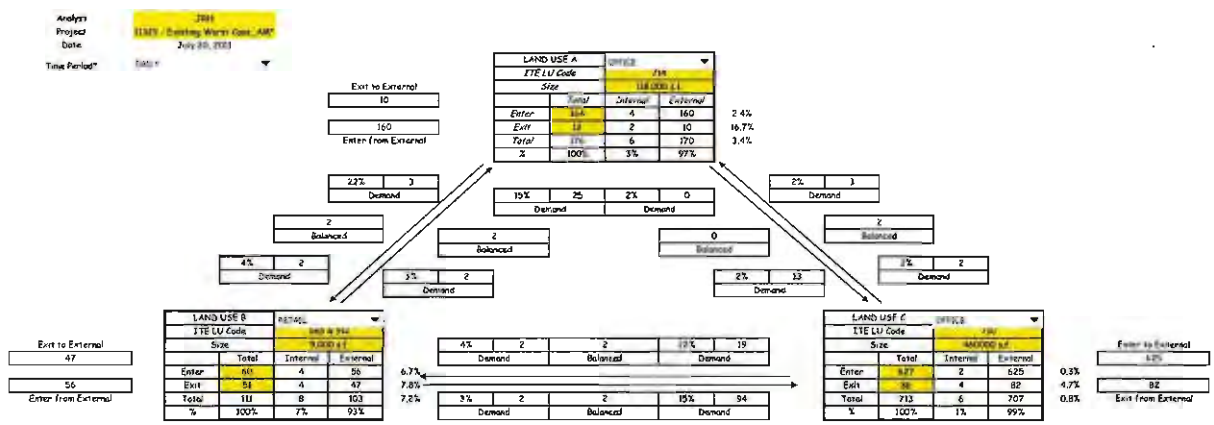
Land Use	ITE Code	Size	Weekday	Weekday AM			Weekday PM		
				Total	In	Out	Total	In	Out
Existing Office	714	118,000 square feet	940	175	165	10	165	15	150
Internal			*(20)*	*0*	*0*	*0*	*0*	*0*	*0*
Townhome/Condo	230	14 units	80	5	0	5	5	5	0
Internal			*(30)*	*0*	*0*	*0*	*0*	*0*	*0*
Apartment	220	71 units	470	35	5	30	45	30	15
Internal			*(170)*	*(10)*	*0*	*(10)*	*(15)*	*(10)*	*(5)*
Office	710	255,000 square feet	2,810	395	350	45	380	65	315
Internal			*(60)*	*0*	*0*	*0*	*(5)*	*0*	*(5)*
Retail	820	28,000 square feet	1,200	25	15	10	105	50	55
Internal			*(140)*	*0*	*0*	*0*	*(10)*	*(5)*	*(5)*
Pass-by (34%)			*(360)*	*(10)*	*(5)*	*(5)*	*(30)*	*(15)*	*(15)*
Restaurant	932	8,000 square feet	1,020	95	50	45	90	55	35
Internal			*(120)*	*(10)*	*(5)*	*(5)*	*(10)*	*(5)*	*(5)*
Pass-by (43%)			*(390)*	*(30)*	*(15)*	*(15)*	*(30)*	*(15)*	*(15)*
Net New Trips			**5,230**	**670**	**560**	**110**	**690**	**170**	**520**

The daily trip estimates have been rounded to the nearest 10 trips. The peak hour estimates are rounded to the nearest 5 trips.

Appendix F Trip Internalization Estimates

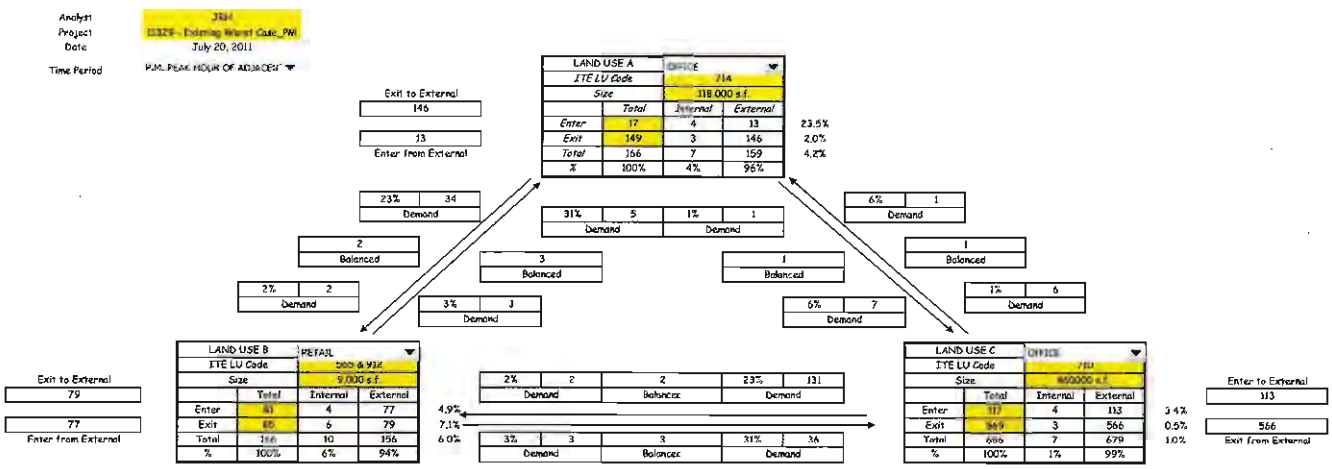


NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT					
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	447	456	2,509	3,412	
Exit	442	466	2,504	3,412	
Total	889	922	5,013	6,824	INTERNAL CAPTURE
Single-Use Trip Gen Est.	942	992	5,066	7,000	3%

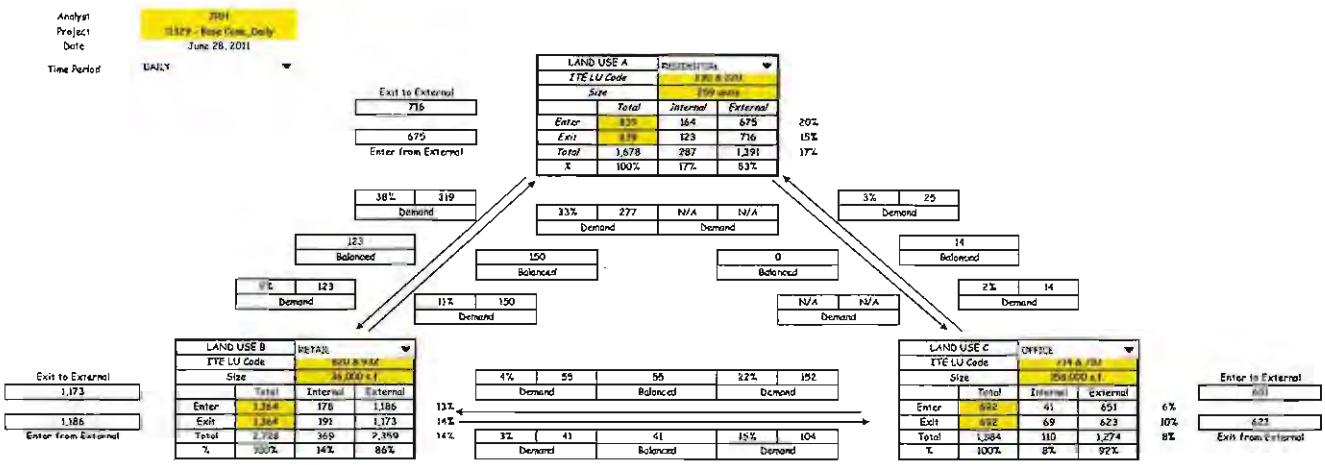


NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT					
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	160	56	625	841	
Exit	10	47	82	139	
Total	170	103	707	980	INTERNAL CAPTURE
Single-Use Trip Gen Est.	176	111	713	1,000	2%

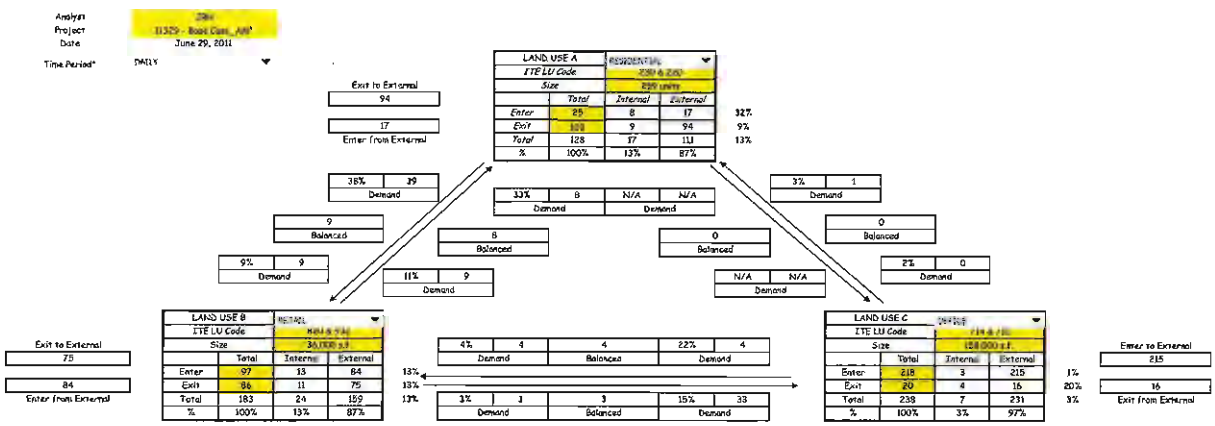
*Daily internalization rates used to estimate AM trips. ITE Trip Generation Manual does not include internalization rates for the AM peak period.



NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT					
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	13	77	113	203	
Exit	146	79	566	791	
Total	159	156	679	994	INTERNAL CAPTURE
Single-Use Trip Gen Est.	166	166	686	1,018	2%



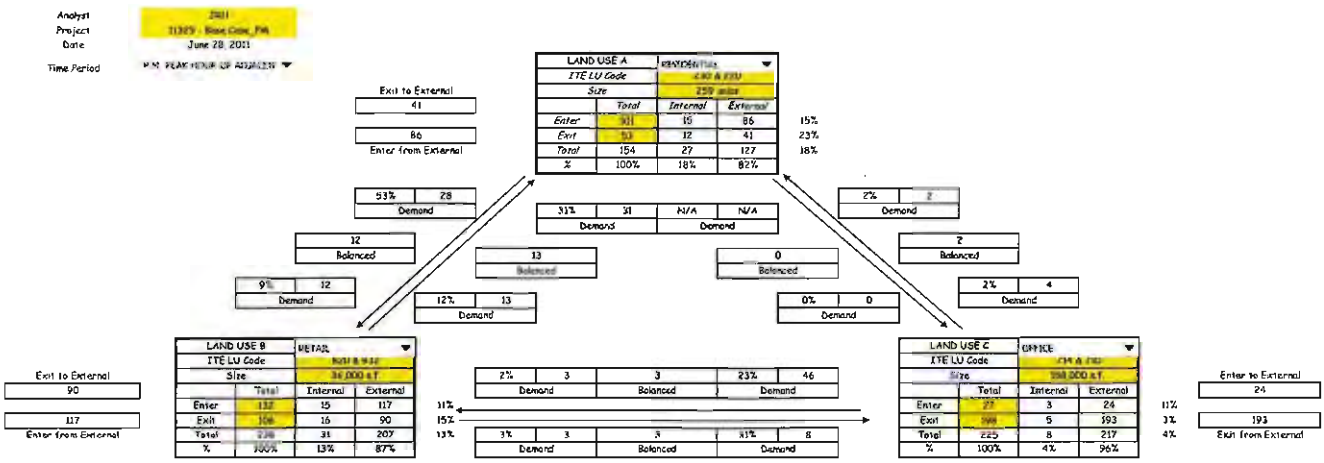
NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT					
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	675	1,186	651	2,512	
Exit	716	1,173	623	2,512	
Total	1,391	2,359	1,274	5,024	INTERNAL CAPTURE
Single-Use Trip Gen Est.	1,678	2,728	1,384	5,790	13%



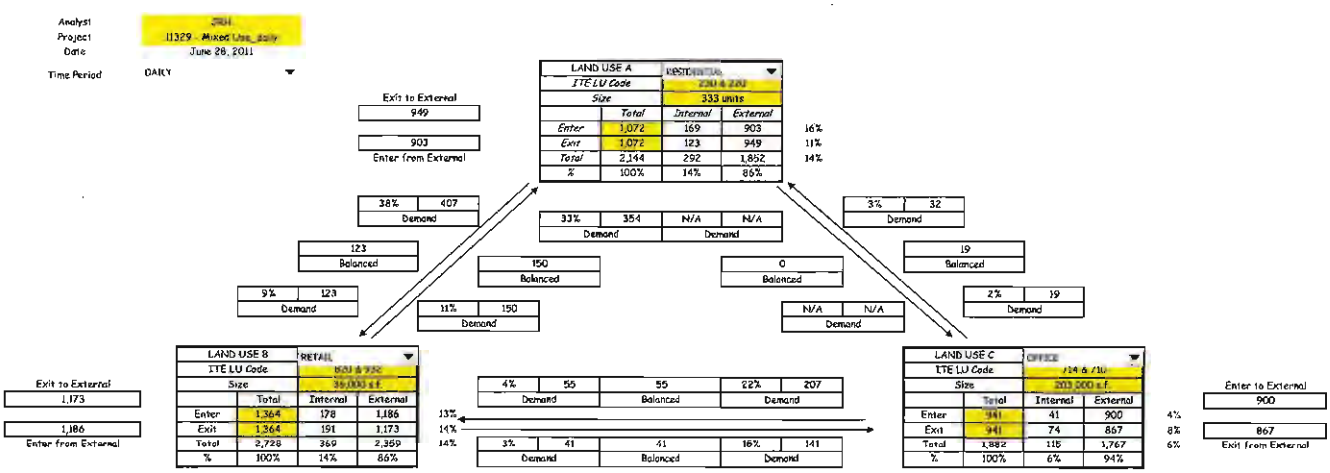
NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT				
	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter	17	84	215	316
Exit	94	75	16	185
Total	111	159	231	501
Single-Use Trip Gen Est.	128	183	238	549

INTERNAL CAPTURE: 9%

*Daily internalization rates used to estimate AM trips. ITE Trip Generation Manual does not include internalization rates for the AM peak period.

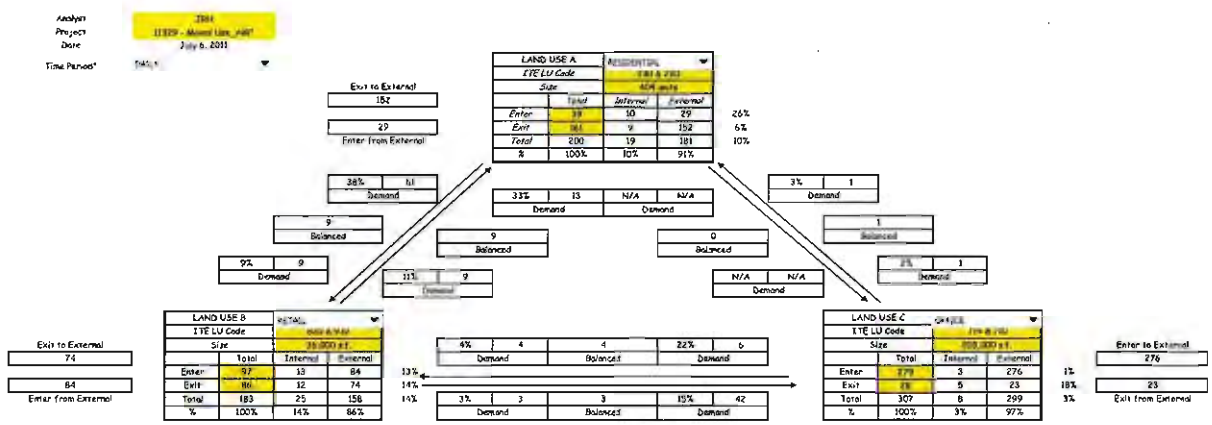


NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT					
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	86	117	24	227	
Exit	41	90	193	324	
Total	127	207	217	551	INTERNAL CAPTURE
Single-Use Trip Gen Est.	154	238	225	617	11%



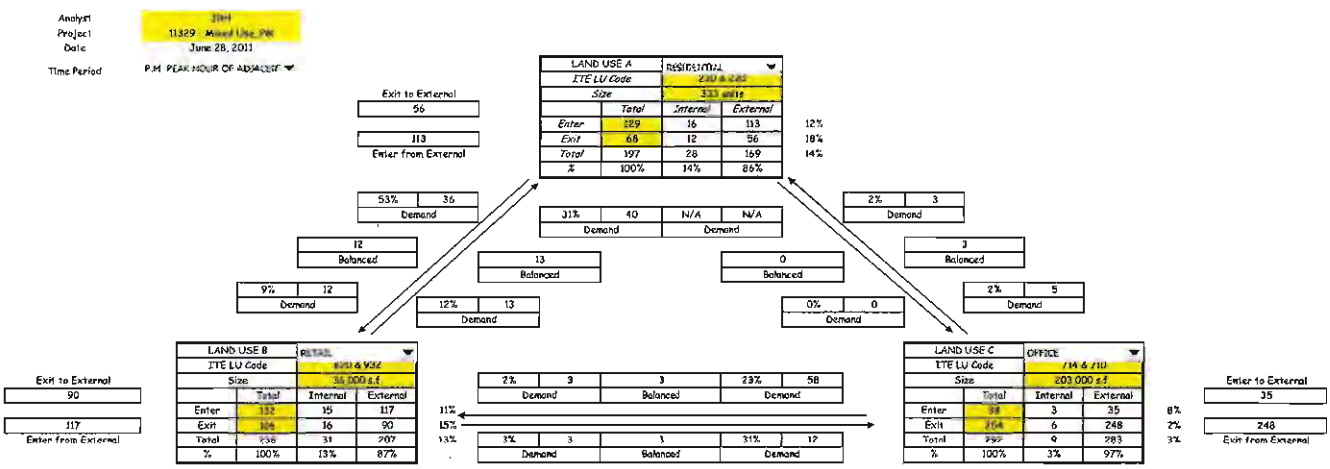
NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT				
	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter	903	1,186	900	2,989
Exit	949	1,173	867	2,989
Total	1,852	2,359	1,767	5,978
Single-Use Trip Gen Est.	2,144	2,728	1,882	6,754

INTERNAL CAPTURE
11%

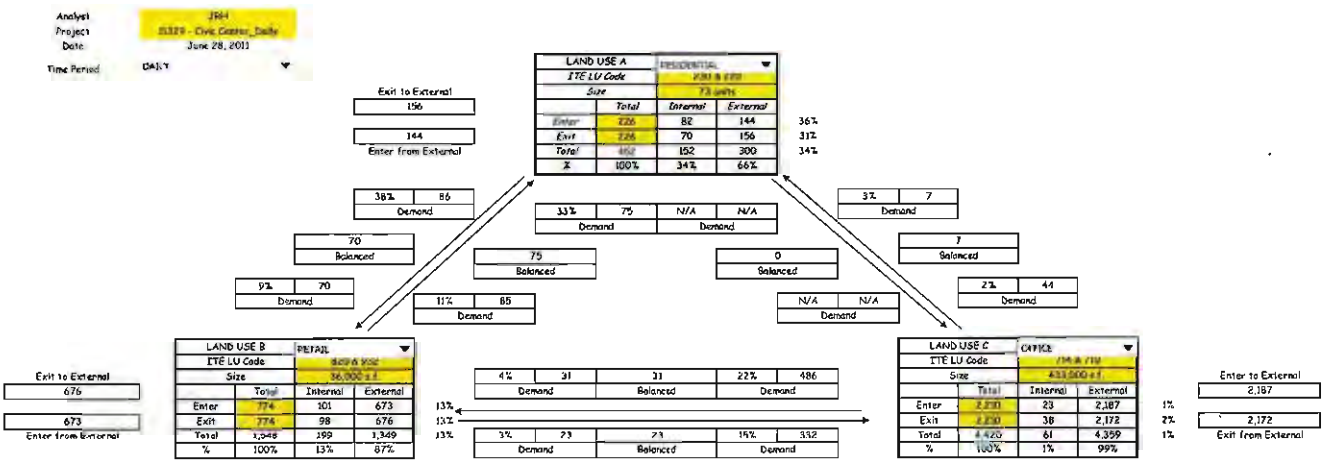


NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT					
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	29	84	276	389	
Exit	152	74	23	249	
Total	181	158	299	638	INTERNAL CAPTURE
Single-Use Trip Gen Est.	200	163	307	690	8%

*Daily internalization rates used to estimate AM trips. ITE Trip Generation Manual does not include internalization rates for the AM peak period.

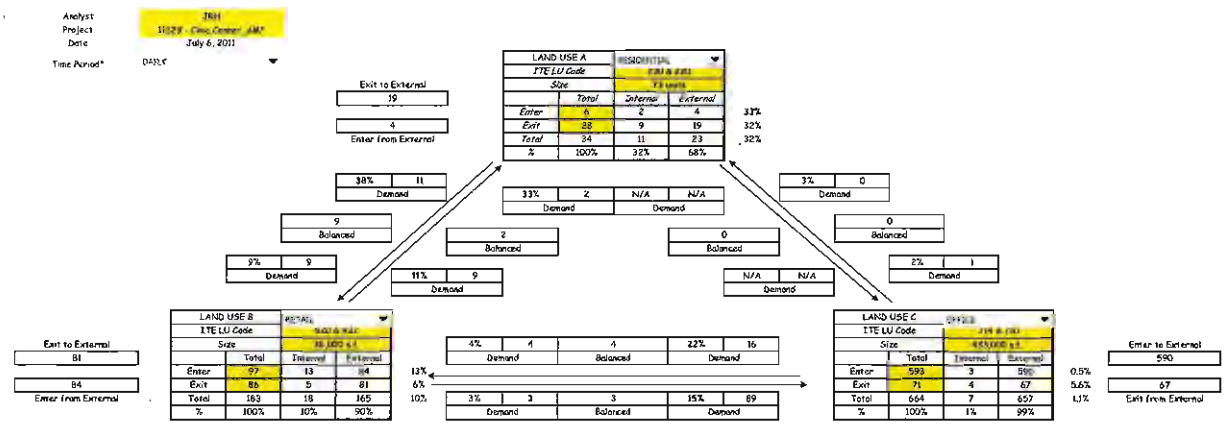


NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT					
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	113	117	35	265	
Exit	56	90	248	394	
Total	169	207	283	659	INTERNAL CAPTURE
Single-Use Trip Gen Est.	197	238	292	727	9%



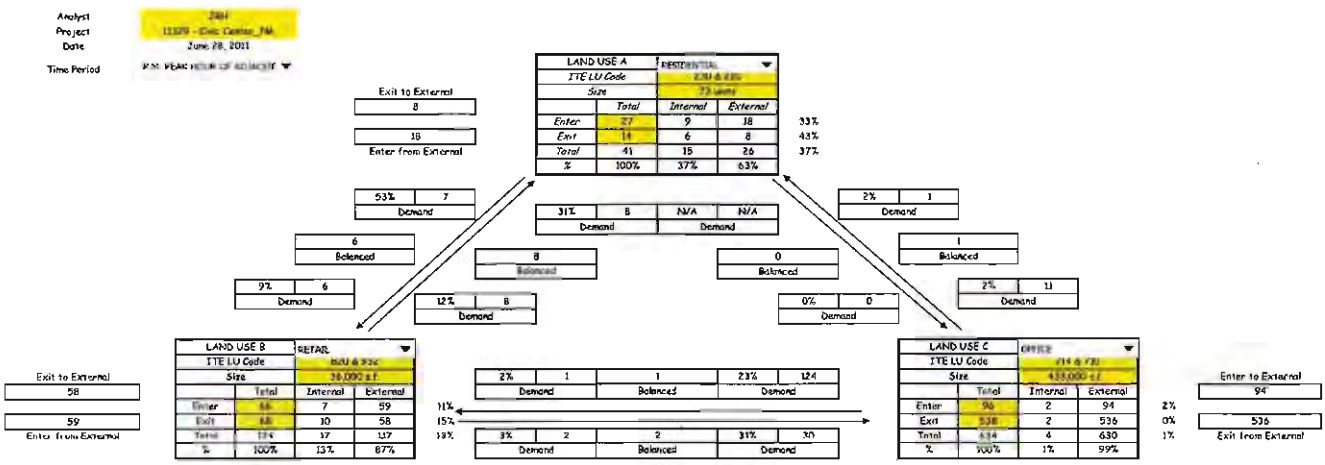
NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT				
	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter	144	673	2,187	3,004
Exit	156	676	2,172	3,004
Total	300	1,349	4,359	6,008
Single-Use Trip Gen Est.	452	1,948	4,420	6,420

INTERNAL CAPTURE
6%



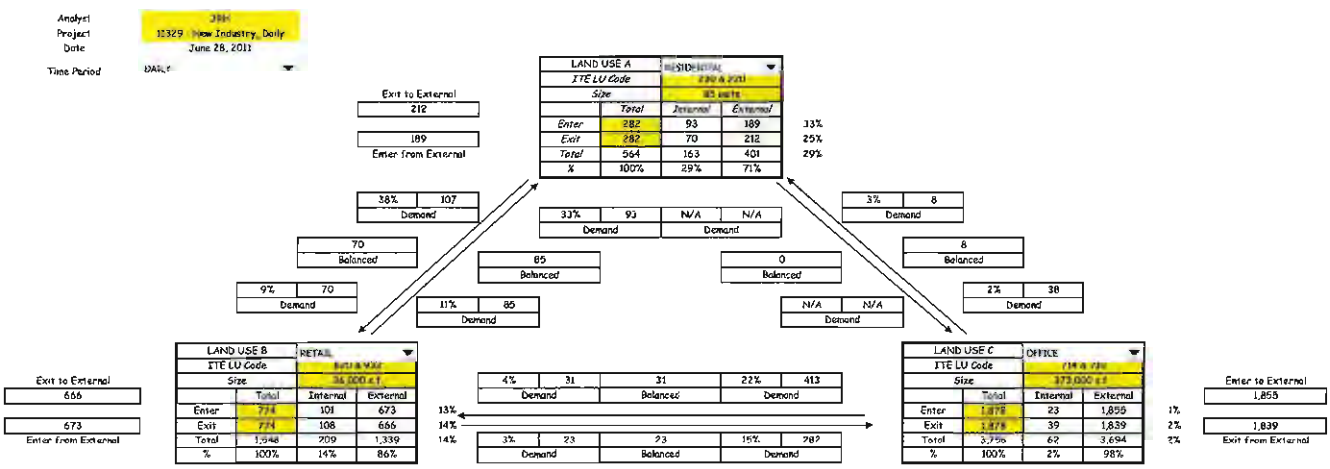
NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT					
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	4	84	590	678	
Exit	19	81	67	167	
Total	23	165	657	845	INTERNAL CAPTURE
Single-Use Trip Gen Est	34	183	664	881	4%

*Daily internalization rates used to estimate AM trips; ITE Trip Generation Manual does not include internalization rates for the AM peak period.

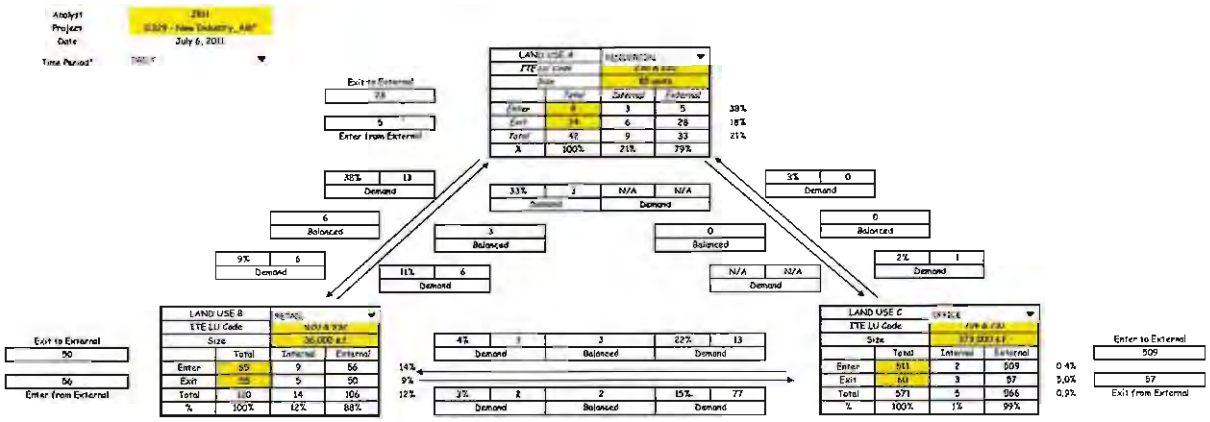


NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT				
	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter	18	59	94	171
Exit	8	58	536	602
Total	26	117	630	773
Single-Use Trip Gen Est.	41	134	634	809

INTERNAL CAPTURE
4%

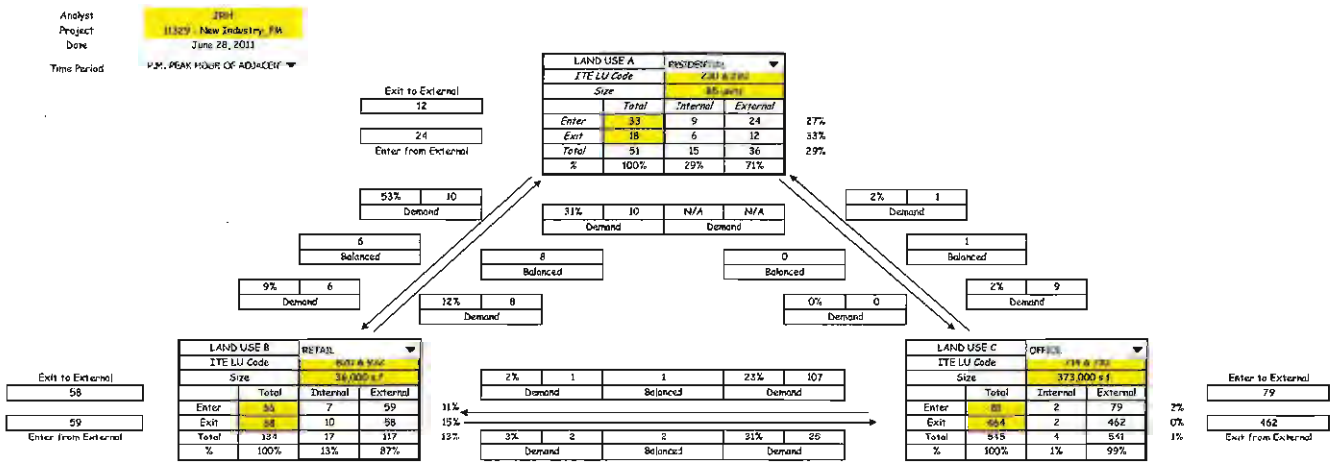


NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT					
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	189	673	1,855	2,717	
Exit	212	666	1,839	2,717	
Total	401	1,339	3,694	5,434	INTERNAL CAPTURE
Single-Use Trip Gen Est.	564	1,548	3,756	5,868	7%



NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT					
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	5	56	509	570	
Exit	28	50	57	135	
Total	33	106	566	705	INTERNAL CAPTURE
Single-Use Trip Gen Est	42	120	573	735	4%

*Daily internalization rates used to estimate AM trips. ITE Trip Generation Manual does not include internalization rates for the AM peak period.



NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT					
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	24	59	79	162	
Exit	12	58	462	532	
Total	36	117	541	694	INTERNAL CAPTURE
Single-Use Trip Gen Est.	51	134	545	730	5%

Appendix G Year 2021 Background Traffic Level-of-Service Worksheets

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑			↑↑
Volume (veh/h)	0	134	1424	38	0	2463
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	151	1600	43	0	2767
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	2984	800			1643	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2984	800			1643	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	53			100	
cM capacity (veh/h)	11	324			399	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	151	800	800	43	1384	1384
Volume Left	0	0	0	0	0	0
Volume Right	151	0	0	43	0	0
cSH	324	1700	1700	1700	1700	1700
Volume to Capacity	0.47	0.47	0.47	0.03	0.81	0.81
Queue Length 95th (ft)	59	0	0	0	0	0
Control Delay (s)	25.4	0.0	0.0	0.0	0.0	0.0
Lane LOS	D					
Approach Delay (s)	25.4	0.0			0.0	
Approach LOS	D					

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	134	12	14	22	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59
Hourly flow rate (vph)	227	20	24	37	0	0
Pedestrians					2	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			249		324	239
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			249		324	239
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1328		662	805

Direction, Lane #	EB 1	WB 1	WB 2
Volume Total	247	24	37
Volume Left	0	24	0
Volume Right	20	0	0
cSH	1700	1328	1700
Volume to Capacity	0.15	0.02	0.02
Queue Length 95th (ft)	0	1	0
Control Delay (s)	0.0	7.8	0.0
Lane LOS		A	
Approach Delay (s)	0.0	3.0	
Approach LOS			

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	15.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	1	0	0	0	22	2	2	126	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	0	0	0	1	0	0	0	31	3	3	180	1
Pedestrians		4									2	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		4.0									4.0	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	225	225	185	219	224	35	185			34		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	225	225	185	219	224	35	185			34		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	728	674	860	738	675	1042	1397			1590		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	1	34	184
Volume Left	0	1	0	3
Volume Right	0	0	3	1
cSH	1700	738	1397	1590
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	9.9	0.0	0.1
Lane LOS	A	A		A
Approach Delay (s)	0.0	9.9	0.0	0.1
Approach LOS	A	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	129	19	8	9	4	15	4	6	11	32	84
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	21	177	26	11	12	5	21	5	8	15	44	115
Pedestrians		2			1			7			3	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	21			210			411	281	198	270	291	20
vC1, stage 1 conf vol							238	238		40	40	
vC2, stage 2 conf vol							173	43		230	251	
vCu, unblocked vol	21			210			411	281	198	270	291	20
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			97	99	99	98	93	89
cM capacity (veh/h)	1604			1365			609	674	843	721	658	1056

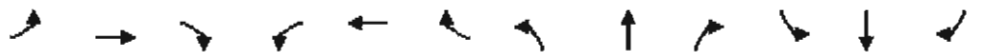
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	21	203	11	18	34	174
Volume Left	21	0	11	0	21	15
Volume Right	0	26	0	5	8	115
cSH	1604	1700	1365	1700	664	886
Volume to Capacity	0.01	0.12	0.01	0.01	0.05	0.20
Queue Length 95th (ft)	1	0	1	0	4	18
Control Delay (s)	7.3	0.0	7.7	0.0	10.7	10.1
Lane LOS	A		A		B	B
Approach Delay (s)	0.7		2.9		10.7	10.1
Approach LOS					B	B

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	24.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	156	37	11	96	1	14	0	9	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	5	208	49	15	128	1	19	0	12	0	0	0
Pedestrians		4						3			2	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	131			260			408	407	236	391	431	135
vC1, stage 1 conf vol							246	246		160	160	
vC2, stage 2 conf vol							161	161		231	271	
vCu, unblocked vol	131			260			408	407	236	391	431	135
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			97	100	99	100	100	100
cM capacity (veh/h)	1464			1313			689	642	806	689	623	915

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	5	257	15	129	31	0
Volume Left	5	0	15	0	19	0
Volume Right	0	49	0	1	12	0
cSH	1464	1700	1313	1700	731	1700
Volume to Capacity	0.00	0.15	0.01	0.08	0.04	0.00
Queue Length 95th (ft)	0	0	1	0	3	0
Control Delay (s)	7.5	0.0	7.8	0.0	10.1	0.0
Lane LOS	A		A		B	A
Approach Delay (s)	0.2		0.8		10.1	0.0
Approach LOS					B	A

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	22.6%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	18	123	6	23	86	2	38	55	68	10	36	39
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	22	154	8	29	108	2	48	69	85	12	45	49

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	184	29	110	201	106
Volume Left (vph)	23	29	0	48	13
Volume Right (vph)	8	0	3	85	49
Hadj (s)	0.08	0.50	0.03	-0.17	-0.21
Departure Headway (s)	5.1	6.0	5.5	4.7	4.8
Degree Utilization, x	0.26	0.05	0.17	0.26	0.14
Capacity (veh/h)	665	563	612	715	683
Control Delay (s)	9.8	8.1	8.4	9.4	8.6
Approach Delay (s)	9.8	8.3		9.4	8.6
Approach LOS	A	A		A	A

Intersection Summary			
Delay	9.1		
HCM Level of Service	A		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	4	0	3	169	53	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	6	0	4	235	74	4
Pedestrians	31			14	3	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	3			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				510		
pX, platoon unblocked						
vC, conflicting volume	353	121	109			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	353	121	109			
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)	629	901	1456			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	239	78
Volume Left	6	4	0
Volume Right	0	0	4
cSH	629	1456	1700
Volume to Capacity	0.01	0.00	0.05
Queue Length 95th (ft)	1	0	0
Control Delay (s)	10.8	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	10.8	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	25.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	40	3	23	132	22	31
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	55	4	32	181	30	42
Pedestrians	47			6	2	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	4			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				393		
pX, platoon unblocked						
vC, conflicting volume	344	104	120			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	344	104	120			
tC, single (s)	6.4	6.5	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.6	2.4			
p0 queue free %	91	100	98			
cM capacity (veh/h)	609	834	1316			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	59	212	73
Volume Left	55	32	0
Volume Right	4	0	42
cSH	620	1316	1700
Volume to Capacity	0.09	0.02	0.04
Queue Length 95th (ft)	8	2	0
Control Delay (s)	11.4	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	11.4	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBT	WBR	NBL	NBT	SBR	SWR	SWR2
Lane Configurations							
Volume (vph)	461	61	118	89	23	474	6
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	1.00	1.00	*0.95	
Frpb, ped/bikes	1.00		1.00	1.00	0.97	1.00	
Flpb, ped/bikes	1.00		0.99	1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.86	0.98	
Flt Protected	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (prot)	3270		1512	1749	1537	3294	
Flt Permitted	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (perm)	3270		1512	1749	1537	3294	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.86	0.86
Adj. Flow (vph)	480	64	123	93	24	551	7
RTOR Reduction (vph)	0	0	101	0	20	0	0
Lane Group Flow (vph)	544	0	22	93	4	558	0
Confl. Peds. (#/hr)		6	16		16		
Confl. Bikes (#/hr)	3		3	35	7		
Heavy Vehicles (%)	5%	0%	14%	5%	0%	3%	40%
Turn Type			Perm		custom	custom	
Protected Phases	5			8		6	
Permitted Phases			8		4		
Actuated Green, G (s)	14.5		8.9	8.9	8.9	14.8	
Effective Green, g (s)	15.0		9.4	9.4	9.4	15.3	
Actuated g/C Ratio	0.29		0.18	0.18	0.18	0.30	
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	949		275	318	279	975	
v/s Ratio Prot	c0.17			c0.05		c0.17	
v/s Ratio Perm			0.01		0.00		
v/c Ratio	0.57		0.08	0.29	0.02	0.57	
Uniform Delay, d1	15.6		17.6	18.3	17.4	15.4	
Progression Factor	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5		0.0	0.2	0.0	0.5	
Delay (s)	16.1		17.6	18.5	17.4	15.9	
Level of Service	B		B	B	B	B	
Approach Delay (s)	16.1			18.0			
Approach LOS	B			B			

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	1333	0	0	0	0	0	159	241	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0						4.0	4.0			
Lane Util. Factor		0.86						0.91	0.91			
Frpb, ped/bikes		1.00						0.99	0.99			
Flpb, ped/bikes		1.00						1.00	1.00			
Frt		1.00						0.94	0.85			
Flt Protected		1.00						1.00	1.00			
Satd. Flow (prot)		5989						2881	1347			
Flt Permitted		1.00						1.00	1.00			
Satd. Flow (perm)		5989						2881	1347			
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	97	1498	0	0	0	0	0	179	271	0	0	0
RTOR Reduction (vph)	0	11	0	0	0	0	0	24	24	0	0	0
Lane Group Flow (vph)	0	1584	0	0	0	0	0	285	117	0	0	0
Confl. Peds. (#/hr)	29		4	4		29	6		1	1		6
Confl. Bikes (#/hr)							1	43				
Heavy Vehicles (%)	3%	5%	0%	0%	0%	0%	0%	11%	4%	0%	0%	0%
Turn Type	Perm								Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		52.5						28.5	28.5			
Effective Green, g (s)		53.0						29.0	29.0			
Actuated g/C Ratio		0.59						0.32	0.32			
Clearance Time (s)		4.5						4.5	4.5			
Vehicle Extension (s)		1.0						1.0	1.0			
Lane Grp Cap (vph)		3527						928	434			
v/s Ratio Prot								c0.10				
v/s Ratio Perm		0.26							0.09			
v/c Ratio		0.45						0.31	0.27			
Uniform Delay, d1		10.3						22.9	22.6			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		0.4						0.9	1.5			
Delay (s)		10.8						23.8	24.2			
Level of Service		B						C	C			
Approach Delay (s)		10.8			0.0			23.9			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	6	19	507	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	7	21	563	0	0
Pedestrians	1			2		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				403		
pX, platoon unblocked						
vC, conflicting volume	325	3	1			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	325	3	1			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	640	1083	1634			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	7	209	376
Volume Left	0	21	0
Volume Right	7	0	0
cSH	1083	1634	1700
Volume to Capacity	0.01	0.01	0.22
Queue Length 95th (ft)	0	1	0
Control Delay (s)	8.3	0.8	0.0
Lane LOS	A	A	
Approach Delay (s)	8.3	0.3	
Approach LOS	A		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	1260	0	0	355	372	476	193	38	14	0	11
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0	-0.5			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91			0.95	0.88	0.91	0.91			1.00	
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Frt	1.00	1.00			1.00	0.85	1.00	0.99			0.94	
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98			0.97	
Satd. Flow (prot)	1744	4866			3387	2556	1541	3133			1607	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98			0.97	
Satd. Flow (perm)	1744	4866			3387	2556	1541	3133			1607	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	36	1482	0	0	418	438	560	227	45	16	0	13
RTOR Reduction (vph)	0	0	0	0	0	276	0	5	0	0	12	0
Lane Group Flow (vph)	36	1482	0	0	418	162	280	547	0	0	17	0
Confl. Peds. (#/hr)	6		4	4		6			10	10		
Confl. Bikes (#/hr)								6		9	1	
Heavy Vehicles (%)	0%	3%	0%	0%	3%	4%	3%	2%	3%	0%	0%	10%
Turn Type	Prot					Perm	Split			Split		
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	3.9	35.7			27.3	27.3	22.9	22.9			2.2	
Effective Green, g (s)	4.4	40.7			27.8	27.8	23.9	23.9			3.2	
Actuated g/C Ratio	0.06	0.54			0.37	0.37	0.32	0.32			0.04	
Clearance Time (s)	4.5	4.5			4.5	4.5	5.0	5.0			5.0	
Vehicle Extension (s)	2.5	2.0			2.0	2.0	2.5	2.5			2.5	
Lane Grp Cap (vph)	102	2630			1250	944	489	994			68	
v/s Ratio Prot	0.02	c0.30			0.12		c0.18	0.17			0.01	
v/s Ratio Perm						0.06						
v/c Ratio	0.35	0.56			0.33	0.17	0.57	0.55			0.24	
Uniform Delay, d1	34.1	11.4			17.1	16.0	21.4	21.3			34.9	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	1.5	0.2			0.1	0.0	1.3	0.5			1.4	
Delay (s)	35.6	11.6			17.1	16.0	22.8	21.8			36.2	
Level of Service	D	B			B	B	C	C			D	
Approach Delay (s)		12.2			16.6			22.1			36.2	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	75.3	Sum of lost time (s)	3.5
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	14	0	1558	2449	252
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	16	0	1751	2752	283
Pedestrians	9					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3636	1385	2761			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3636	1385	2761			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	88	100			
cM capacity (veh/h)	4	134	145			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	875	875	1376	1376	283
Volume Left	0	0	0	0	0	0
Volume Right	16	0	0	0	0	283
cSH	134	1700	1700	1700	1700	1700
Volume to Capacity	0.12	0.51	0.51	0.81	0.81	0.17
Queue Length 95th (ft)	10	0	0	0	0	0
Control Delay (s)	35.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	E					
Approach Delay (s)	35.3	0.0		0.0		
Approach LOS	E					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	293	2694	26	0	2143
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	322	2960	29	0	2355
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	4138	1480			2989	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4138	1480			2989	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	0			100	
cM capacity (veh/h)	2	116			118	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	322	1480	1480	29	1177	1177
Volume Left	0	0	0	0	0	0
Volume Right	322	0	0	29	0	0
cSH	116	1700	1700	1700	1700	1700
Volume to Capacity	2.78	0.87	0.87	0.02	0.69	0.69
Queue Length 95th (ft)	746	0	0	0	0	0
Control Delay (s)	884.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	884.5	0.0			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	50.3		
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	292	21	6	20	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	456	33	9	31	0	0
Pedestrians	1				52	
Lane Width (ft)	12.0				0.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			541		576	525
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			541		576	525
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1038		478	557

Direction, Lane #	EB 1	WB 1	WB 2
Volume Total	489	9	31
Volume Left	0	9	0
Volume Right	33	0	0
cSH	1700	1038	1700
Volume to Capacity	0.29	0.01	0.02
Queue Length 95th (ft)	0	1	0
Control Delay (s)	0.0	8.5	0.0
Lane LOS		A	
Approach Delay (s)	0.0	2.0	
Approach LOS			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Volume (veh/h)	1	0	0	8	1	1	2	24	0	0	169	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	0	0	9	1	1	2	28	0	0	199	0
Pedestrians		5						1				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	239	237	205	233	237	28	204			28		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	239	237	205	233	237	28	204			28		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	712	664	837	722	664	1053	1374			1598		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	12	31	199
Volume Left	1	9	2	0
Volume Right	0	1	0	0
cSH	712	739	1374	1598
Volume to Capacity	0.00	0.02	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	10.1	10.0	0.6	0.0
Lane LOS	B	A	A	
Approach Delay (s)	10.1	10.0	0.6	0.0
Approach LOS	B	A		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	221	7	0	18	2	66	6	36	56	8	113
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	22	276	9	0	22	2	82	8	45	70	10	141
Pedestrians								40			3	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								3			0	
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	28			325			534	394	321	397	397	27
vC1, stage 1 conf vol							366	366		27	27	
vC2, stage 2 conf vol							169	28		370	370	
vCu, unblocked vol	28			325			534	394	321	397	397	27
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			85	99	94	88	98	87
cM capacity (veh/h)	1556			1205			540	579	701	575	577	1052

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	22	285	0	25	135	221
Volume Left	22	0	0	0	82	70
Volume Right	0	9	0	2	45	141
cSH	1556	1700	1700	1700	587	810
Volume to Capacity	0.01	0.17	0.00	0.01	0.23	0.27
Queue Length 95th (ft)	1	0	0	0	22	28
Control Delay (s)	7.3	0.0	0.0	0.0	12.9	11.1
Lane LOS	A				B	B
Approach Delay (s)	0.5		0.0		12.9	11.1
Approach LOS					B	B

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	238	12	5	192	0	30	0	7	0	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	3	350	18	7	282	0	44	0	10	0	0	4
Pedestrians		1						28			6	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						2			1	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	288			396			695	696	387	669	705	289
vC1, stage 1 conf vol							393	393		303	303	
vC2, stage 2 conf vol							302	303		366	402	
vCu, unblocked vol	288			396			695	696	387	669	705	289
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			92	100	98	100	100	99
cM capacity (veh/h)	1279			1147			535	519	650	549	513	750

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	3	368	7	282	54	4
Volume Left	3	0	7	0	44	0
Volume Right	0	18	0	0	10	4
cSH	1279	1700	1147	1700	554	750
Volume to Capacity	0.00	0.22	0.01	0.17	0.10	0.01
Queue Length 95th (ft)	0	0	0	0	8	0
Control Delay (s)	7.8	0.0	8.2	0.0	12.2	9.8
Lane LOS	A		A		B	A
Approach Delay (s)	0.1		0.2		12.2	9.8
Approach LOS					B	A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	12	107	8	85	136	4	124	64	106	39	107	82
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	14	127	10	101	162	5	148	76	126	46	127	98

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	151	101	167	350	271
Volume Left (vph)	14	101	0	148	46
Volume Right (vph)	10	0	5	126	98
Hadj (s)	0.02	0.52	0.00	-0.12	-0.15
Departure Headway (s)	6.4	7.1	6.6	5.6	5.7
Degree Utilization, x	0.27	0.20	0.30	0.54	0.43
Capacity (veh/h)	495	465	493	607	586
Control Delay (s)	11.7	10.6	11.2	14.9	12.9
Approach Delay (s)	11.7	11.0		14.9	12.9
Approach LOS	B	B		B	B

Intersection Summary				
Delay	12.9			
HCM Level of Service	B			
Intersection Capacity Utilization	59.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	8	7	7	286	193	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	10	9	9	349	235	9
Pedestrians	39			9	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	3			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				510		
pX, platoon unblocked						
vC, conflicting volume	645	288	283			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	645	288	283			
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	99	99			
cM capacity (veh/h)	422	726	1249			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	18	357	244
Volume Left	10	9	0
Volume Right	9	0	9
cSH	525	1249	1700
Volume to Capacity	0.03	0.01	0.14
Queue Length 95th (ft)	3	1	0
Control Delay (s)	12.1	0.3	0.0
Lane LOS	B	A	
Approach Delay (s)	12.1	0.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	64	31	86	229	114	87
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	77	37	104	276	137	105
Pedestrians	41			7	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	3			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				393		
pX, platoon unblocked	0.94					
vC, conflicting volume	715	238	283			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	667	238	283			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	95	92			
cM capacity (veh/h)	356	774	1241			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	114	380	242
Volume Left	77	104	0
Volume Right	37	0	105
cSH	432	1241	1700
Volume to Capacity	0.26	0.08	0.14
Queue Length 95th (ft)	26	7	0
Control Delay (s)	16.3	2.8	0.0
Lane LOS	C	A	
Approach Delay (s)	16.3	2.8	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBT	WBR	NBL	NBT	SBR	SWR	SWR2
Lane Configurations							
Volume (vph)	795	140	294	142	145	475	32
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	1.00	1.00	*0.95	
Frpb, ped/bikes	0.99		1.00	1.00	0.96	1.00	
Flpb, ped/bikes	1.00		0.98	1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.86	0.98	
Flt Protected	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (prot)	3295		1686	1818	1507	3309	
Flt Permitted	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (perm)	3295		1686	1818	1507	3309	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	924	163	342	165	169	552	37
RTOR Reduction (vph)	0	0	54	0	54	0	0
Lane Group Flow (vph)	1087	0	288	165	115	589	0
Confl. Peds. (#/hr)		15	23		23		
Confl. Bikes (#/hr)	1	1	1	29	7		
Heavy Vehicles (%)	3%	2%	1%	1%	1%	3%	3%
Turn Type			Perm		custom	custom	
Protected Phases	5			8		6	
Permitted Phases			8		4		
Actuated Green, G (s)	25.3		16.2	16.2	16.2	17.2	
Effective Green, g (s)	25.8		16.7	16.7	16.7	17.7	
Actuated g/C Ratio	0.36		0.23	0.23	0.23	0.25	
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1177		390	421	349	811	
v/s Ratio Prot	c0.33			0.09		c0.18	
v/s Ratio Perm			c0.17		0.08		
v/c Ratio	0.92		0.74	0.39	0.33	0.73	
Uniform Delay, d1	22.3		25.7	23.5	23.1	25.0	
Progression Factor	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.8		6.2	0.2	0.2	2.8	
Delay (s)	34.0		31.9	23.7	23.3	27.8	
Level of Service	C		C	C	C	C	
Approach Delay (s)	34.0			29.2			
Approach LOS	C			C			

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	72.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	1947	0	0	0	0	0	357	523	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0						4.0	4.0			
Lane Util. Factor		0.86						0.91	0.91			
Frpb, ped/bikes		1.00						0.98	0.95			
Flpb, ped/bikes		1.00						1.00	1.00			
Frt		1.00						0.94	0.85			
Flt Protected		1.00						1.00	1.00			
Satd. Flow (prot)		6175						3036	1330			
Flt Permitted		1.00						1.00	1.00			
Satd. Flow (perm)		6175						3036	1330			
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	91	2374	0	0	0	0	0	435	638	0	0	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	3	3	0	0	0
Lane Group Flow (vph)	0	2459	0	0	0	0	0	732	335	0	0	0
Confl. Peds. (#/hr)	18		9	9		18	22		25	25		22
Confl. Bikes (#/hr)		1						31			1	1
Heavy Vehicles (%)	2%	2%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%
Turn Type	Perm								Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		52.5						28.5	28.5			
Effective Green, g (s)		53.0						29.0	29.0			
Actuated g/C Ratio		0.59						0.32	0.32			
Clearance Time (s)		4.5						4.5	4.5			
Vehicle Extension (s)		1.0						1.0	1.0			
Lane Grp Cap (vph)		3636						978	429			
v/s Ratio Prot								0.24				
v/s Ratio Perm		0.40							c0.25			
v/c Ratio		0.68						0.75	0.78			
Uniform Delay, d1		12.6						27.2	27.6			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		1.0						5.2	13.2			
Delay (s)		13.7						32.5	40.9			
Level of Service		B						C	D			
Approach Delay (s)		13.7			0.0			35.1			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	17	25	792	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	1	22	32	1003	0	0
Pedestrians	4			9	3	
Lane Width (ft)	12.0			12.0	0.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				403		
pX, platoon unblocked						
vC, conflicting volume	572	13	4			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	572	13	4			
tC, single (s)	6.8	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	98	98			
cM capacity (veh/h)	445	1036	1625			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	23	366	668
Volume Left	1	32	0
Volume Right	22	0	0
cSH	965	1625	1700
Volume to Capacity	0.02	0.02	0.39
Queue Length 95th (ft)	2	1	0
Control Delay (s)	8.8	0.8	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	0.3	
Approach LOS	A		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	1261	0	0	474	512	724	307	59	24	0	2
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0	-0.5			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91			0.95	0.88	0.91	0.91			1.00	
Frpb, ped/bikes	1.00	1.00			1.00	0.93	1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Frt	1.00	1.00			1.00	0.85	1.00	0.99			0.99	
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98			0.96	
Satd. Flow (prot)	1693	4866			3454	2505	1572	3172			1735	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98			0.96	
Satd. Flow (perm)	1693	4866			3454	2505	1572	3172			1735	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	40	1433	0	0	539	582	823	349	67	27	0	2
RTOR Reduction (vph)	0	0	0	0	0	390	0	4	0	0	2	0
Lane Group Flow (vph)	40	1433	0	0	539	192	411	824	0	0	27	0
Confl. Peds. (#/hr)	21		10	10		21	2		46	46		2
Confl. Bikes (#/hr)		1				1		13		4	1	
Heavy Vehicles (%)	3%	3%	0%	0%	1%	2%	1%	1%	2%	0%	0%	0%
Turn Type	Prot					Perm	Split			Split		
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	4.2	36.2			27.5	27.5	30.6	30.6			3.7	
Effective Green, g (s)	4.7	41.2			28.0	28.0	31.6	31.6			4.7	
Actuated g/C Ratio	0.06	0.48			0.33	0.33	0.37	0.37			0.06	
Clearance Time (s)	4.5	4.5			4.5	4.5	5.0	5.0			5.0	
Vehicle Extension (s)	2.5	2.0			2.0	2.0	2.5	2.5			2.5	
Lane Grp Cap (vph)	94	2359			1138	825	584	1179			96	
v/s Ratio Prot	0.02	c0.29			0.16		c0.26	0.26			0.02	
v/s Ratio Perm						0.08						
v/c Ratio	0.43	0.61			0.47	0.23	0.70	0.70			0.28	
Uniform Delay, d1	38.8	16.0			22.6	20.7	22.7	22.7			38.5	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	2.2	0.3			0.1	0.1	3.6	1.7			1.2	
Delay (s)	41.1	16.3			22.8	20.7	26.3	24.3			39.7	
Level of Service	D	B			C	C	C	C			D	
Approach Delay (s)		17.0			21.7			25.0			39.7	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	3.5
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	34	0	2987	2109	358
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	37	0	3282	2318	393
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	3959	1159	2318			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3959	1159	2318			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	81	100			
cM capacity (veh/h)	2	192	218			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	37	1641	1641	1159	1159	393
Volume Left	0	0	0	0	0	0
Volume Right	37	0	0	0	0	393
cSH	192	1700	1700	1700	1700	1700
Volume to Capacity	0.19	0.97	0.97	0.68	0.68	0.23
Queue Length 95th (ft)	17	0	0	0	0	0
Control Delay (s)	28.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	D					
Approach Delay (s)	28.2	0.0		0.0		
Approach LOS	D					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

Appendix H Conceptual 8th Avenue/Hilyard Street Intersection Improvement

CONCEPTUAL 8TH AVENUE / HILYARD STREET INTERSECTION IMPROVEMENT
EUGENE, OREGON

FIG. H-1

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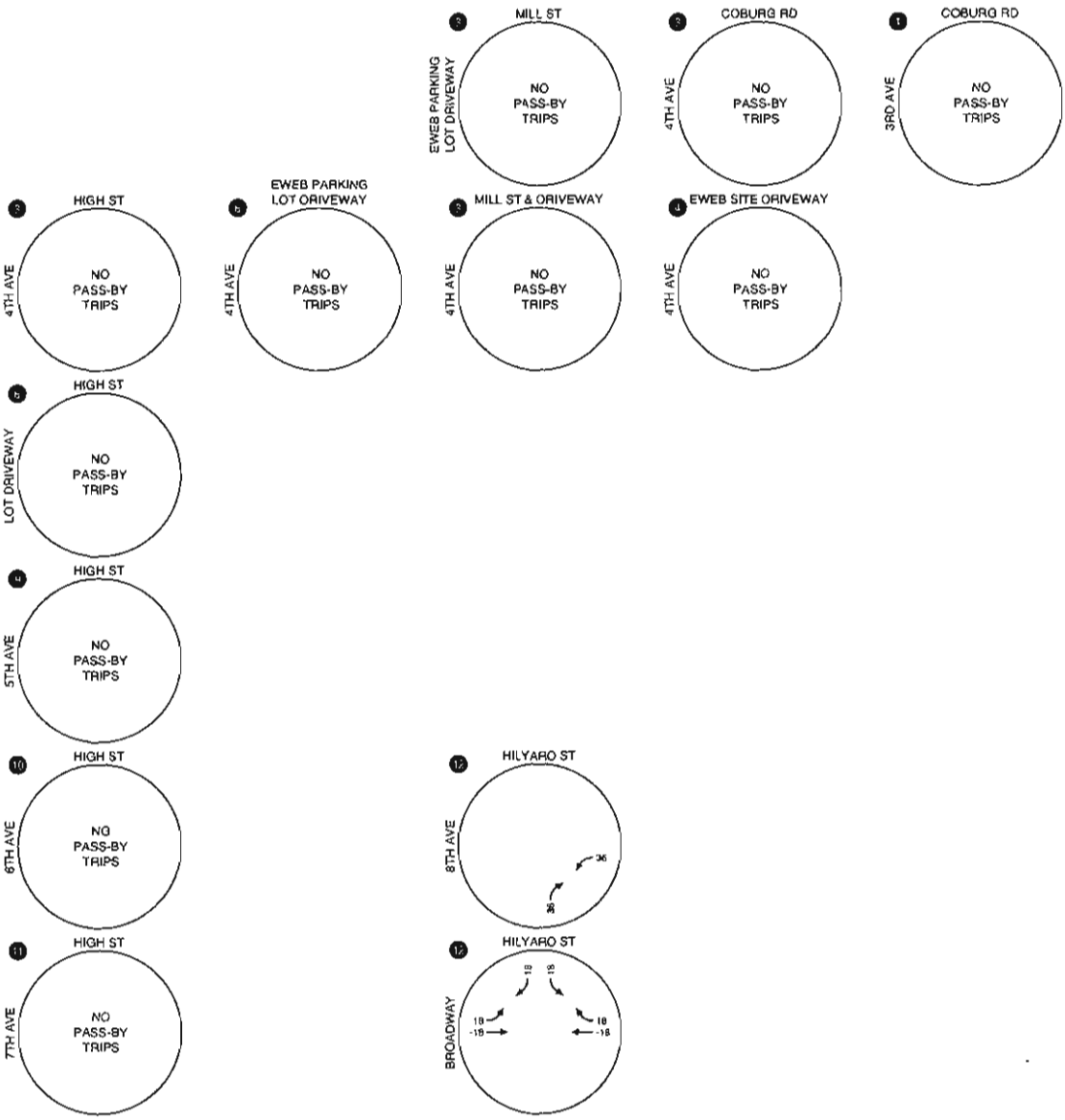
Appendix I Pass-By Trip Assignment



NOTE: REMAINING PASS-BY TRIPS OCCUR INTERNALLY WITHIN SITE

WEEKDAY AM PEAK HOUR PASS-BY TRIP ASSIGNMENT
EUGENE, OREGON

FIGURE I-1

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KITTELSON & ASSOCIATES, INC.
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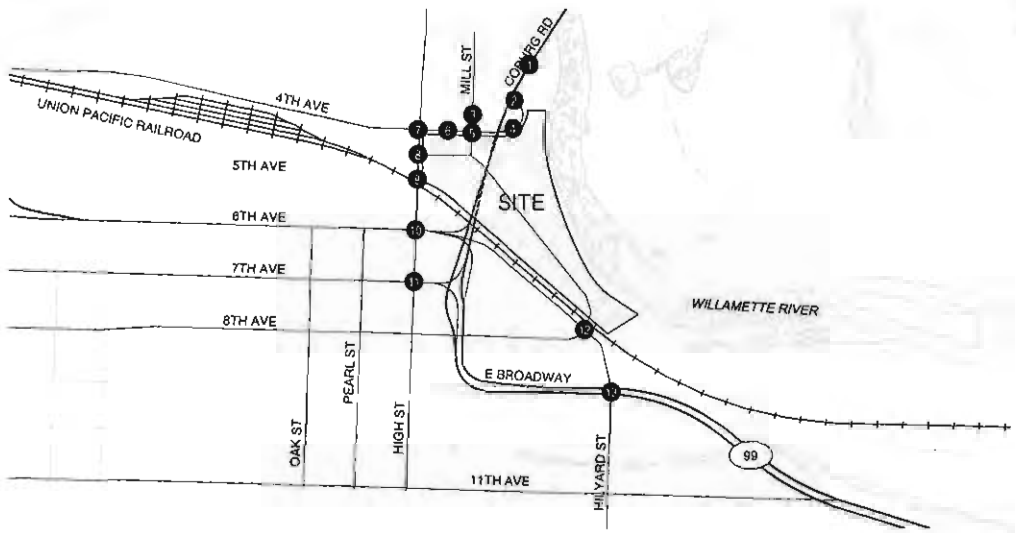

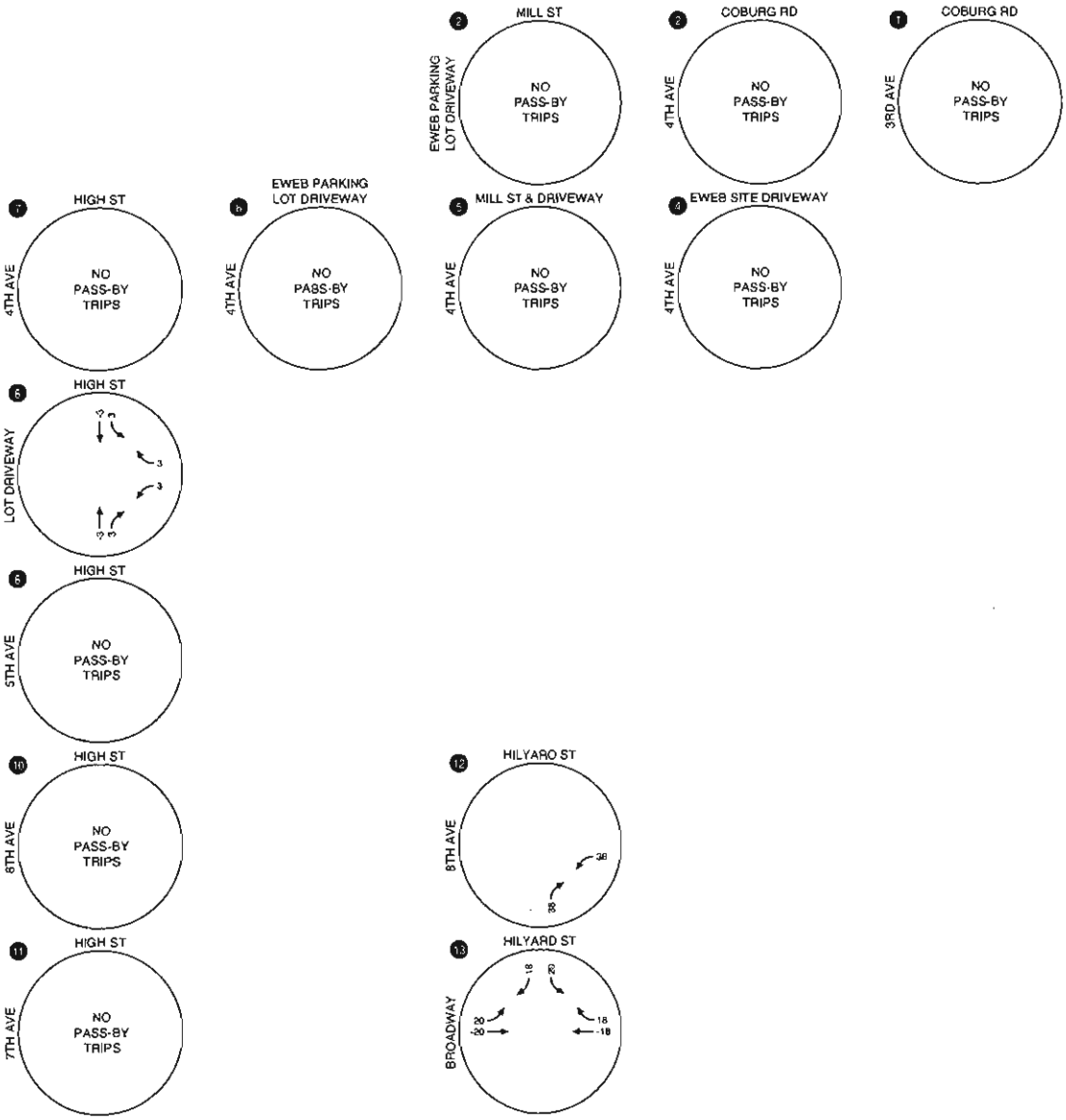

NOTE: REMAINING PASS-BY TRIPS OCCUR INTERNALLY WITHIN SITE

WEEKDAY PM PEAK HOUR PASS-BY TRIP ASSIGNMENT
EUGENE, OREGON

FIGURE I-2

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Appendix J Year 2021 Total Traffic Level-of-Service Worksheets

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	178	1424	44	0	2464
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	200	1600	49	0	2769
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	2984	800			1649	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2984	800			1649	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	38			100	
cM capacity (veh/h)	11	324			397	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	200	800	800	49	1384	1384
Volume Left	0	0	0	0	0	0
Volume Right	200	0	0	49	0	0
cSH	324	1700	1700	1700	1700	1700
Volume to Capacity	0.62	0.47	0.47	0.03	0.81	0.81
Queue Length 95th (ft)	97	0	0	0	0	0
Control Delay (s)	32.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	D					
Approach Delay (s)	32.5	0.0			0.0	
Approach LOS	D					

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	148	65	17	25	5	29
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59
Hourly flow rate (vph)	251	110	29	42	8	49
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			363		408	308
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			363		408	308
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	93
cM capacity (veh/h)			1205		588	736

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	361	29	42	58
Volume Left	0	29	0	8
Volume Right	110	0	0	49
cSH	1700	1205	1700	709
Volume to Capacity	0.21	0.02	0.02	0.08
Queue Length 95th (ft)	0	2	0	7
Control Delay (s)	0.0	8.1	0.0	10.5
Lane LOS		A		B
Approach Delay (s)	0.0	3.3		10.5
Approach LOS				B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	0	1	3	0	0	0	28	2	2	336	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	0	0	1	4	0	0	0	40	3	3	480	1
Pedestrians		4									2	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		4.0									4.0	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	534	533	485	529	533	43	485			43		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	534	533	485	529	533	43	485			43		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	456	453	584	460	453	1031	1084			1579		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	4	43	484
Volume Left	0	4	0	3
Volume Right	1	0	3	1
cSH	584	460	1084	1579
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	11.2	12.9	0.0	0.1
Lane LOS	B	B		A
Approach Delay (s)	11.2	12.9	0.0	0.1
Approach LOS	B	B		

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	31.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	156	59	11	11	7	23	7	14	43	193	104
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	21	214	81	15	15	10	32	10	19	59	264	142
Pedestrians		2			1			7			3	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	28			302			624	360	262	333	396	25
vC1, stage 1 conf vol							302	302		53	53	
vC2, stage 2 conf vol							322	58		280	343	
vCu, unblocked vol	28			302			624	360	262	333	396	25
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			91	98	98	91	56	86
cM capacity (veh/h)	1595			1264			363	630	776	658	595	1050

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	21	295	15	25	60	466
Volume Left	21	0	15	0	32	59
Volume Right	0	81	0	10	19	142
cSH	1595	1700	1264	1700	476	695
Volume to Capacity	0.01	0.17	0.01	0.01	0.13	0.67
Queue Length 95th (ft)	1	0	1	0	11	129
Control Delay (s)	7.3	0.0	7.9	0.0	13.7	20.0
Lane LOS	A		A		B	C
Approach Delay (s)	0.5		3.0		13.7	20.0
Approach LOS					B	C

Intersection Summary			
Average Delay	11.8		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	218	78	30	108	1	23	0	13	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	5	291	104	40	144	1	31	0	17	1	0	1
Pedestrians		4						3			2	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	147			398			586	584	346	545	635	151
vC1, stage 1 conf vol							356	356		227	227	
vC2, stage 2 conf vol							229	227		319	408	
vCu, unblocked vol	147			398			586	584	346	545	635	151
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			95	100	98	100	100	100
cM capacity (veh/h)	1444			1169			585	558	700	580	515	897

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	5	395	40	145	48	3
Volume Left	5	0	40	0	31	1
Volume Right	0	104	0	1	17	1
cSH	1444	1700	1169	1700	622	705
Volume to Capacity	0.00	0.23	0.03	0.09	0.08	0.00
Queue Length 95th (ft)	0	0	3	0	6	0
Control Delay (s)	7.5	0.0	8.2	0.0	11.3	10.1
Lane LOS	A		A		B	B
Approach Delay (s)	0.1		1.8		11.3	10.1
Approach LOS					B	B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	18	123	6	40	86	6	38	59	154	28	54	39
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	22	154	8	50	108	8	48	74	192	35	68	49

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	184	50	115	314	151
Volume Left (vph)	23	50	0	48	35
Volume Right (vph)	8	0	8	193	49
Hadj (s)	0.08	0.50	0.00	-0.30	-0.10
Departure Headway (s)	5.6	6.5	6.0	4.8	5.3
Degree Utilization, x	0.29	0.09	0.19	0.42	0.22
Capacity (veh/h)	591	510	552	696	625
Control Delay (s)	10.8	8.9	9.2	11.3	9.7
Approach Delay (s)	10.8	9.1		11.3	9.7
Approach LOS	B	A		B	A

Intersection Summary			
Delay	10.5		
HCM Level of Service	B		
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	0	0	9	0	4	3	255	40	18	70	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	6	0	0	12	0	6	4	354	56	25	97	4
Pedestrians		31						14			3	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		3						1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								510				
pX, platoon unblocked	0.95	0.95		0.95	0.95	0.95				0.95		
vC, conflicting volume	579	598	144	554	573	385	132			410		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	536	556	144	509	529	332	132			358		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	97	100	99	100			98		
cM capacity (veh/h)	406	401	875	434	416	680	1427			1157		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	6	18	414	126
Volume Left	6	12	4	25
Volume Right	0	6	56	4
cSH	406	488	1427	1157
Volume to Capacity	0.01	0.04	0.00	0.02
Queue Length 95th (ft)	1	3	0	2
Control Delay (s)	14.0	12.7	0.1	1.8
Lane LOS	B	B	A	A
Approach Delay (s)	14.0	12.7	0.1	1.8
Approach LOS	B	B		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	40	3	23	258	48	31
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	55	4	32	353	66	42
Pedestrians	47			6	2	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	4			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				393		
pX, platoon unblocked	0.92					
vC, conflicting volume	552	140	155			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	469	140	155			
tC, single (s)	6.4	6.5	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.6	2.4			
p0 queue free %	88	99	98			
cM capacity (veh/h)	474	795	1276			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	59	385	108
Volume Left	55	32	0
Volume Right	4	0	42
cSH	487	1276	1700
Volume to Capacity	0.12	0.02	0.06
Queue Length 95th (ft)	10	2	0
Control Delay (s)	13.4	0.9	0.0
Lane LOS	B	A	
Approach Delay (s)	13.4	0.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBT	WBR	NBL	NBT	SBR	SWR	SWR2
Lane Configurations							
Volume (vph)	462	66	118	209	49	474	6
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	1.00	1.00	*0.95	
Frpb, ped/bikes	1.00		1.00	1.00	0.97	1.00	
Flpb, ped/bikes	1.00		0.99	1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.86	0.98	
Flt Protected	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (prot)	3267		1510	1749	1539	3294	
Flt Permitted	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (perm)	3267		1510	1749	1539	3294	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.86	0.86
Adj. Flow (vph)	481	69	123	218	51	551	7
RTOR Reduction (vph)	0	0	93	0	39	0	0
Lane Group Flow (vph)	550	0	30	218	12	558	0
Confl. Peds. (#/hr)		6	16		16		
Confl. Bikes (#/hr)	3		3	35	7		
Heavy Vehicles (%)	5%	0%	14%	5%	0%	3%	40%
Turn Type			Perm		custom	custom	
Protected Phases	5			8		6	
Permitted Phases			8		4		
Actuated Green, G (s)	14.9		13.3	13.3	13.3	15.1	
Effective Green, g (s)	15.4		13.8	13.8	13.8	15.6	
Actuated g/C Ratio	0.27		0.24	0.24	0.24	0.27	
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	886		367	425	374	905	
v/s Ratio Prot	c0.17			c0.12		c0.17	
v/s Ratio Perm			0.02		0.01		
v/c Ratio	0.62		0.08	0.51	0.03	0.62	
Uniform Delay, d1	18.1		16.6	18.6	16.4	18.0	
Progression Factor	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0		0.0	0.4	0.0	0.9	
Delay (s)	19.1		16.6	19.0	16.4	18.9	
Level of Service	B		B	B	B	B	
Approach Delay (s)	19.1			18.2			
Approach LOS	B			B			

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	189	1336	0	0	0	0	0	176	241	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0						4.0	4.0			
Lane Util. Factor		0.86						0.91	0.91			
Frpb, ped/bikes		1.00						0.99	0.99			
Flpb, ped/bikes		0.99						1.00	1.00			
Frt		1.00						0.94	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		5962						2892	1347			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		5962						2892	1347			
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	212	1501	0	0	0	0	0	198	271	0	0	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	23	23	0	0	0
Lane Group Flow (vph)	0	1685	0	0	0	0	0	300	123	0	0	0
Confl. Peds. (#/hr)	29		4	4		29	6		1	1		6
Confl. Bikes (#/hr)							1	43				
Heavy Vehicles (%)	3%	5%	0%	0%	0%	0%	0%	11%	4%	0%	0%	0%
Turn Type	Perm								Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		52.5						28.5	28.5			
Effective Green, g (s)		53.0						29.0	29.0			
Actuated g/C Ratio		0.59						0.32	0.32			
Clearance Time (s)		4.5						4.5	4.5			
Vehicle Extension (s)		1.0						1.0	1.0			
Lane Grp Cap (vph)		3511						932	434			
v/s Ratio Prot								c0.10				
v/s Ratio Perm		0.28							0.09			
v/c Ratio		0.48						0.32	0.28			
Uniform Delay, d1		10.6						23.1	22.7			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		0.5						0.9	1.6			
Delay (s)		11.1						24.0	24.4			
Level of Service		B						C	C			
Approach Delay (s)		11.1			0.0			24.1			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2	6	76	2	5	19	507	203	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.95				
Frpb, ped/bikes		0.98			1.00			0.99				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		0.90			0.99			0.96				
Flt Protected		1.00			0.96			1.00				
Satd. Flow (prot)		1615			1737			3235				
Flt Permitted		1.00			0.81			1.00				
Satd. Flow (perm)		1615			1479			3235				
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	2	7	84	2	6	21	563	226	0	0	0
RTOR Reduction (vph)	0	6	0	0	5	0	0	62	0	0	0	0
Lane Group Flow (vph)	0	3	0	0	87	0	0	748	0	0	0	0
Confl. Peds. (#/hr)			2	2			1		17	17		1
Confl. Bikes (#/hr)	1						1	2			1	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)		4.7			4.7			22.0				
Effective Green, g (s)		4.7			4.7			22.0				
Actuated g/C Ratio		0.14			0.14			0.63				
Clearance Time (s)		4.0			4.0			4.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		219			200			2051				
v/s Ratio Prot		0.00										
v/s Ratio Perm					c0.06			0.23				
v/c Ratio		0.01			0.43			0.36				
Uniform Delay, d1		13.0			13.8			3.0				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.0			1.5			0.1				
Delay (s)		13.0			15.3			3.1				
Level of Service		B			B			A				
Approach Delay (s)		13.0			15.3			3.1			0.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	4.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	34.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	1244	0	0	343	443	481	252	38	44	0	43
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0	-0.5			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91			0.95	0.88	0.91	0.91			1.00	
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Frt	1.00	1.00			1.00	0.85	1.00	0.99			0.93	
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98			0.98	
Satd. Flow (prot)	1744	4866			3387	2552	1541	3149			1592	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98			0.98	
Satd. Flow (perm)	1744	4866			3387	2552	1541	3149			1592	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	61	1464	0	0	404	521	566	296	45	52	0	51
RTOR Reduction (vph)	0	0	0	0	0	355	0	4	0	0	30	0
Lane Group Flow (vph)	61	1464	0	0	404	166	300	603	0	0	73	0
Confl. Peds. (#/hr)	6		4	4		6			10	10		
Confl. Bikes (#/hr)								6		9	1	
Heavy Vehicles (%)	0%	3%	0%	0%	3%	4%	3%	2%	3%	0%	0%	10%
Turn Type	Prot					Perm	Split			Split		
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	6.6	37.6			26.5	26.5	25.0	25.0			7.5	
Effective Green, g (s)	7.1	42.6			27.0	27.0	26.0	26.0			8.5	
Actuated g/C Ratio	0.08	0.50			0.32	0.32	0.31	0.31			0.10	
Clearance Time (s)	4.5	4.5			4.5	4.5	5.0	5.0			5.0	
Vehicle Extension (s)	2.5	2.0			2.0	2.0	2.5	2.5			2.5	
Lane Grp Cap (vph)	146	2450			1081	814	474	968			160	
v/s Ratio Prot	0.03	c0.30			0.12		c0.19	0.19			c0.05	
v/s Ratio Perm						0.07						
v/c Ratio	0.42	0.60			0.37	0.20	0.63	0.62			0.46	
Uniform Delay, d1	36.8	14.9			22.3	21.0	25.2	25.1			35.9	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	1.4	0.3			0.1	0.0	2.4	1.1			1.5	
Delay (s)	38.2	15.2			22.3	21.0	27.6	26.2			37.4	
Level of Service	D	B			C	C	C	C			D	
Approach Delay (s)		16.1			21.6			26.7			37.4	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	7.5
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	14	0	1602	2450	462
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	16	0	1800	2753	519
Pedestrians	9					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3662	1385	2762			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3662	1385	2762			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	88	100			
cM capacity (veh/h)	4	134	145			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	900	900	1376	1376	519
Volume Left	0	0	0	0	0	0
Volume Right	16	0	0	0	0	519
cSH	134	1700	1700	1700	1700	1700
Volume to Capacity	0.12	0.53	0.53	0.81	0.81	0.31
Queue Length 95th (ft)	10	0	0	0	0	0
Control Delay (s)	35.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	E					
Approach Delay (s)	35.3	0.0		0.0		
Approach LOS	E					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	464	2694	28	0	2143
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	510	2960	31	0	2355
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	4138	1480			2991	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4138	1480			2991	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	0			100	
cM capacity (veh/h)	2	116			118	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	510	1480	1480	31	1177	1177
Volume Left	0	0	0	0	0	0
Volume Right	510	0	0	31	0	0
cSH	116	1700	1700	1700	1700	1700
Volume to Capacity	4.41	0.87	0.87	0.02	0.69	0.69
Queue Length 95th (ft)	Err	0	0	0	0	0
Control Delay (s)	Err	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	Err	0.0			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	870.6		
Intersection Capacity Utilization	115.6%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	343	39	7	21	30	121
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	536	61	11	33	47	189
Pedestrians	1				52	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				4	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			649		674	618
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			649		674	618
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		88	60
cM capacity (veh/h)			906		399	471

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	597	11	33	236
Volume Left	0	11	0	47
Volume Right	61	0	0	189
cSH	1700	906	1700	455
Volume to Capacity	0.35	0.01	0.02	0.52
Queue Length 95th (ft)	0	1	0	73
Control Delay (s)	0.0	9.0	0.0	21.1
Lane LOS		A		C
Approach Delay (s)	0.0	2.3		21.1
Approach LOS				C

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	1	0	0	8	1	1	3	46	2	0	242	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	0	0	9	1	1	4	54	2	0	285	0
Pedestrians		5						1				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	354	353	291	348	352	55	290			56		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	354	353	291	348	352	55	290			56		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	98	100	100	100			100		
cM capacity (veh/h)	598	571	749	607	572	1017	1278			1561		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	12	60	285
Volume Left	1	9	4	0
Volume Right	0	1	2	0
cSH	598	628	1278	1561
Volume to Capacity	0.00	0.02	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	11.0	10.8	0.5	0.0
Lane LOS	B	B	A	
Approach Delay (s)	11.0	10.8	0.5	0.0
Approach LOS	B	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	246	21	1	37	13	101	17	70	67	64	119
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	26	308	26	1	46	16	126	21	88	84	80	149
Pedestrians								40			3	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								3			0	
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	66			374			651	481	361	518	486	57
vC1, stage 1 conf vol							413	413		60	60	
vC2, stage 2 conf vol							238	68		458	426	
vCu, unblocked vol	66			374			651	481	361	518	486	57
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			73	96	87	82	85	85
cM capacity (veh/h)	1508			1156			460	547	665	463	540	1012

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	26	334	1	62	235	312
Volume Left	26	0	1	0	126	84
Volume Right	0	26	0	16	88	149
cSH	1508	1700	1156	1700	528	657
Volume to Capacity	0.02	0.20	0.00	0.04	0.45	0.48
Queue Length 95th (ft)	1	0	0	0	57	64
Control Delay (s)	7.4	0.0	8.1	0.0	17.2	15.4
Lane LOS	A		A		C	C
Approach Delay (s)	0.5		0.2		17.2	15.4
Approach LOS					C	C

Intersection Summary			
Average Delay	9.3		
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	263	26	11	246	0	68	0	24	0	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	4	387	38	16	362	0	100	0	35	0	0	4
Pedestrians		1						28			6	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						2			1	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	368			453			842	843	434	831	862	369
vC1, stage 1 conf vol							443	443		400	400	
vC2, stage 2 conf vol							400	400		431	462	
vCu, unblocked vol	368			453			842	843	434	831	862	369
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			79	100	94	100	100	99
cM capacity (veh/h)	1196			1092			475	468	612	464	457	677

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	4	425	16	362	135	4
Volume Left	4	0	16	0	100	0
Volume Right	0	38	0	0	35	4
cSH	1196	1700	1092	1700	504	677
Volume to Capacity	0.00	0.25	0.01	0.21	0.27	0.01
Queue Length 95th (ft)	0	0	1	0	27	0
Control Delay (s)	8.0	0.0	8.3	0.0	14.7	10.4
Lane LOS	A		A		B	B
Approach Delay (s)	0.1		0.4		14.7	10.4
Approach LOS					B	B

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	12	107	8	161	136	20	124	80	138	47	113	82
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	14	127	10	192	162	24	148	95	164	56	135	98

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	151	192	186	407	288
Volume Left (vph)	14	192	0	148	56
Volume Right (vph)	10	0	24	164	98
Hadj (s)	0.02	0.52	-0.07	-0.16	-0.13
Departure Headway (s)	7.1	7.5	6.9	6.1	6.3
Degree Utilization, x	0.30	0.40	0.36	0.69	0.51
Capacity (veh/h)	429	445	483	567	519
Control Delay (s)	13.2	14.3	12.6	21.2	15.7
Approach Delay (s)	13.2	13.5		21.2	15.7
Approach LOS	B	B		C	C

Intersection Summary				
Delay	16.5			
HCM Level of Service	C			
Intersection Capacity Utilization	61.0%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	0	7	39	0	19	7	315	17	9	265	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	10	0	9	48	0	23	9	384	21	11	323	9
Pedestrians		39						9			1	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		3						1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								510				
pX, platoon unblocked	0.97	0.97		0.97	0.97	0.97				0.97		
vC, conflicting volume	824	810	375	779	804	396	371			405		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	805	791	375	758	785	365	371			374		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	99	84	100	97	99			99		
cM capacity (veh/h)	265	300	649	299	303	666	1160			1163		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	71	413	343
Volume Left	10	48	9	11
Volume Right	9	23	21	9
cSH	366	365	1160	1163
Volume to Capacity	0.05	0.19	0.01	0.01
Queue Length 95th (ft)	4	18	1	1
Control Delay (s)	15.4	17.2	0.2	0.4
Lane LOS	C	C	A	A
Approach Delay (s)	15.4	17.2	0.2	0.4
Approach LOS	C	C		

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	34.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	64	31	86	275	210	102
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	77	37	104	331	253	123
Pedestrians	41			7	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	3			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				393		
pX, platoon unblocked	0.91					
vC, conflicting volume	895	362	417			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	835	362	417			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	72	94	91			
cM capacity (veh/h)	271	659	1108			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	114	435	376
Volume Left	77	104	0
Volume Right	37	0	123
cSH	335	1108	1700
Volume to Capacity	0.34	0.09	0.22
Queue Length 95th (ft)	37	8	0
Control Delay (s)	21.2	2.8	0.0
Lane LOS	C	A	
Approach Delay (s)	21.2	2.8	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBT	WBR	NBL	NBT	SBR	SWR	SWR2
Lane Configurations							
Volume (vph)	803	143	294	185	241	475	32
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	1.00	1.00	*0.95	
Frpb, ped/bikes	0.99		1.00	1.00	0.96	1.00	
Flpb, ped/bikes	1.00		0.98	1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.86	0.98	
Flt Protected	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (prot)	3294		1686	1818	1507	3309	
Flt Permitted	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (perm)	3294		1686	1818	1507	3309	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	934	166	342	215	280	552	37
RTOR Reduction (vph)	0	0	31	0	31	0	0
Lane Group Flow (vph)	1100	0	311	215	249	589	0
Confl. Peds. (#/hr)		15	23		23		
Confl. Bikes (#/hr)	1	1	1	29	7		
Heavy Vehicles (%)	3%	2%	1%	1%	1%	3%	3%
Turn Type			Perm		custom	custom	
Protected Phases	5			8		6	
Permitted Phases			8		4		
Actuated Green, G (s)	24.8		16.4	16.4	16.4	16.7	
Effective Green, g (s)	25.3		16.9	16.9	16.9	17.2	
Actuated g/C Ratio	0.35		0.24	0.24	0.24	0.24	
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1167		399	430	357	797	
v/s Ratio Prot	c0.33			0.12		c0.18	
v/s Ratio Perm			c0.18		0.16		
v/c Ratio	0.94		0.78	0.50	0.70	0.74	
Uniform Delay, d1	22.3		25.5	23.6	24.9	25.0	
Progression Factor	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.5		8.5	0.3	4.7	3.1	
Delay (s)	36.8		34.0	23.9	29.6	28.1	
Level of Service	D		C	C	C	C	
Approach Delay (s)	36.8			30.1			
Approach LOS	D			C			

Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	1958	0	0	0	0	0	363	523	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0						4.0	4.0			
Lane Util. Factor		0.86						0.91	0.91			
Frpb, ped/bikes		1.00						0.98	0.95			
Flpb, ped/bikes		1.00						1.00	1.00			
Frt		1.00						0.94	0.85			
Flt Protected		1.00						1.00	1.00			
Satd. Flow (prot)		6167						3039	1330			
Flt Permitted		1.00						1.00	1.00			
Satd. Flow (perm)		6167						3039	1330			
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	137	2388	0	0	0	0	0	443	638	0	0	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	3	3	0	0	0
Lane Group Flow (vph)	0	2516	0	0	0	0	0	740	335	0	0	0
Confl. Peds. (#/hr)	18		9	9		18	22		25	25		22
Confl. Bikes (#/hr)		1						31			1	1
Heavy Vehicles (%)	2%	2%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%
Turn Type	Perm								Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		52.5						28.5	28.5			
Effective Green, g (s)		53.0						29.0	29.0			
Actuated g/C Ratio		0.59						0.32	0.32			
Clearance Time (s)		4.5						4.5	4.5			
Vehicle Extension (s)		1.0						1.0	1.0			
Lane Grp Cap (vph)		3632						979	429			
v/s Ratio Prot								0.24				
v/s Ratio Perm		0.41							c0.25			
v/c Ratio		0.69						0.76	0.78			
Uniform Delay, d1		12.8						27.3	27.6			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		1.1						5.4	13.2			
Delay (s)		14.0						32.8	40.9			
Level of Service		B						C	D			
Approach Delay (s)		14.0			0.0			35.3			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	17	152	1	11	25	792	117	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.95				
Frpb, ped/bikes		0.97			1.00			0.99				
Flpb, ped/bikes		1.00			0.99			1.00				
Frt		0.88			0.99			0.98				
Flt Protected		1.00			0.96			1.00				
Satd. Flow (prot)		1456			1719			3340				
Flt Permitted		0.99			0.72			1.00				
Satd. Flow (perm)		1440			1302			3340				
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	1	1	22	192	1	14	32	1003	148	0	0	0
RTOR Reduction (vph)	0	17	0	0	7	0	0	20	0	0	0	0
Lane Group Flow (vph)	0	7	0	0	200	0	0	1163	0	0	0	0
Confl. Peds. (#/hr)	3		9	9		3	4		23	23		4
Confl. Bikes (#/hr)			4				5	1		1		
Heavy Vehicles (%)	0%	0%	7%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)		9.5			9.5			23.8				
Effective Green, g (s)		9.5			9.5			23.8				
Actuated g/C Ratio		0.23			0.23			0.58				
Clearance Time (s)		4.0			4.0			4.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		331			299			1925				
v/s Ratio Prot												
v/s Ratio Perm		0.00			c0.15			0.35				
v/c Ratio		0.02			0.67			0.60				
Uniform Delay, d1		12.3			14.5			5.7				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.0			5.6			0.5				
Delay (s)		12.3			20.1			6.2				
Level of Service		B			C			A				
Approach Delay (s)		12.3			20.1			6.2			0.0	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	41.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	1246	0	0	458	549	726	328	59	93	0	75
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0	-0.5			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91			0.95	0.88	0.91	0.91			1.00	
Frpb, ped/bikes	1.00	1.00			1.00	0.92	1.00	0.99			0.99	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Frt	1.00	1.00			1.00	0.85	1.00	0.99			0.94	
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98			0.97	
Satd. Flow (prot)	1693	4866			3454	2482	1572	3174			1667	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98			0.97	
Satd. Flow (perm)	1693	4866			3454	2482	1572	3174			1667	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	64	1416	0	0	520	624	825	373	67	106	0	85
RTOR Reduction (vph)	0	0	0	0	0	451	0	5	0	0	23	0
Lane Group Flow (vph)	64	1416	0	0	520	173	421	839	0	0	168	0
Confl. Peds. (#/hr)	21		10	10		21	2		46	46		2
Confl. Bikes (#/hr)		1				1		13		4	1	
Heavy Vehicles (%)	3%	3%	0%	0%	1%	2%	1%	1%	2%	0%	0%	0%
Turn Type	Prot					Perm	Split			Split		
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	7.3	38.9			27.1	27.1	33.0	33.0			13.4	
Effective Green, g (s)	7.8	43.9			27.6	27.6	34.0	34.0			14.4	
Actuated g/C Ratio	0.08	0.44			0.28	0.28	0.34	0.34			0.14	
Clearance Time (s)	4.5	4.5			4.5	4.5	5.0	5.0			5.0	
Vehicle Extension (s)	2.5	2.0			2.0	2.0	2.5	2.5			2.5	
Lane Grp Cap (vph)	132	2140			955	686	536	1081			241	
v/s Ratio Prot	0.04	c0.29			0.15		c0.27	0.26			c0.10	
v/s Ratio Perm						0.07						
v/c Ratio	0.48	0.66			0.54	0.25	0.79	0.78			0.70	
Uniform Delay, d1	44.1	22.1			30.7	28.1	29.6	29.5			40.6	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	2.0	0.6			0.3	0.1	7.2	3.4			7.8	
Delay (s)	46.1	22.7			31.1	28.1	36.8	32.9			48.4	
Level of Service	D	C			C	C	D	C			D	
Approach Delay (s)		23.7			29.5			34.2			48.4	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	99.8	Sum of lost time (s)	7.5
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	34	0	3158	2109	431
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	37	0	3470	2318	474
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	4053	1159	2318			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4053	1159	2318			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	81	100			
cM capacity (veh/h)	2	192	218			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	37	1735	1735	1159	1159	474
Volume Left	0	0	0	0	0	0
Volume Right	37	0	0	0	0	474
cSH	192	1700	1700	1700	1700	1700
Volume to Capacity	0.19	1.02	1.02	0.68	0.68	0.28
Queue Length 95th (ft)	17	0	0	0	0	0
Control Delay (s)	28.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	D					
Approach Delay (s)	28.2	0.0		0.0		
Approach LOS	D					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		

Appendix K Year 2021 Mitigated Total Traffic Level-of-Service Worksheets

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	178	1424	44	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0	4.0	4.0		
Lane Util. Factor		0.88	0.95	1.00		
Frt		0.85	1.00	0.85		
Flt Protected		1.00	1.00	1.00		
Satd. Flow (prot)		2641	3387	1561		
Flt Permitted		1.00	1.00	1.00		
Satd. Flow (perm)		2641	3387	1561		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	200	1600	49	0	0
RTOR Reduction (vph)	0	85	0	0	0	0
Lane Group Flow (vph)	0	115	1600	49	0	0
Heavy Vehicles (%)	0%	4%	3%	0%	0%	2%
Turn Type		custom		Free		
Protected Phases		8	2			
Permitted Phases				Free		
Actuated Green, G (s)		8.3	44.4	60.7		
Effective Green, g (s)		8.3	44.4	60.7		
Actuated g/C Ratio		0.14	0.73	1.00		
Clearance Time (s)		4.0	4.0			
Vehicle Extension (s)		3.0	3.0			
Lane Grp Cap (vph)		361	2477	1561		
v/s Ratio Prot		c0.04	c0.47			
v/s Ratio Perm				0.03		
v/c Ratio		0.32	0.65	0.03		
Uniform Delay, d1		23.6	4.1	0.0		
Progression Factor		1.00	1.00	1.00		
Incremental Delay, d2		0.5	0.6	0.0		
Delay (s)		24.2	4.7	0.0		
Level of Service		C	A	A		
Approach Delay (s)	24.2		4.6			0.0
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	464	2694	28	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0	4.0	4.0		
Lane Util. Factor		0.88	0.95	1.00		
Frt		0.85	1.00	0.85		
Flt Protected		1.00	1.00	1.00		
Satd. Flow (prot)		2719	3454	1561		
Flt Permitted		1.00	1.00	1.00		
Satd. Flow (perm)		2719	3454	1561		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	488	2836	29	0	0
RTOR Reduction (vph)	0	7	0	0	0	0
Lane Group Flow (vph)	0	481	2836	29	0	0
Heavy Vehicles (%)	0%	1%	1%	0%	0%	2%
Turn Type		custom		Free		
Protected Phases		8	2			
Permitted Phases				Free		
Actuated Green, G (s)		16.0	66.0	90.0		
Effective Green, g (s)		16.0	66.0	90.0		
Actuated g/C Ratio		0.18	0.73	1.00		
Clearance Time (s)		4.0	4.0			
Vehicle Extension (s)		3.0	3.0			
Lane Grp Cap (vph)		483	2533	1561		
v/s Ratio Prot		c0.18	c0.82			
v/s Ratio Perm				0.02		
v/c Ratio		1.00	1.12	0.02		
Uniform Delay, d1		37.0	12.0	0.0		
Progression Factor		1.00	1.00	1.00		
Incremental Delay, d2		39.4	59.8	0.0		
Delay (s)		76.4	71.8	0.0		
Level of Service		E	E	A		
Approach Delay (s)	76.4		71.1			0.0
Approach LOS	E		E			A

Intersection Summary			
HCM Average Control Delay	71.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Appendix L. Year 2031 Background Traffic Level-of-Service Worksheets

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	150	1490	38	0	2842
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	169	1674	43	0	3193
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	3271	837			1717	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3271	837			1717	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	45			100	
cM capacity (veh/h)	7	306			374	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	169	837	837	43	1597	1597
Volume Left	0	0	0	0	0	0
Volume Right	169	0	0	43	0	0
cSH	306	1700	1700	1700	1700	1700
Volume to Capacity	0.55	0.49	0.49	0.03	0.94	0.94
Queue Length 95th (ft)	78	0	0	0	0	0
Control Delay (s)	30.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	D					
Approach Delay (s)	30.3	0.0			0.0	
Approach LOS	D					

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	150	12	14	24	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59
Hourly flow rate (vph)	254	20	24	41	0	0
Pedestrians					2	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			277		355	266
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			277		355	266
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1298		636	777

Direction, Lane #	EB 1	WB 1	WB 2
Volume Total	275	24	41
Volume Left	0	24	0
Volume Right	20	0	0
cSH	1700	1298	1700
Volume to Capacity	0.16	0.02	0.02
Queue Length 95th (ft)	0	1	0
Control Delay (s)	0.0	7.8	0.0
Lane LOS		A	
Approach Delay (s)	0.0	2.9	
Approach LOS			

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	15.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	0	0	0	1	0	0	0	23	2	2	131	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	0	0	0	1	0	0	0	33	3	3	187	1
Pedestrians		4									2	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		4.0									4.0	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	234	233	192	228	233	36	193			36		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	234	233	192	228	233	36	193			36		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	719	667	852	729	668	1040	1388			1588		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	1	36	191
Volume Left	0	1	0	3
Volume Right	0	0	3	1
cSH	1700	729	1388	1588
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	9.9	0.0	0.1
Lane LOS	A	A		A
Approach Delay (s)	0.0	9.9	0.0	0.1
Approach LOS	A	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	145	19	8	12	4	15	4	6	11	33	88
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	25	199	26	11	16	5	21	5	8	15	45	121
Pedestrians		2			1			7			3	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	25			232			451	315	220	304	325	24
vC1, stage 1 conf vol							268	268		44	44	
vC2, stage 2 conf vol							184	47		260	281	
vCu, unblocked vol	25			232			451	315	220	304	325	24
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			96	99	99	98	93	89
cM capacity (veh/h)	1599			1340			585	652	820	692	636	1051

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	25	225	11	22	34	181
Volume Left	25	0	11	0	21	15
Volume Right	0	26	0	5	8	121
cSH	1599	1700	1340	1700	639	871
Volume to Capacity	0.02	0.13	0.01	0.01	0.05	0.21
Queue Length 95th (ft)	1	0	1	0	4	19
Control Delay (s)	7.3	0.0	7.7	0.0	11.0	10.2
Lane LOS	A		A		B	B
Approach Delay (s)	0.7		2.6		11.0	10.2
Approach LOS					B	B

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	25.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	173	37	11	103	1	14	0	9	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	5	231	49	15	137	1	19	0	12	0	0	0
Pedestrians		4						3			2	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	141			283			440	439	258	423	463	144
vC1, stage 1 conf vol							269	269		169	169	
vC2, stage 2 conf vol							171	170		253	294	
vCu, unblocked vol	141			283			440	439	258	423	463	144
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			97	100	98	100	100	100
cM capacity (veh/h)	1452			1288			670	627	783	669	608	904

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	5	280	15	139	31	0
Volume Left	5	0	15	0	19	0
Volume Right	0	49	0	1	12	0
cSH	1452	1700	1288	1700	710	1700
Volume to Capacity	0.00	0.16	0.01	0.08	0.04	0.00
Queue Length 95th (ft)	0	0	1	0	3	0
Control Delay (s)	7.5	0.0	7.8	0.0	10.3	0.0
Lane LOS	A		A		B	A
Approach Delay (s)	0.1		0.7		10.3	0.0
Approach LOS					B	A

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	23.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	125	6	23	91	3	43	85	78	11	42	43
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	25	156	8	29	114	4	54	106	98	14	52	54

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	189	29	118	258	120
Volume Left (vph)	25	29	0	54	14
Volume Right (vph)	8	0	4	98	54
Hadj (s)	0.09	0.50	0.03	-0.15	-0.20
Departure Headway (s)	5.3	6.2	5.7	4.8	5.0
Degree Utilization, x	0.28	0.05	0.19	0.35	0.17
Capacity (veh/h)	630	536	581	702	658
Control Delay (s)	10.3	8.3	8.8	10.4	9.0
Approach Delay (s)	10.3	8.7		10.4	9.0
Approach LOS	B	A		B	A

Intersection Summary				
Delay	9.8			
HCM Level of Service	A			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	4	0	3	206	68	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	6	0	4	286	94	4
Pedestrians	31			14	3	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	3			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				510		
pX, platoon unblocked						
vC, conflicting volume	425	142	130			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	425	142	130			
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)	572	878	1431			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	290	99
Volume Left	6	4	0
Volume Right	0	0	4
cSH	572	1431	1700
Volume to Capacity	0.01	0.00	0.06
Queue Length 95th (ft)	1	0	0
Control Delay (s)	11.4	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	11.4	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	52	5	28	156	26	43
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	71	7	38	214	36	59
Pedestrians	47			6	2	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	4			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				393		
pX, platoon unblocked						
vC, conflicting volume	404	118	142			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	404	118	142			
tC, single (s)	6.4	6.5	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.6	2.4			
p0 queue free %	87	99	97			
cM capacity (veh/h)	559	819	1291			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	78	252	95
Volume Left	71	38	0
Volume Right	7	0	59
cSH	575	1291	1700
Volume to Capacity	0.14	0.03	0.06
Queue Length 95th (ft)	12	2	0
Control Delay (s)	12.2	1.4	0.0
Lane LOS	B	A	
Approach Delay (s)	12.2	1.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBT	WBR	NBL	NBT	SBR	SWR	SWR2
Lane Configurations							
Volume (vph)	509	67	119	89	26	523	9
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	1.00	1.00	*0.95	
Frpb, ped/bikes	1.00		1.00	1.00	0.97	1.00	
Flpb, ped/bikes	1.00		0.99	1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.86	0.98	
Flt Protected	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (prot)	3271		1511	1749	1536	3290	
Flt Permitted	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (perm)	3271		1511	1749	1536	3290	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.86	0.86
Adj. Flow (vph)	530	70	124	93	27	608	10
RTOR Reduction (vph)	0	0	93	0	22	0	0
Lane Group Flow (vph)	600	0	31	93	5	618	0
Confl. Peds. (#/hr)		6	16		16		
Confl. Bikes (#/hr)	3		3	35	7		
Heavy Vehicles (%)	5%	0%	14%	5%	0%	3%	40%
Turn Type			Perm		custom	custom	
Protected Phases	5			8		6	
Permitted Phases			8		4		
Actuated Green, G (s)	16.1		9.0	9.0	9.0	16.0	
Effective Green, g (s)	16.6		9.5	9.5	9.5	16.5	
Actuated g/C Ratio	0.30		0.17	0.17	0.17	0.30	
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	994		263	304	267	994	
v/s Ratio Prot	c0.18			c0.05		c0.19	
v/s Ratio Perm			0.02		0.00		
v/c Ratio	0.60		0.12	0.31	0.02	0.62	
Uniform Delay, d1	16.2		19.0	19.7	18.7	16.4	
Progression Factor	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7		0.1	0.2	0.0	0.9	
Delay (s)	16.9		19.1	19.9	18.7	17.2	
Level of Service	B		B	B	B	B	
Approach Delay (s)	16.9			19.4			
Approach LOS	B			B			

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	1394	0	0	0	0	0	165	241	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0						4.0	4.0			
Lane Util. Factor		0.86						0.91	0.91			
Frpb, ped/bikes		1.00						0.99	0.99			
Flpb, ped/bikes		1.00						1.00	1.00			
Frt		1.00						0.94	0.85			
Flt Protected		1.00						1.00	1.00			
Satd. Flow (prot)		5985						2885	1347			
Flt Permitted		1.00						1.00	1.00			
Satd. Flow (perm)		5985						2885	1347			
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	116	1566	0	0	0	0	0	185	271	0	0	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	20	20	0	0	0
Lane Group Flow (vph)	0	1670	0	0	0	0	0	292	124	0	0	0
Confl. Peds. (#/hr)	29		4	4		29	6		1	1		6
Confl. Bikes (#/hr)							1	43				
Heavy Vehicles (%)	3%	5%	0%	0%	0%	0%	0%	11%	4%	0%	0%	0%
Turn Type	Perm								Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		52.5						28.5	28.5			
Effective Green, g (s)		53.0						29.0	29.0			
Actuated g/C Ratio		0.59						0.32	0.32			
Clearance Time (s)		4.5						4.5	4.5			
Vehicle Extension (s)		1.0						1.0	1.0			
Lane Grp Cap (vph)		3525						930	434			
v/s Ratio Prot								c0.10				
v/s Ratio Perm		0.28							0.09			
v/c Ratio		0.47						0.31	0.29			
Uniform Delay, d1		10.5						23.0	22.8			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		0.5						0.9	1.7			
Delay (s)		11.0						23.9	24.4			
Level of Service		B						C	C			
Approach Delay (s)		11.0			0.0			24.1			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	30	30	800	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	33	33	889	0	0
Pedestrians	1			2		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				403		
pX, platoon unblocked						
vC, conflicting volume	512	3	1			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	512	3	1			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	98			
cM capacity (veh/h)	486	1083	1634			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	33	330	593
Volume Left	0	33	0
Volume Right	33	0	0
cSH	1083	1634	1700
Volume to Capacity	0.03	0.02	0.35
Queue Length 95th (ft)	2	2	0
Control Delay (s)	8.4	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	8.4	0.3	
Approach LOS	A		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	1316	0	0	559	617	545	233	43	24	0	20
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0	-0.5			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91			0.95	0.88	0.91	0.91			1.00	
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Frt	1.00	1.00			1.00	0.85	1.00	0.99			0.94	
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98			0.97	
Satd. Flow (prot)	1744	4866			3387	2551	1541	3136			1603	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98			0.97	
Satd. Flow (perm)	1744	4866			3387	2551	1541	3136			1603	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	38	1548	0	0	658	726	641	274	51	28	0	24
RTOR Reduction (vph)	0	0	0	0	0	454	0	5	0	0	22	0
Lane Group Flow (vph)	38	1548	0	0	658	272	320	641	0	0	30	0
Confl. Peds. (#/hr)	6		4	4		6			10	10		
Confl. Bikes (#/hr)								6		9	1	
Heavy Vehicles (%)	0%	3%	0%	0%	3%	4%	3%	2%	3%	0%	0%	10%
Turn Type	Prot					Perm	Split			Split		
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	4.2	40.3			31.6	31.6	25.4	25.4			5.4	
Effective Green, g (s)	4.7	45.3			32.1	32.1	26.4	26.4			6.4	
Actuated g/C Ratio	0.05	0.53			0.38	0.38	0.31	0.31			0.07	
Clearance Time (s)	4.5	4.5			4.5	4.5	5.0	5.0			5.0	
Vehicle Extension (s)	2.5	2.0			2.0	2.0	2.5	2.5			2.5	
Lane Grp Cap (vph)	96	2575			1270	957	475	967			120	
v/s Ratio Prot	0.02	c0.32			0.19		c0.21	0.20			0.02	
v/s Ratio Perm						0.11						
v/c Ratio	0.40	0.60			0.52	0.28	0.67	0.66			0.25	
Uniform Delay, d1	39.1	13.9			20.8	18.7	25.8	25.7			37.3	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	2.0	0.3			0.1	0.1	3.4	1.6			0.8	
Delay (s)	41.0	14.2			20.9	18.8	29.2	27.3			38.1	
Level of Service	D	B			C	B	C	C			D	
Approach Delay (s)		14.8			19.8			27.9			38.1	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	85.6	Sum of lost time (s)	3.5
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	16	0	1636	2826	254
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	18	0	1838	3175	285
Pedestrians	9					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	4103	1597	3184			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4103	1597	3184			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	81	100			
cM capacity (veh/h)	2	97	98			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	18	919	919	1588	1588	285
Volume Left	0	0	0	0	0	0
Volume Right	18	0	0	0	0	285
cSH	97	1700	1700	1700	1700	1700
Volume to Capacity	0.19	0.54	0.54	0.93	0.93	0.17
Queue Length 95th (ft)	16	0	0	0	0	0
Control Delay (s)	50.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	50.6	0.0		0.0		
Approach LOS	F					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	322	2819	26	0	2472
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	354	3098	29	0	2716
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	4456	1549			3126	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4456	1549			3126	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	0			100	
cM capacity (veh/h)	1	104			104	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	354	1549	1549	29	1358	1358
Volume Left	0	0	0	0	0	0
Volume Right	354	0	0	29	0	0
cSH	104	1700	1700	1700	1700	1700
Volume to Capacity	3.41	0.91	0.91	0.02	0.80	0.80
Queue Length 95th (ft)	Err	0	0	0	0	0
Control Delay (s)	Err	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	Err	0.0			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	571.0		
Intersection Capacity Utilization	110.0%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	321	21	6	20	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	502	33	9	31	0	0
Pedestrians	1				52	
Lane Width (ft)	12.0				0.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			586		621	570
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			586		621	570
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			998		450	525

Direction, Lane #	EB 1	WB 1	WB 2
Volume Total	534	9	31
Volume Left	0	9	0
Volume Right	33	0	0
cSH	1700	998	1700
Volume to Capacity	0.31	0.01	0.02
Queue Length 95th (ft)	0	1	0
Control Delay (s)	0.0	8.6	0.0
Lane LOS		A	
Approach Delay (s)	0.0	2.0	
Approach LOS			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Volume (veh/h)	1	0	0	8	1	1	2	25	0	0	176	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	0	0	9	1	1	2	29	0	0	207	0
Pedestrians		5						1				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	248	246	213	242	246	29	212			29		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	248	246	213	242	246	29	212			29		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	702	656	828	712	656	1051	1365			1597		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	12	32	207
Volume Left	1	9	2	0
Volume Right	0	1	0	0
cSH	702	729	1365	1597
Volume to Capacity	0.00	0.02	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	10.1	10.0	0.6	0.0
Lane LOS	B	B	A	
Approach Delay (s)	10.1	10.0	0.6	0.0
Approach LOS	B	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	248	7	0	18	2	66	6	36	58	8	118
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	25	310	9	0	22	2	82	8	45	72	10	148
Pedestrians								40			3	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								3			0	
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	28			359			579	432	354	436	436	27
vC1, stage 1 conf vol							404	404		27	27	
vC2, stage 2 conf vol							175	28		409	409	
vCu, unblocked vol	28			359			579	432	354	436	436	27
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			84	99	93	87	98	86
cM capacity (veh/h)	1556			1171			516	556	671	546	554	1052

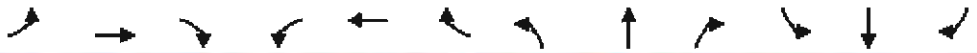
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	25	319	0	25	135	230
Volume Left	25	0	0	0	82	72
Volume Right	0	9	0	2	45	148
cSH	1556	1700	1700	1700	561	790
Volume to Capacity	0.02	0.19	0.00	0.01	0.24	0.29
Queue Length 95th (ft)	1	0	0	0	23	30
Control Delay (s)	7.4	0.0	0.0	0.0	13.4	11.4
Lane LOS	A				B	B
Approach Delay (s)	0.5		0.0		13.4	11.4
Approach LOS					B	B

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	268	12	5	197	0	30	0	7	0	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	3	394	18	7	290	0	44	0	10	0	0	4
Pedestrians		1						28			6	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						2			1	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	296			440			747	747	431	721	756	297
vC1, stage 1 conf vol							437	437		310	310	
vC2, stage 2 conf vol							310	310		410	446	
vCu, unblocked vol	296			440			747	747	431	721	756	297
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			91	100	98	100	100	99
cM capacity (veh/h)	1271			1104			511	499	614	524	493	743

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	3	412	7	290	54	4
Volume Left	3	0	7	0	44	0
Volume Right	0	18	0	0	10	4
cSH	1271	1700	1104	1700	527	743
Volume to Capacity	0.00	0.24	0.01	0.17	0.10	0.01
Queue Length 95th (ft)	0	0	1	0	9	0
Control Delay (s)	7.8	0.0	8.3	0.0	12.6	9.9
Lane LOS	A		A		B	A
Approach Delay (s)	0.1		0.2		12.6	9.9
Approach LOS					B	A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	14	119	9	85	140	5	143	80	120	43	150	91
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	17	142	11	101	167	6	170	95	143	51	179	108

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	169	101	173	408	338
Volume Left (vph)	17	101	0	170	51
Volume Right (vph)	11	0	6	143	108
Hadj (s)	0.03	0.52	-0.01	-0.12	-0.13
Departure Headway (s)	7.0	7.7	7.2	6.0	6.1
Degree Utilization, x	0.33	0.22	0.34	0.68	0.57
Capacity (veh/h)	438	424	448	573	545
Control Delay (s)	13.5	11.6	12.7	20.7	17.0
Approach Delay (s)	13.5	12.3		20.7	17.0
Approach LOS	B	B		C	C

Intersection Summary				
Delay	16.7			
HCM Level of Service	C			
Intersection Capacity Utilization	70.7%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	8	7	7	336	247	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	10	9	9	410	301	9
Pedestrians	39			9	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	3			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				510		
pX, platoon unblocked						
vC, conflicting volume	772	353	349			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	772	353	349			
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	99	99			
cM capacity (veh/h)	356	667	1182			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	18	418	310
Volume Left	10	9	0
Volume Right	9	0	9
cSH	455	1182	1700
Volume to Capacity	0.04	0.01	0.18
Queue Length 95th (ft)	3	1	0
Control Delay (s)	13.2	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	13.2	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	85	43	105	258	132	122
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	102	52	127	311	159	147
Pedestrians	41			7	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	3			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				393		
pX, platoon unblocked	0.94					
vC, conflicting volume	838	281	347			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	797	281	347			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	65	93	89			
cM capacity (veh/h)	290	733	1176			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	154	437	306
Volume Left	102	127	0
Volume Right	52	0	147
cSH	364	1176	1700
Volume to Capacity	0.42	0.11	0.18
Queue Length 95th (ft)	51	9	0
Control Delay (s)	21.9	3.2	0.0
Lane LOS	C	A	
Approach Delay (s)	21.9	3.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBT	WBR	NBL	NBT	SBR	SWR	SWR2
Lane Configurations							
Volume (vph)	878	155	295	143	175	524	50
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	1.00	1.00	*0.95	
Frpb, ped/bikes	0.99		1.00	1.00	0.95	1.00	
Flpb, ped/bikes	1.00		0.97	1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.86	0.98	
Flt Protected	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (prot)	3296		1680	1818	1501	3309	
Flt Permitted	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (perm)	3296		1680	1818	1501	3309	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	976	172	328	159	194	582	56
RTOR Reduction (vph)	0	0	29	0	28	0	0
Lane Group Flow (vph)	1148	0	299	159	166	638	0
Confl. Peds. (#/hr)		15	23		23		
Confl. Bikes (#/hr)	1	1	1	29	7		
Heavy Vehicles (%)	3%	2%	1%	1%	1%	3%	3%
Turn Type			Perm		custom	custom	
Protected Phases	5			8		6	
Permitted Phases			8		4		
Actuated Green, G (s)	32.0		17.8	17.8	17.8	18.9	
Effective Green, g (s)	32.5		18.3	18.3	18.3	19.4	
Actuated g/C Ratio	0.40		0.22	0.22	0.22	0.24	
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1303		374	405	334	781	
v/s Ratio Prot	c0.35			0.09		c0.19	
v/s Ratio Perm			c0.18		0.11		
v/c Ratio	0.88		0.80	0.39	0.50	0.82	
Uniform Delay, d1	23.1		30.2	27.2	27.9	29.7	
Progression Factor	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.1		11.0	0.2	0.4	6.3	
Delay (s)	30.1		41.2	27.4	28.4	36.0	
Level of Service	C		D	C	C	D	
Approach Delay (s)	30.1			36.7			
Approach LOS	C			D			

Intersection Summary			
HCM Average Control Delay	32.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	2037	0	0	0	0	0	360	523	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0						4.0	4.0			
Lane Util. Factor		0.86						0.91	0.91			
Frpb, ped/bikes		1.00						0.98	0.95			
Flpb, ped/bikes		1.00						1.00	1.00			
Frt		1.00						0.94	0.85			
Flt Protected		1.00						1.00	1.00			
Satd. Flow (prot)		6175						3038	1330			
Flt Permitted		1.00						1.00	1.00			
Satd. Flow (perm)		6175						3038	1330			
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	95	2484	0	0	0	0	0	439	638	0	0	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	2	2	0	0	0
Lane Group Flow (vph)	0	2573	0	0	0	0	0	737	336	0	0	0
Confl. Peds. (#/hr)	18		9	9		18	22		25	25		22
Confl. Bikes (#/hr)		1						31			1	1
Heavy Vehicles (%)	2%	2%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%
Turn Type	Perm								Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		52.5						28.5	28.5			
Effective Green, g (s)		53.0						29.0	29.0			
Actuated g/C Ratio		0.59						0.32	0.32			
Clearance Time (s)		4.5						4.5	4.5			
Vehicle Extension (s)		1.0						1.0	1.0			
Lane Grp Cap (vph)		3636						979	429			
v/s Ratio Prot								0.24				
v/s Ratio Perm		0.42							c0.25			
v/c Ratio		0.71						0.75	0.78			
Uniform Delay, d1		13.0						27.3	27.6			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		1.2						5.3	13.3			
Delay (s)		14.2						32.6	41.0			
Level of Service		B						C	D			
Approach Delay (s)		14.2			0.0			35.3			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	35	41	1250	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	3	44	52	1582	0	0
Pedestrians	4			9	3	
Lane Width (ft)	12.0			12.0	0.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				403		
pX, platoon unblocked						
vC, conflicting volume	902	13	4			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	902	13	4			
tC, single (s)	6.8	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	99	96	97			
cM capacity (veh/h)	271	1036	1625			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	47	579	1055
Volume Left	3	52	0
Volume Right	44	0	0
cSH	899	1625	1700
Volume to Capacity	0.05	0.03	0.62
Queue Length 95th (ft)	4	2	0
Control Delay (s)	9.2	1.0	0.0
Lane LOS	A	A	
Approach Delay (s)	9.2	0.3	
Approach LOS	A		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	1317	0	0	745	850	830	370	67	40	0	4
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0	-0.5			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91			0.95	0.88	0.91	0.91			1.00	
Frpb, ped/bikes	1.00	1.00			1.00	0.92	1.00	0.99			1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Frt	1.00	1.00			1.00	0.85	1.00	0.99			0.99	
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98			0.96	
Satd. Flow (prot)	1693	4866			3454	2479	1572	3173			1730	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98			0.96	
Satd. Flow (perm)	1693	4866			3454	2479	1572	3173			1730	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	42	1497	0	0	847	966	943	420	76	45	0	5
RTOR Reduction (vph)	0	0	0	0	0	538	0	4	0	0	4	0
Lane Group Flow (vph)	42	1497	0	0	847	428	471	964	0	0	46	0
Confl. Peds. (#/hr)	21		10	10		21	2		46	46		2
Confl. Bikes (#/hr)		1				1		13		4	1	
Heavy Vehicles (%)	3%	3%	0%	0%	1%	2%	1%	1%	2%	0%	0%	0%
Turn Type	Prot					Perm	Split			Split		
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	4.8	44.8			35.5	35.5	36.3	36.3			6.4	
Effective Green, g (s)	5.3	49.8			36.0	36.0	37.3	37.3			7.4	
Actuated g/C Ratio	0.05	0.49			0.35	0.35	0.37	0.37			0.07	
Clearance Time (s)	4.5	4.5			4.5	4.5	5.0	5.0			5.0	
Vehicle Extension (s)	2.5	2.0			2.0	2.0	2.5	2.5			2.5	
Lane Grp Cap (vph)	88	2376			1219	875	575	1160			126	
v/s Ratio Prot	0.02	c0.31			0.25		0.30	c0.30			c0.03	
v/s Ratio Perm						0.17						
v/c Ratio	0.48	0.63			0.69	0.49	0.82	0.83			0.37	
Uniform Delay, d1	47.0	19.3			28.3	25.8	29.3	29.5			45.1	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	3.0	0.4			1.4	0.2	8.7	5.1			1.3	
Delay (s)	50.0	19.7			29.7	26.0	38.0	34.6			46.4	
Level of Service	D	B			C	C	D	C			D	
Approach Delay (s)		20.5			27.7			35.7			46.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	38	0	3141	2434	393
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	42	0	3452	2675	432
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	4401	1337	2675			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4401	1337	2675			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	71	100			
cM capacity (veh/h)	1	146	158			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	42	1726	1726	1337	1337	432
Volume Left	0	0	0	0	0	0
Volume Right	42	0	0	0	0	432
cSH	146	1700	1700	1700	1700	1700
Volume to Capacity	0.29	1.02	1.02	0.79	0.79	0.25
Queue Length 95th (ft)	28	0	0	0	0	0
Control Delay (s)	39.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	E					
Approach Delay (s)	39.3	0.0		0.0		
Approach LOS	E					

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	95.0%	ICU Level of Service		F
Analysis Period (min)	15			

Appendix M Year 2031 Total Traffic Level-of-Service Worksheets

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	194	1490	44	0	2843
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	218	1674	49	0	3194
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	3271	837			1724	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3271	837			1724	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	29			100	
cM capacity (veh/h)	7	306			372	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	218	837	837	49	1597	1597
Volume Left	0	0	0	0	0	0
Volume Right	218	0	0	49	0	0
cSH	306	1700	1700	1700	1700	1700
Volume to Capacity	0.71	0.49	0.49	0.03	0.94	0.94
Queue Length 95th (ft)	127	0	0	0	0	0
Control Delay (s)	41.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	E					
Approach Delay (s)	41.3	0.0			0.0	
Approach LOS	E					

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	164	65	17	27	5	29
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59
Hourly flow rate (vph)	278	110	29	46	8	49
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			390		438	335
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			390		438	335
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	93
cM capacity (veh/h)			1177		564	710

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	388	29	46	58
Volume Left	0	29	0	8
Volume Right	110	0	0	49
cSH	1700	1177	1700	684
Volume to Capacity	0.23	0.02	0.03	0.08
Queue Length 95th (ft)	0	2	0	7
Control Delay (s)	0.0	8.1	0.0	10.7
Lane LOS		A		B
Approach Delay (s)	0.0	3.1		10.7
Approach LOS				B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	0	1	3	0	0	0	29	2	2	341	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	0	0	1	4	0	0	0	41	3	3	487	1
Pedestrians		4									2	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		4.0									4.0	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	542	542	492	538	541	45	493			44		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	542	542	492	538	541	45	493			44		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	450	448	579	454	448	1029	1078			1577		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	4	44	491
Volume Left	0	4	0	3
Volume Right	1	0	3	1
cSH	579	454	1078	1577
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	11.2	13.0	0.0	0.1
Lane LOS	B	B		A
Approach Delay (s)	11.2	13.0	0.0	0.1
Approach LOS	B	B		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	172	59	11	14	7	23	7	14	43	194	108
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	25	236	81	15	19	10	32	10	19	59	266	148
Pedestrians		2			1			7			3	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	32			323			664	394	284	367	430	29
vC1, stage 1 conf vol							332	332		57	57	
vC2, stage 2 conf vol							332	62		310	373	
vCu, unblocked vol	32			323			664	394	284	367	430	29
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			91	98	97	91	54	86
cM capacity (veh/h)	1590			1240			348	609	755	630	575	1044

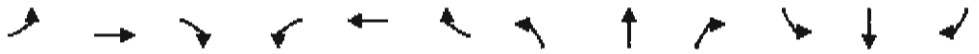
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	25	316	15	29	60	473
Volume Left	25	0	15	0	32	59
Volume Right	0	81	0	10	19	148
cSH	1590	1700	1240	1700	458	678
Volume to Capacity	0.02	0.19	0.01	0.02	0.13	0.70
Queue Length 95th (ft)	1	0	1	0	11	142
Control Delay (s)	7.3	0.0	7.9	0.0	14.1	21.6
Lane LOS	A		A		B	C
Approach Delay (s)	0.5		2.7		14.1	21.6
Approach LOS					B	C

Intersection Summary			
Average Delay	12.4		
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	235	78	30	115	1	23	0	13	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	5	313	104	40	153	1	31	0	17	1	0	1
Pedestrians		4						3			2	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	157			420			618	616	368	577	667	160
vC1, stage 1 conf vol							379	379		236	236	
vC2, stage 2 conf vol							239	237		341	431	
vCu, unblocked vol	157			420			618	616	368	577	667	160
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			95	100	97	100	100	100
cM capacity (veh/h)	1433			1147			568	545	680	563	502	886

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	5	417	40	155	48	3
Volume Left	5	0	40	0	31	1
Volume Right	0	104	0	1	17	1
cSH	1433	1700	1147	1700	604	688
Volume to Capacity	0.00	0.25	0.03	0.09	0.08	0.00
Queue Length 95th (ft)	0	0	3	0	6	0
Control Delay (s)	7.5	0.0	8.3	0.0	11.5	10.3
Lane LOS	A		A		B	B
Approach Delay (s)	0.1		1.7		11.5	10.3
Approach LOS					B	B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	125	6	40	91	7	43	89	164	29	60	43
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	25	156	8	50	114	9	54	111	205	36	75	54

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	189	50	123	370	165
Volume Left (vph)	25	50	0	54	36
Volume Right (vph)	8	0	9	205	54
Hadj (s)	0.09	0.50	0.00	-0.27	-0.11
Departure Headway (s)	5.8	6.7	6.2	5.0	5.4
Degree Utilization, x	0.31	0.09	0.21	0.51	0.25
Capacity (veh/h)	561	487	526	680	602
Control Delay (s)	11.4	9.2	9.7	13.1	10.3
Approach Delay (s)	11.4	9.6		13.1	10.3
Approach LOS	B	A		B	B

Intersection Summary				
Delay	11.5			
HCM Level of Service	B			
Intersection Capacity Utilization	44.2%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	0	0	9	0	4	3	292	40	18	85	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	6	0	0	12	0	6	4	406	56	25	118	4
Pedestrians		31						14			3	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		3						1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								510				
pX, platoon unblocked	0.95	0.95		0.95	0.95	0.95				0.95		
vC, conflicting volume	651	671	165	626	645	436	153			461		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	605	626	165	578	599	379	153			405		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	97	100	99	100			98		
cM capacity (veh/h)	362	363	852	387	377	636	1402			1105		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	6	18	465	147
Volume Left	6	12	4	25
Volume Right	0	6	56	4
cSH	362	440	1402	1105
Volume to Capacity	0.02	0.04	0.00	0.02
Queue Length 95th (ft)	1	3	0	2
Control Delay (s)	15.1	13.5	0.1	1.6
Lane LOS	C	B	A	A
Approach Delay (s)	15.1	13.5	0.1	1.6
Approach LOS	C	B		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	52	5	28	282	52	43
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	71	7	38	386	71	59
Pedestrians	47			6	2	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	4			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				393		
pX, platoon unblocked	0.91					
vC, conflicting volume	613	154	177			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	529	154	177			
tC, single (s)	6.4	6.5	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.6	2.4			
p0 queue free %	84	99	97			
cM capacity (veh/h)	432	781	1252			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	78	425	130
Volume Left	71	38	0
Volume Right	7	0	59
cSH	450	1252	1700
Volume to Capacity	0.17	0.03	0.08
Queue Length 95th (ft)	16	2	0
Control Delay (s)	14.7	1.0	0.0
Lane LOS	B	A	
Approach Delay (s)	14.7	1.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBT	WBR	NBL	NBT	SBR	SWR	SWR2
Lane Configurations							
Volume (vph)	510	72	119	209	52	523	9
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	1.00	1.00	*0.95	
Frpb, ped/bikes	1.00		1.00	1.00	0.97	1.00	
Flpb, ped/bikes	1.00		0.99	1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.86	0.98	
Flt Protected	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (prot)	3268		1509	1749	1537	3290	
Flt Permitted	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (perm)	3268		1509	1749	1537	3290	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.86	0.86
Adj. Flow (vph)	531	75	124	218	54	608	10
RTOR Reduction (vph)	0	0	85	0	41	0	0
Lane Group Flow (vph)	606	0	39	218	13	618	0
Confl. Peds. (#/hr)		6	16		16		
Confl. Bikes (#/hr)	3		3	35	7		
Heavy Vehicles (%)	5%	0%	14%	5%	0%	3%	40%
Turn Type			Perm		custom	custom	
Protected Phases	5			8		6	
Permitted Phases			8		4		
Actuated Green, G (s)	16.6		13.5	13.5	13.5	16.5	
Effective Green, g (s)	17.1		14.0	14.0	14.0	17.0	
Actuated g/C Ratio	0.28		0.23	0.23	0.23	0.28	
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	930		352	407	358	931	
v/s Ratio Prot	c0.19			c0.12		c0.19	
v/s Ratio Perm			0.03		0.01		
v/c Ratio	0.65		0.11	0.54	0.04	0.66	
Uniform Delay, d1	18.9		18.1	20.2	17.8	19.0	
Progression Factor	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.3		0.1	0.7	0.0	1.4	
Delay (s)	20.1		18.2	20.9	17.8	20.4	
Level of Service	C		B	C	B	C	
Approach Delay (s)	20.1			19.9			
Approach LOS	C			B			

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	1397	0	0	0	0	0	182	241	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0						4.0	4.0			
Lane Util. Factor		0.86						0.91	0.91			
Frpb, ped/bikes		1.00						1.00	0.99			
Flpb, ped/bikes		0.99						1.00	1.00			
Frt		1.00						0.94	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		5960						2896	1347			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		5960						2896	1347			
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	231	1570	0	0	0	0	0	204	271	0	0	0
RTOR Reduction (vph)	0	30	0	0	0	0	0	20	20	0	0	0
Lane Group Flow (vph)	0	1771	0	0	0	0	0	306	129	0	0	0
Confl. Peds. (#/hr)	29		4	4		29	6		1	1		6
Confl. Bikes (#/hr)							1	43				
Heavy Vehicles (%)	3%	5%	0%	0%	0%	0%	0%	11%	4%	0%	0%	0%
Turn Type	Perm								Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		52.5						28.5	28.5			
Effective Green, g (s)		53.0						29.0	29.0			
Actuated g/C Ratio		0.59						0.32	0.32			
Clearance Time (s)		4.5						4.5	4.5			
Vehicle Extension (s)		1.0						1.0	1.0			
Lane Grp Cap (vph)		3510						933	434			
v/s Ratio Prot								c0.11				
v/s Ratio Perm		0.30							0.10			
v/c Ratio		0.50						0.33	0.30			
Uniform Delay, d1		10.8						23.1	22.9			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		0.5						0.9	1.8			
Delay (s)		11.3						24.1	24.6			
Level of Service		B						C	C			
Approach Delay (s)		11.3			0.0			24.2			0.0	
Approach LOS		B			A			C			A	

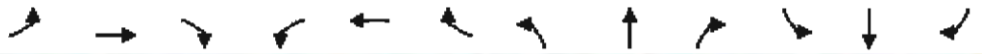
Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2	30	76	2	5	30	800	203	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.95				
Frpb, ped/bikes		0.98			1.00			0.99				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		0.87			0.99			0.97				
Flt Protected		1.00			0.96			1.00				
Satd. Flow (prot)		1568			1737			3278				
Flt Permitted		1.00			0.77			1.00				
Satd. Flow (perm)		1568			1390			3278				
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	2	33	84	2	6	33	889	226	0	0	0
RTOR Reduction (vph)	0	29	0	0	5	0	0	30	0	0	0	0
Lane Group Flow (vph)	0	6	0	0	87	0	0	1118	0	0	0	0
Confl. Peds. (#/hr)			2	2			1		17	17		1
Confl. Bikes (#/hr)	1						1	2			1	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)		5.0			5.0			25.8				
Effective Green, g (s)		5.0			5.0			25.8				
Actuated g/C Ratio		0.13			0.13			0.66				
Clearance Time (s)		4.0			4.0			4.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		202			179			2180				
v/s Ratio Prot		0.00										
v/s Ratio Perm					c0.06			0.34				
v/c Ratio		0.03			0.48			0.51				
Uniform Delay, d1		14.8			15.7			3.3				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.1			2.1			0.2				
Delay (s)		14.8			17.8			3.5				
Level of Service		B			B			A				
Approach Delay (s)		14.8			17.8			3.5			0.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	38.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	1300	0	0	547	688	550	292	43	54	0	52
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0	-0.5			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91			0.95	0.88	0.91	0.91			1.00	
Frpb, ped/bikes	1.00	1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Frt	1.00	1.00			1.00	0.85	1.00	0.99			0.93	
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98			0.98	
Satd. Flow (prot)	1744	4866			3387	2547	1541	3150			1594	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98			0.98	
Satd. Flow (perm)	1744	4866			3387	2547	1541	3150			1594	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	62	1529	0	0	644	809	647	344	51	64	0	61
RTOR Reduction (vph)	0	0	0	0	0	544	0	4	0	0	28	0
Lane Group Flow (vph)	62	1529	0	0	644	265	343	695	0	0	97	0
Confl. Peds. (#/hr)	6		4	4		6			10	10		
Confl. Bikes (#/hr)								6		9	1	
Heavy Vehicles (%)	0%	3%	0%	0%	3%	4%	3%	2%	3%	0%	0%	10%
Turn Type	Prot					Perm	Split			Split		
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	7.1	42.6			31.0	31.0	28.3	28.3			10.6	
Effective Green, g (s)	7.6	47.6			31.5	31.5	29.3	29.3			11.6	
Actuated g/C Ratio	0.08	0.50			0.33	0.33	0.31	0.31			0.12	
Clearance Time (s)	4.5	4.5			4.5	4.5	5.0	5.0			5.0	
Vehicle Extension (s)	2.5	2.0			2.0	2.0	2.5	2.5			2.5	
Lane Grp Cap (vph)	138	2413			1111	836	470	961			193	
v/s Ratio Prot	0.04	c0.31			0.19		c0.22	0.22			c0.06	
v/s Ratio Perm						0.10						
v/c Ratio	0.45	0.63			0.58	0.32	0.73	0.72			0.50	
Uniform Delay, d1	42.2	17.8			26.8	24.2	29.8	29.7			39.5	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	1.7	0.4			0.5	0.1	5.3	2.5			1.5	
Delay (s)	43.9	18.2			27.2	24.3	35.1	32.3			41.0	
Level of Service	D	B			C	C	D	C			D	
Approach Delay (s)		19.2			25.6			33.2			41.0	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	16	0	1680	2827	464
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	18	0	1888	3176	521
Pedestrians	9					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	4129	1597	3185			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4129	1597	3185			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	81	100			
cM capacity (veh/h)	2	97	98			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	18	944	944	1588	1588	521
Volume Left	0	0	0	0	0	0
Volume Right	18	0	0	0	0	521
cSH	97	1700	1700	1700	1700	1700
Volume to Capacity	0.19	0.56	0.56	0.93	0.93	0.31
Queue Length 95th (ft)	16	0	0	0	0	0
Control Delay (s)	50.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	50.6	0.0		0.0		
Approach LOS	F					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	493	2819	28	0	2472
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	542	3098	31	0	2716
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	4456	1549			3129	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4456	1549			3129	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	0			100	
cM capacity (veh/h)	1	104			104	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	542	1549	1549	31	1358	1358
Volume Left	0	0	0	0	0	0
Volume Right	542	0	0	31	0	0
cSH	104	1700	1700	1700	1700	1700
Volume to Capacity	5.21	0.91	0.91	0.02	0.80	0.80
Queue Length 95th (ft)	Err	0	0	0	0	0
Control Delay (s)	Err	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	Err	0.0			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	848.2		
Intersection Capacity Utilization	121.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	372	39	7	21	30	121
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	581	61	11	33	47	189
Pedestrians	1				52	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				4	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			694		719	664
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			694		719	664
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		88	57
cM capacity (veh/h)			871		376	444

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	642	11	33	236
Volume Left	0	11	0	47
Volume Right	61	0	0	189
cSH	1700	871	1700	429
Volume to Capacity	0.38	0.01	0.02	0.55
Queue Length 95th (ft)	0	1	0	81
Control Delay (s)	0.0	9.2	0.0	23.2
Lane LOS		A		C
Approach Delay (s)	0.0	2.3		23.2
Approach LOS				C

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	1	0	0	8	1	1	3	47	2	0	249	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	0	0	9	1	1	4	55	2	0	293	0
Pedestrians		5						1				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	363	363	299	357	361	56	298			58		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	363	363	299	357	361	56	298			58		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	98	100	100	100			100		
cM capacity (veh/h)	589	564	742	598	565	1016	1270			1560		

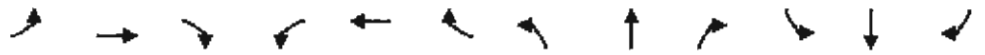
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	12	61	293
Volume Left	1	9	4	0
Volume Right	0	1	2	0
cSH	589	620	1270	1560
Volume to Capacity	0.00	0.02	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	11.1	10.9	0.5	0.0
Lane LOS	B	B	A	
Approach Delay (s)	11.1	10.9	0.5	0.0
Approach LOS	B	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	24.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	273	21	1	37	13	101	17	70	69	64	124
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	27	321	25	1	44	15	119	20	82	81	75	146
Pedestrians								40			3	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								3			0	
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	62			386			657	492	374	524	497	54
vC1, stage 1 conf vol							428	428		57	57	
vC2, stage 2 conf vol							229	64		468	440	
vCu, unblocked vol	62			386			657	492	374	524	497	54
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			74	96	87	82	86	86
cM capacity (veh/h)	1512			1144			460	539	655	462	533	1016

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	27	346	1	59	221	302
Volume Left	27	0	1	0	119	81
Volume Right	0	25	0	15	82	146
cSH	1512	1700	1144	1700	525	656
Volume to Capacity	0.02	0.20	0.00	0.03	0.42	0.46
Queue Length 95th (ft)	1	0	0	0	52	61
Control Delay (s)	7.4	0.0	8.1	0.0	16.8	15.1
Lane LOS	A		A		C	C
Approach Delay (s)	0.5		0.2		16.8	15.1
Approach LOS					C	C

Intersection Summary				
Average Delay	8.9			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	293	26	11	251	0	68	0	24	0	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	4	431	38	16	369	0	100	0	35	0	0	4
Pedestrians		1						28			6	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						2			1	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	375			497			894	894	478	882	913	376
vC1, stage 1 conf vol							487	487		407	407	
vC2, stage 2 conf vol							407	407		475	506	
vCu, unblocked vol	375			497			894	894	478	882	913	376
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			78	100	94	100	100	99
cM capacity (veh/h)	1188			1052			455	452	578	442	439	671

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	4	469	16	369	135	4
Volume Left	4	0	16	0	100	0
Volume Right	0	38	0	0	35	4
cSH	1188	1700	1052	1700	482	671
Volume to Capacity	0.00	0.28	0.02	0.22	0.28	0.01
Queue Length 95th (ft)	0	0	1	0	29	0
Control Delay (s)	8.0	0.0	8.5	0.0	15.4	10.4
Lane LOS	A		A		C	B
Approach Delay (s)	0.1		0.4		15.4	10.4
Approach LOS					C	B

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	14	119	9	161	140	21	143	96	152	51	156	91
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	17	142	11	192	167	25	170	114	181	61	186	108

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	169	192	192	465	355
Volume Left (vph)	17	192	0	170	61
Volume Right (vph)	11	0	25	181	108
Hadj (s)	0.03	0.52	-0.08	-0.15	-0.12
Departure Headway (s)	8.0	8.3	7.7	6.6	6.9
Degree Utilization, x	0.38	0.44	0.41	0.85	0.68
Capacity (veh/h)	410	394	427	525	490
Control Delay (s)	15.7	16.5	14.7	36.8	23.4
Approach Delay (s)	15.7	15.6		36.8	23.4
Approach LOS	C	C		E	C

Intersection Summary			
Delay	24.8		
HCM Level of Service	C		
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Volume (veh/h)	8	0	7	39	0	19	7	365	17	9	319	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	10	0	9	48	0	23	9	445	21	11	389	9
Pedestrians		39						9			1	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		3						1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								510				
pX, platoon unblocked	0.97	0.97		0.97	0.97	0.97				0.97		
vC, conflicting volume	951	937	441	905	931	456	437			466		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	932	918	441	885	912	421	437			431		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	99	80	100	96	99			99		
cM capacity (veh/h)	215	252	596	244	254	615	1097			1102		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	71	474	409
Volume Left	10	48	9	11
Volume Right	9	23	21	9
cSH	307	304	1097	1102
Volume to Capacity	0.06	0.23	0.01	0.01
Queue Length 95th (ft)	5	22	1	1
Control Delay (s)	17.5	20.4	0.2	0.3
Lane LOS	C	C	A	A
Approach Delay (s)	17.5	20.4	0.2	0.3
Approach LOS	C	C		

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	85	43	105	304	228	137
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	102	52	127	366	275	165
Pedestrians	41			7	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	3			1	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				393		
pX, platoon unblocked	0.91					
vC, conflicting volume	1019	405	481			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	971	405	481			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	53	92	88			
cM capacity (veh/h)	218	624	1050			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	154	493	440
Volume Left	102	127	0
Volume Right	52	0	165
cSH	279	1050	1700
Volume to Capacity	0.55	0.12	0.26
Queue Length 95th (ft)	77	10	0
Control Delay (s)	32.7	3.3	0.0
Lane LOS	D	A	
Approach Delay (s)	32.7	3.3	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBT	WBR	NBL	NBT	SBR	SWR	SWR2
Lane Configurations							
Volume (vph)	886	158	295	186	271	524	50
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	1.00	1.00	*0.95	
Frpb, ped/bikes	0.99		1.00	1.00	0.95	1.00	
Flpb, ped/bikes	1.00		0.97	1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.86	0.98	
Flt Protected	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (prot)	3295		1680	1818	1501	3309	
Flt Permitted	1.00		0.95	1.00	1.00	1.00	
Satd. Flow (perm)	3295		1680	1818	1501	3309	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	984	176	328	207	301	582	56
RTOR Reduction (vph)	0	0	28	0	28	0	0
Lane Group Flow (vph)	1160	0	300	207	273	638	0
Confl. Peds. (#/hr)		15	23		23		
Confl. Bikes (#/hr)	1	1	1	29	7		
Heavy Vehicles (%)	3%	2%	1%	1%	1%	3%	3%
Turn Type			Perm		custom	custom	
Protected Phases	5			8		6	
Permitted Phases			8		4		
Actuated Green, G (s)	32.4		18.0	18.0	18.0	19.0	
Effective Green, g (s)	32.9		18.5	18.5	18.5	19.5	
Actuated g/C Ratio	0.40		0.22	0.22	0.22	0.24	
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1308		375	406	335	778	
v/s Ratio Prot	c0.35			0.11		c0.19	
v/s Ratio Perm			0.18		c0.18		
v/c Ratio	0.89		0.80	0.51	0.82	0.82	
Uniform Delay, d1	23.3		30.5	28.2	30.6	30.0	
Progression Factor	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.4		11.0	0.4	13.4	6.6	
Delay (s)	30.7		41.4	28.6	44.0	36.6	
Level of Service	C		D	C	D	D	
Approach Delay (s)	30.7			36.5			
Approach LOS	C			D			

Intersection Summary			
HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	82.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	2048	0	0	0	0	0	366	523	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0						4.0	4.0			
Lane Util. Factor		0.86						0.91	0.91			
Frpb, ped/bikes		1.00						0.98	0.95			
Flpb, ped/bikes		1.00						1.00	1.00			
Frt		1.00						0.94	0.85			
Flt Protected		1.00						1.00	1.00			
Satd. Flow (prot)		6167						3040	1330			
Flt Permitted		1.00						1.00	1.00			
Satd. Flow (perm)		6167						3040	1330			
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	140	2498	0	0	0	0	0	446	638	0	0	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	2	2	0	0	0
Lane Group Flow (vph)	0	2629	0	0	0	0	0	744	336	0	0	0
Confl. Peds. (#/hr)	18		9	9		18	22		25	25		22
Confl. Bikes (#/hr)		1						31			1	1
Heavy Vehicles (%)	2%	2%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%
Turn Type	Perm								Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		52.5						28.5	28.5			
Effective Green, g (s)		53.0						29.0	29.0			
Actuated g/C Ratio		0.59						0.32	0.32			
Clearance Time (s)		4.5						4.5	4.5			
Vehicle Extension (s)		1.0						1.0	1.0			
Lane Grp Cap (vph)		3632						980	429			
v/s Ratio Prot								0.24				
v/s Ratio Perm		0.43							c0.25			
v/c Ratio		0.72						0.76	0.78			
Uniform Delay, d1		13.3						27.4	27.6			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		1.3						5.5	13.3			
Delay (s)		14.5						32.9	41.0			
Level of Service		B						C	D			
Approach Delay (s)		14.5			0.0			35.4			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1	35	152	1	11	41	1250	117	0	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.95				
Frpb, ped/bikes		0.96			1.00			0.99				
Flpb, ped/bikes		1.00			0.99			1.00				
Frt		0.88			0.99			0.99				
Flt Protected		1.00			0.96			1.00				
Satd. Flow (prot)		1448			1712			3362				
Flt Permitted		0.98			0.71			1.00				
Satd. Flow (perm)		1426			1265			3362				
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	3	1	44	192	1	14	52	1582	148	0	0	0
RTOR Reduction (vph)	0	34	0	0	5	0	0	10	0	0	0	0
Lane Group Flow (vph)	0	14	0	0	202	0	0	1772	0	0	0	0
Confl. Peds. (#/hr)	3		9	9		3	4		23	23		4
Confl. Bikes (#/hr)			4				5	1		1		
Heavy Vehicles (%)	0%	0%	7%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)		13.4			13.4			38.3				
Effective Green, g (s)		13.4			13.4			38.3				
Actuated g/C Ratio		0.22			0.22			0.64				
Clearance Time (s)		4.0			4.0			4.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		320			284			2157				
v/s Ratio Prot												
v/s Ratio Perm		0.01			c0.16			0.53				
v/c Ratio		0.04			0.71			0.82				
Uniform Delay, d1		18.1			21.4			8.1				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.1			8.2			2.6				
Delay (s)		18.2			29.6			10.8				
Level of Service		B			C			B				
Approach Delay (s)		18.2			29.6			10.8			0.0	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	1302	0	0	729	887	832	391	67	109	0	77
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836	1836
Total Lost time (s)	4.0	-0.5			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91			0.95	0.88	0.91	0.91			1.00	
Frpb, ped/bikes	1.00	1.00			1.00	0.91	1.00	0.99			0.99	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Frt	1.00	1.00			1.00	0.85	1.00	0.99			0.94	
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98			0.97	
Satd. Flow (prot)	1693	4866			3454	2464	1572	3175			1672	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98			0.97	
Satd. Flow (perm)	1693	4866			3454	2464	1572	3175			1672	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	64	1447	0	0	810	986	924	434	74	121	0	86
RTOR Reduction (vph)	0	0	0	0	0	547	0	5	0	0	20	0
Lane Group Flow (vph)	64	1447	0	0	810	439	471	956	0	0	187	0
Confl. Peds. (#/hr)	21		10	10		21	2		46	46		2
Confl. Bikes (#/hr)		1				1		13		4	1	
Heavy Vehicles (%)	3%	3%	0%	0%	1%	2%	1%	1%	2%	0%	0%	0%
Turn Type	Prot					Perm	Split			Split		
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	7.7	45.2			33.0	33.0	38.0	38.0			14.0	
Effective Green, g (s)	8.2	50.2			33.5	33.5	39.0	39.0			15.0	
Actuated g/C Ratio	0.07	0.45			0.30	0.30	0.35	0.35			0.13	
Clearance Time (s)	4.5	4.5			4.5	4.5	5.0	5.0			5.0	
Vehicle Extension (s)	2.5	2.0			2.0	2.0	2.5	2.5			2.5	
Lane Grp Cap (vph)	124	2187			1036	739	549	1109			225	
v/s Ratio Prot	0.04	c0.30			c0.23		0.30	c0.30			c0.11	
v/s Ratio Perm						0.18						
v/c Ratio	0.52	0.66			0.78	0.59	0.86	0.86			0.83	
Uniform Delay, d1	49.8	24.1			35.8	33.3	33.8	33.9			47.1	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	2.7	0.6			3.6	0.9	12.4	7.0			21.9	
Delay (s)	52.5	24.7			39.4	34.2	46.2	40.9			69.0	
Level of Service	D	C			D	C	D	D			E	
Approach Delay (s)		25.9			36.5			42.6			69.0	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	111.7	Sum of lost time (s)	11.5
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	38	0	3312	2434	466
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	42	0	3640	2675	512
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	4495	1337	2675			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4495	1337	2675			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	71	100			
cM capacity (veh/h)	1	146	158			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	42	1820	1820	1337	1337	512
Volume Left	0	0	0	0	0	0
Volume Right	42	0	0	0	0	512
cSH	146	1700	1700	1700	1700	1700
Volume to Capacity	0.29	1.07	1.07	0.79	0.79	0.30
Queue Length 95th (ft)	28	0	0	0	0	0
Control Delay (s)	39.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	E					
Approach Delay (s)	39.3	0.0		0.0		
Approach LOS	E					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

Appendix N Year 2031 Mitigated Total Traffic Level-of-Service Worksheets

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	194	1490	44	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0	4.0	4.0		
Lane Util. Factor		0.88	0.95	1.00		
Frt		0.85	1.00	0.85		
Flt Protected		1.00	1.00	1.00		
Satd. Flow (prot)		2641	3387	1561		
Flt Permitted		1.00	1.00	1.00		
Satd. Flow (perm)		2641	3387	1561		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	218	1674	49	0	0
RTOR Reduction (vph)	0	53	0	0	0	0
Lane Group Flow (vph)	0	165	1674	49	0	0
Heavy Vehicles (%)	0%	4%	3%	0%	0%	2%
Turn Type		custom		Free		
Protected Phases		8	2			
Permitted Phases				Free		
Actuated Green, G (s)		9.1	42.8	59.9		
Effective Green, g (s)		9.1	42.8	59.9		
Actuated g/C Ratio		0.15	0.71	1.00		
Clearance Time (s)		4.0	4.0			
Vehicle Extension (s)		3.0	3.0			
Lane Grp Cap (vph)		401	2420	1561		
v/s Ratio Prot		c0.06	c0.49			
v/s Ratio Perm				0.03		
v/c Ratio		0.41	0.69	0.03		
Uniform Delay, d1		23.0	4.8	0.0		
Progression Factor		1.00	1.00	1.00		
Incremental Delay, d2		0.7	0.9	0.0		
Delay (s)		23.7	5.7	0.0		
Level of Service		C	A	A		
Approach Delay (s)	23.7		5.5			0.0
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	493	2819	28	0	0
Ideal Flow (vphpl)	1836	1836	1836	1836	1836	1836
Total Lost time (s)		4.0	4.0	4.0		
Lane Util. Factor		0.88	0.95	1.00		
Frt		0.85	1.00	0.85		
Flt Protected		1.00	1.00	1.00		
Satd. Flow (prot)		2719	3454	1561		
Flt Permitted		1.00	1.00	1.00		
Satd. Flow (perm)		2719	3454	1561		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	519	2967	29	0	0
RTOR Reduction (vph)	0	8	0	0	0	0
Lane Group Flow (vph)	0	511	2967	29	0	0
Heavy Vehicles (%)	0%	1%	1%	0%	0%	2%
Turn Type		custom		Free		
Protected Phases		8	2			
Permitted Phases				Free		
Actuated Green, G (s)		25.0	117.0	150.0		
Effective Green, g (s)		25.0	117.0	150.0		
Actuated g/C Ratio		0.17	0.78	1.00		
Clearance Time (s)		4.0	4.0			
Vehicle Extension (s)		3.0	3.0			
Lane Grp Cap (vph)		453	2694	1561		
v/s Ratio Prot		c0.19	c0.86			
v/s Ratio Perm				0.02		
v/c Ratio		1.13	1.10	0.02		
Uniform Delay, d1		62.5	16.5	0.0		
Progression Factor		1.00	1.00	1.00		
Incremental Delay, d2		81.9	52.0	0.0		
Delay (s)		144.4	68.5	0.0		
Level of Service		F	E	A		
Approach Delay (s)	144.4		67.8			0.0
Approach LOS	F		E			A

Intersection Summary			
HCM Average Control Delay	79.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	105.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Riverfront Ecological Analysis and Design

Eugene Water and Electric Board Site

Eugene, Oregon

FINAL REPORT SUMMARY
FOR MASTER PLAN IMPLEMENTATION PROCESS

September 16, 2011

Consultant Team

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Justin Simms

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List of Figures and Tables

Acknowledgements

This report has been summarized from the following publication by the lead author with additional clarifications specific to the purpose of helping to guide Master Plan implementation for the redevelopment of the EWEB riverfront property.

Johnson, B. R., A. R. Ferguson and J. T. Simms. 2010. Riverfront Ecological Analysis and Design, Eugene Water and Electric Board Site, Eugene, Oregon. 70 pages. Eugene Oregon: Eugene Water and Electric Board.

We wish to acknowledge a number of people who lent their expertise to the original assessment. In particular, Bruce Newhouse of Salix Associates reviewed our species lists, plant communities and management species recommendations. In addition, the design team from Rowell Brokaw Architects was exceptionally willing to engage in collaborative work sessions to improve the ecological and experiential qualities of the master plan design proposals.

Purpose and Scope of the Summary Report

The purpose of this summary is to support the land use actions needed to establish the master plan framework. In particular, it is intended to provide guidelines for achieving the goals of the master plan in the code and implementation phases. Since the summary is a condensation of the original full report, the full report is referenced in the Master Plan Appendix.

The original report was developed for the master planning process of the 27-acre Riverfront Property owned by Eugene Water & Electric Board (Figure 1), which is moving its operations complex from the Willamette River at Ferry Street to Roosevelt Boulevard in West Eugene. The Memorandum of Understanding between the City and EWEB identifies this property as having "a high profile and significant potential to create and characterize the connection between downtown and the river and contribute to the identity of the entire community." EWEB's vision statement states:

> *"This Master Plan is based upon the understanding that our community's social, ecological, economic and sustainable concerns are interdependent. The redevelopment of the EWEB riverfront property offers the unique opportunity to advance these interests simultaneously for the benefit of all Eugene, and to revision our downtown riverfront as a place that participates actively and graciously with the community that surrounds it."*

Figure 1. The EWEB Riverfront Property.

Preface to the Summary

Of particular relevance to master plan code and implementation phases is the understanding that the full report devoted substantial attention to:

- Assessing what could be achieved in both ecological and experiential terms within the proposed open space envelope for the site and recommending targeted modifications to the open space envelope that respected the project's needs to balance and integrate ecological, economic and experiential success
- Providing recommendations for interweaving riparian vegetation and river edge complexity with design aesthetics and human use functions across the site to create an integrated design gradient of human use and ecological function.
- Analyzing the site for its current role and future potential as locally significant habitat and as a citywide/regional connector for terrestrial and aquatic species. In particular, assessing habitat values of different configurations of riparian vegetation patches and buffers, and of different river edge design opportunities for terrestrial and aquatic species.
- Identifying achievable ecological and educational opportunities on the site and recommend design and management treatments to achieve them. This included ways to achieve meaningful riverine ecological functions that are functionally and experientially integrated with development and recreational uses.

A fundamental tenet of the report was that:

> *"The decisions made now should represent not just thinking about current conditions and goals for the site, but rather a perspective of what the citizens of Eugene are likely to value most highly 50 to 100 years from now."*

The report emphasized two overarching principles in the application of both innovative and long-standing design strategies:

- *Do no harm*
- *Anchor key ecological values and opportunities in concert with human experiential and educational values*

As described in the section "Design and Management Strategies for Wildlife and People" of the full report, some of the specific steps recommended to achieving these ends included:

1) Enhancement, restoration and management of riparian native plant communities along the river's edge that are guided by specific attention to the needs of valued native wildlife species, as well as the experiential values provided for people.
2) Protection of existing native riparian trees on the site.
3) Regrading the steep upper bank above the Ordinary High Water Mark in selected areas to provide better visual access and proximity to the rivers' edge for people, and allow more reliable reestablishment and maintenance of desired native vegetation on the banks.
4) Maintenance of the existing narrow bands of 2-year floodplain and expansion of the 2-10 year floodplain in selected areas by bank modification and engineered restabilization to

simultaneously support terrestrial and aquatic species, and allow people greater access to the river's edge where desired.

5) Interweaving areas of wetland and upland prairie grasslands into the landscape above the top of bank for stormwater detention and infiltration, and a visually stimulating display of native wildflowers and grasses that is habitat for native birds, butterflies and insect pollinator species.
6) Creating a well-defined development zone adjacent to the open space that incorporates emerging sustainable development practices while also augmenting native habitats through such features as rooftop habitat gardens and the use of native plants in ornamental and stormwater settings.
7) The use of best emerging stormwater technologies and practices throughout the site to prevent further degradation to water quality or habitat function due to the new development, as well as to create visual interest and excitement.
8) The use of selected native tree, shrub and herbaceous species throughout the site to bring the aesthetic and ecological values of the river's edge back into the urban fabric.
9) Careful plant selection, design and management of native plant community types along the river's edge to promote biological diversity as well as create visual access and visual screening of the river as desired for aesthetic and experiential purposes.

To fulfill the integration of ecological functions and human experience envisioned in the master plan will require careful and critical attention to the details and the dynamism of how ecosystems work on daily, monthly and annual cycles, and over decades. Knowledge of how to accomplish this within an urban setting is growing rapidly and will be available to support such efforts now and over the coming decades. ***We have attempted to highlight such issues in this summary: they are essential components of fulfilling the ecological and experiential goals of the master plan.***

This summary of the full report is divided into the following sections:

Ecological Role and Site Context describes the site's historical and contemporary landscape context.

Floodplain and Riverbank Complexity provides a quantitative comparison of historical, current and proposed conditions in relation to several key measures of ecological function.

Vegetation Structure and Composition specifies a design palette of native plant species for each community type, a management framework, and potential locations for each community.

Design and Management Strategies for Wildlife and People briefly highlights key points from the full report that are important for master plan assessment and implementation.

Ecological Functions, Habitat Quantity and Habitat Quality summarizes the full report's description of five characteristics of ecological value and their relevance for master plan assessment and implementation.

The report ends with a list of four appendices from the full report that provide more detailed information to guide site development and management.

Ecological Role and Site Context

Portland Metro[1] provides the following definition of a Riparian Area:

> *"Land and vegetation adjacent to waterbodies such as streams, rivers, wetlands and lakes that are influenced by perennial or intermittent water and hydric soils (soils formed under periodic saturation or flooding). These areas are dynamic biological and physical systems that act as the interface between terrestrial (land) and aquatic (water) ecosystems."*

One of the most important zones of a riparian area is the floodplain, which Metro defines as "the area immediately adjacent to the stream or river channel that becomes inundated with overbank flows during large storm events." The floodplain by its very definition is a dynamic and changing environment. As described below, maintaining floodplain dynamism while simultaneously creating sufficient bank stabilization and flood protection to meet the needs of intensive human use and economic development is one of the key challenges of urban riparian restoration.

Recovery of riparian ecological function typically emphasizes restoration, defined by the Society for Ecological Restoration[2] as "the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed". Ecological science emphasizes that maintaining biodiversity and other important ecological functions depends primarily on the maintenance of dynamic ecological processes that create and maintain diversity, rather than the simple recreation of habitat structure itself. In this section we will analyze the historical and current ecological role of the EWEB site in relation to existing riparian vegetation and structure in public ownership on both the north and south sides of the Willamette River within the Eugene-Springfield metro area.

Historical and Desired Conditions

The historical plant communities of the EWEB Riverfront Property are described by the 1850s General Land Office Survey, conducted roughly at the time of Euro-American settlement. Figure 2 shows the landscape mosaic of riparian forest (bright green), wetland and upland prairie (pale green and tan), and oak savanna (brown) that comprised the majority of the valley floor and lower foothills. The red arrow indicates the approximate location of the EWEB site. Today, riparian forest occupies less than 20% of its historical area along this reach of the Willamette River.

The survey shows that circa 1850 a majority of the 27-acre EWEB site was covered by riparian bottomland forest with a small sliver of upland prairie in the southwest corner (Figure 3). Riparian forest occupied the north bank of the river as well, with areas of oak savanna and upland prairie bracketing the riparian forest on both sides of the river. During this time, the riparian bottomland forests of the Willamette Valley included a diverse mosaic of bushy thickets, marshes, and tree stands averaging 1-2 miles in width[3].

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[1] Portland Metro. January 2002. Technical Report for Goal 5, Revised Draft.

[2] Society for Ecological Restoration International Science & Policy Working Group. 2004. The SER International Primer on Ecological Restoration. www.ser.org & Tucson: Society for Ecological Restoration International.

[3] Hulse, D. W., S. V. Gregory, and J. P. Baker. 2002. Willamette River Basin: Trajectories of environmental and ecological change. Oregon State University Press, Corvallis, OR.

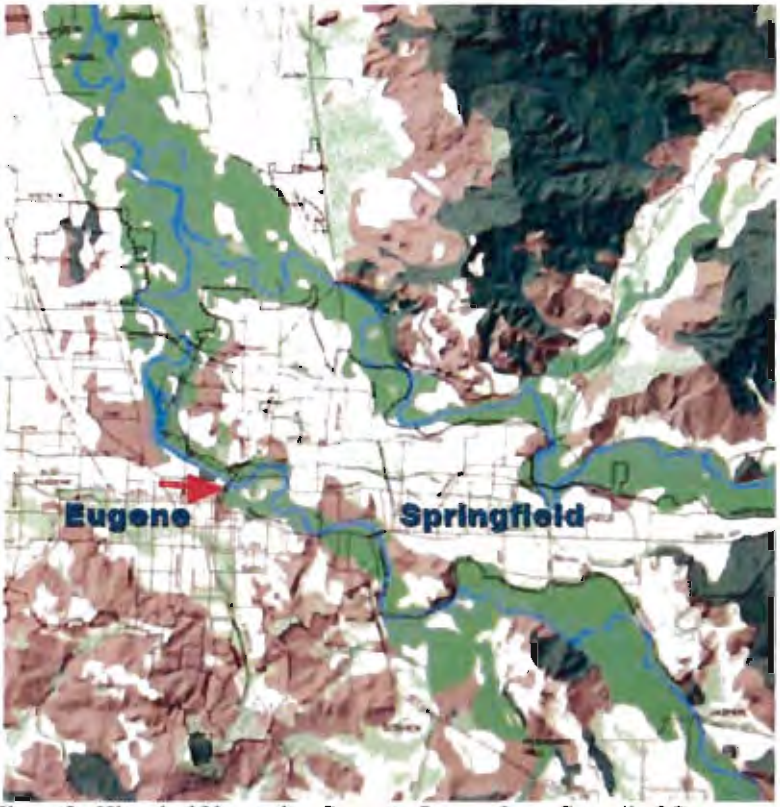

Figure 2. Historical Vegetation Context. Source: Lane Council of Governments.

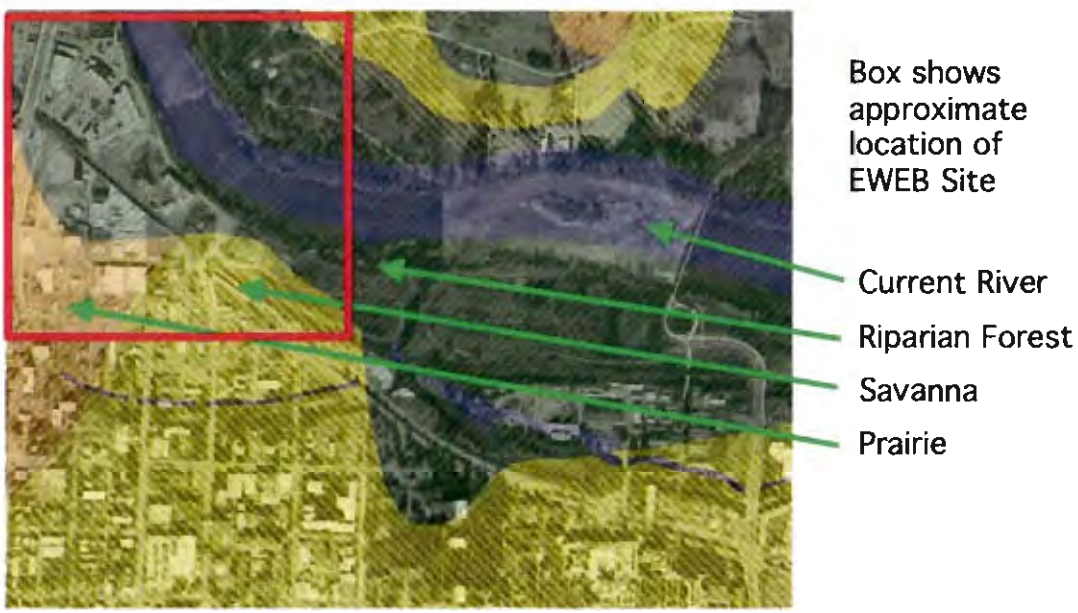

Figure 3. Overlay of 1850 vegetation on current airphoto of EWEB site. *Note: in 1850 the main channel of the Willamette River was located further north along the current Alton Baker Park canoe canal. Location of current river shown for reference only.*

The physical environment of the Willamette River was composed of three channel types: the primary channel with the most flow, side channels connected to the main channel forming islands, and blind channels connected at one end such as alcoves or sloughs[4]. In terms of area, 70-80% of the islands and side channels have been lost in this reach, and 40% of the alcoves and 20% of the primary channel had been lost by 1995.

This historically complex bankline created by multiple channels, alcoves and sloughs, increased the riparian area affected by the flood-pulse. The regular advance and retreat of water on the floodplain was the driving force that historically sustained biological productivity and diversity in the riparian zone. Bankline degradation due to artificial barriers such as riprap armoring has dramatically reduced the ability of the Willamette River to disperse water, soil and nutrients to the floodplain. Metro[5] states this hydrologic fragmentation caused by disrupting lateral and downstream stream floodplain interactions, eliminates riparian vegetation, increases flood heights and water velocities, and reduces sinuosity, leading to increased bank and channel erosion and channel incision. Figure 4 depicts some of the necessary attributes of healthy river habitat.

Figure 4. Components of a healthy river system.

Current Ecological Conditions and Context

One of the important ways to assess the current and potential ecological value of the EWEB site is to consider its context within the patchwork of formerly continuous riparian forest. To this end, we examined existing riparian vegetation on both the north and south sides of the Willamette River

[4] Ibid.

[5] Portland Metro. January 2002. Technical Report for Goal 5, Revised Draft.

beginning at the confluence of the Coast and Mid Forks and moving downstream to the confluence of the Main Stem with the McKenzie River in order to assess the role that the EWEB site may play as habitat and as a potential stepping stone for wildlife species movement along the Willamette River. We summarize the detailed assessment of the full report as follows.

As can be seen in Figure 5, tbe majority of the area along the Willamette River in the area covered by this assessment is comprised of urban development. Large lengths of this approximately 12-mile reach have only a narrow band of riparian vegetation at best. There are, however, enough areas of wider forested habitat to support a broad array of terrestrial and aquatic species that live, feed, breed and reproduce along the river as well as those that use it as a movement corridor across larger stretches of the landscape. The EWEB site appears to have the ecological potential to help preserve some level of habitat connectivity along the relatively depauperate south bank of the river. In particular, it can serve as a link between the larger Skinner Butte Park to the west, and the small but high-quality backwater slough habitat on the UO property to the east. This offers the potential to create a substantial habitat zone on both the north and south sides of the Willamette River, which occurs almost nowhere else in Eugene. The EWEB site can thus play an important role in creating a larger habitat stepping stone within the Eugene stretch of the Willamette River.

In this regard, the southeastern end of the EWEB site could have substantially greater ecological value if the narrow floodplain bench along that stretch could be widened to accommodate greater floodplain habitat that would directly augment the size of the backwater and floodplain habitat on the adjacent University of Oregon (UO) property. However the contaminated soils over the top of bank on this part of the EWEB site make it impossible to perform such a restoration without addressing the issue of removing contaminated soils. Overall, however, the site's location and context offer a good opportunity for it to serve as an ecological "stepping stone" for wildlife movement between UO property and Skinner Butte Park, and to help create riparian habitat on both sides of the river – a relatively rare condition in the Eugene-Springfield metro area.

Figure 5: Aerial photo of the Mainstem Willamette River showing area of assessment.

Floodplain and Riverbank Complexity

In this section we compare the historical floodplain structure and complexity of the site circa 1910 to current conditions, and then compare current conditions to those proposed by the master planning design team. We have included:

A) An assessment of the Ordinary High Water Mark (OHWM) boundary of the Willamette River along the EWEB Riverfront

B) A comparison of historical (1910), current and proposed floodplain form based on NOAA Weather Service river gauge data from 1990 through 2009 through the following maps:
   1) An overlay of a current aerial photograph with EWEB property boundary onto 1910 topographical map
   2) An overlay of a current aerial photograph with EWEB property boundary onto LCOG 2ft contour data.
   3) Three maps of historical, current, and proposed floodplains, each showing four flood recurrence intervals (2 yr, 5 yr, 10 yr, and 20 yr)
   4) A table and narrative comparison of historical, current and proposed floodplains by acreage area, length, configuration and percentage of functional capacity.

C) Narrative recommendations for improving the ecological function of the current design proposal that explore various interactions and tradeoffs among design and ecological function based on modifications of bank topography and river edge complexity.

A & B Comparison of Historical, Current & Proposed Conditions and Function Assessment

Evaluating historical riparian floodplain functions provides reference conditions necessary to assess ecological changes over time, including future development plans. A sequence of flood elevations increasing in magnitude have been calculated and then mapped to measure aquatic functions. This analysis of historical, current and proposed site conditions fulfills the request for a Habitat Inventory and Assessment made during public interviews and focus groups.

The geomorphology of the current 2010 Riverfront floodplain is accurately mapped by two-foot elevation contours in the Lane Council of Governments Geographic Information System data. In contrast, the U.S. Geological Survey created the earliest topographic map (Figure 6) of Eugene using five-foot contour intervals, which provide the basis for the historical riverfront floodplain as reference conditions a century ago.

Metro defines reference condition as "representing the optimal or best attainable conditions for habitats or ecosystems." Through topographical analysis, current and historical floodplains are mapped to show the Willamette River Channel Migration Zone or lateral extent of likely channel movement over the past 100-year period.

Figure 6. 1910 USGS Topo Map.

Figure 7. Water Gauge Location.

Figure 8. Water Gauge.

We were fortunate to have a NOAA Weather Service river gauge onsite at the inlet structure to the EWEB steam plant (Figures 7 & 8). The gauge provides Willamette River level data from 1990 to the present, which allows accurate calculation of a 20+ year flood recurrence interval. The floodplain is divided into 4 sections by flood recurrence intervals of 2 years, 5 years, 10 years, and 20+ years. The 2-year flood is generally synonymous with the bankfull river level and Ordinary High Water Mark (OHWM). The Environmental Protection Agency describes bankfull as "originally used to describe the incipient elevation on the bank where flooding begins." The Code of Federal Regulations defines the OHWM as follows:

> *"The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."*

The recurrence interval for this 2-year floodplain was determined by listing the highest water level for each of the last 20 years and then ranking the water elevations in descending order. These elevations were averaged to find the flood elevation with a 50% probability of occurrence in any year. It is important to note that throughout a given year the river level is normally below the OHWM or 2-year flood elevation. Similarly, the Ordinary Low Water Mark (OLWM) is determined by ranking the lowest river level for each of the 20 years of data then averaging for the normal low water level. This OLWM is the average baseflow of the river resulting from snowmelt and precipitation that infiltrates into the soil and eventually moves through the soil to the stream channel as groundwater. The recurrence interval for floodplains above OHWM are calculated from the 20 years of annual high water elevations by determining the probability of occurrence as 20% for a 5-year flood, 10% for a 10-year flood, and 1% for a 20+ year flood. (Figures 9, 10, and 11).

Date-Time	Data +390ft	2yr Fld	5yr Fld	10yr Fld	20yr Fld
20-Nov-1996 00:00	20.630				
18-Jan-2006 00:00	19.980				
03-Jan-1997 00:00	19.390				
05-Dec-1998 00:00	18.040				
18-Dec-1995 00:00	17.830				
11-Jan-2000 00:00	17.760				
01-Jan-1999 00:00	17.690				
04-Jan-2007 00:00	17.550				
06-Jan-2009 00:00	17.530				
09-Dec-1991 00:00	17.240				
30-Dec-2008 00:00	16.800				
14-Dec-2003 00:00	16.760				
30-Apr-1990 00:00	16.510				
31-Dec-2005 00:00	16.320				
20-Dec-2001 00:00	16.310				
04-Jun-1993 00:00	16.260				
31-Dec-2002 00:00	15.980				
11-Dec-1992 00:00	15.050				
02-Feb-2004 00:00	14.940				
02-Dec-1994 00:00	14.770				

Figure 9. Flood Level Data.

Date-Time	Data +390ft	OLWM
30-Aug-1999 00:00	9.750	
11-Jul-1991 00:00	9.690	
15-Dec-1997 00:00	9.650	
12-May-1998 00:00	9.560	
04-Apr-1995 00:00	9.530	
05-Jul-1996 00:00	9.510	
05-Nov-2003 00:00	9.490	
06-Jul-2007 00:00	9.470	
15-Dec-2009 00:00	9.470	
26-May-1992 00:00	*9.340*	
13-Dec-2000 00:00	9.340	
02-Jan-1990 00:00	9.320	
01-Jul-2004 00:00	9.320	
08-Dec-2008 00:00	9.290	
09-Dec-2002 00:00	9.270	
28-Nov-1993 00:00	9.250	
13-Jul-2006 00:00	9.250	
17-Jul-2001 00:00	9.140	
17-Feb-2005 00:00	8.490	
10-Apr-1994 00:00	8.460	

Figure10. Low Water Data.

	Data	Rnd. 0.5ft	Prob.
OLWM	9.33	9.5	50%
2yr Flood	17.02	17	50%
5yr Flood	17.99	18	20%
10yr Flood	19.96	20	10%
20+yr Flood	20.6	20.5	1%

Figure11. Flood Elevations.

Floodplain elevations developed in this report (Figure 12) were based on the NOAA river gauge location adjacent to the EWEB steam plant and adjusted to account for the Willamette River slope for locations upstream and downstream along the Riverfront property. The river slope was determined by noting the location of topographical contours crossing the river using the current LCOG GIS data then measuring the distance along the centerline of the river to calculate the rise and run. Along the Riverfront site the Willamette River slope is approximately -0.125% or 1ft drop across 800 ft downstream.

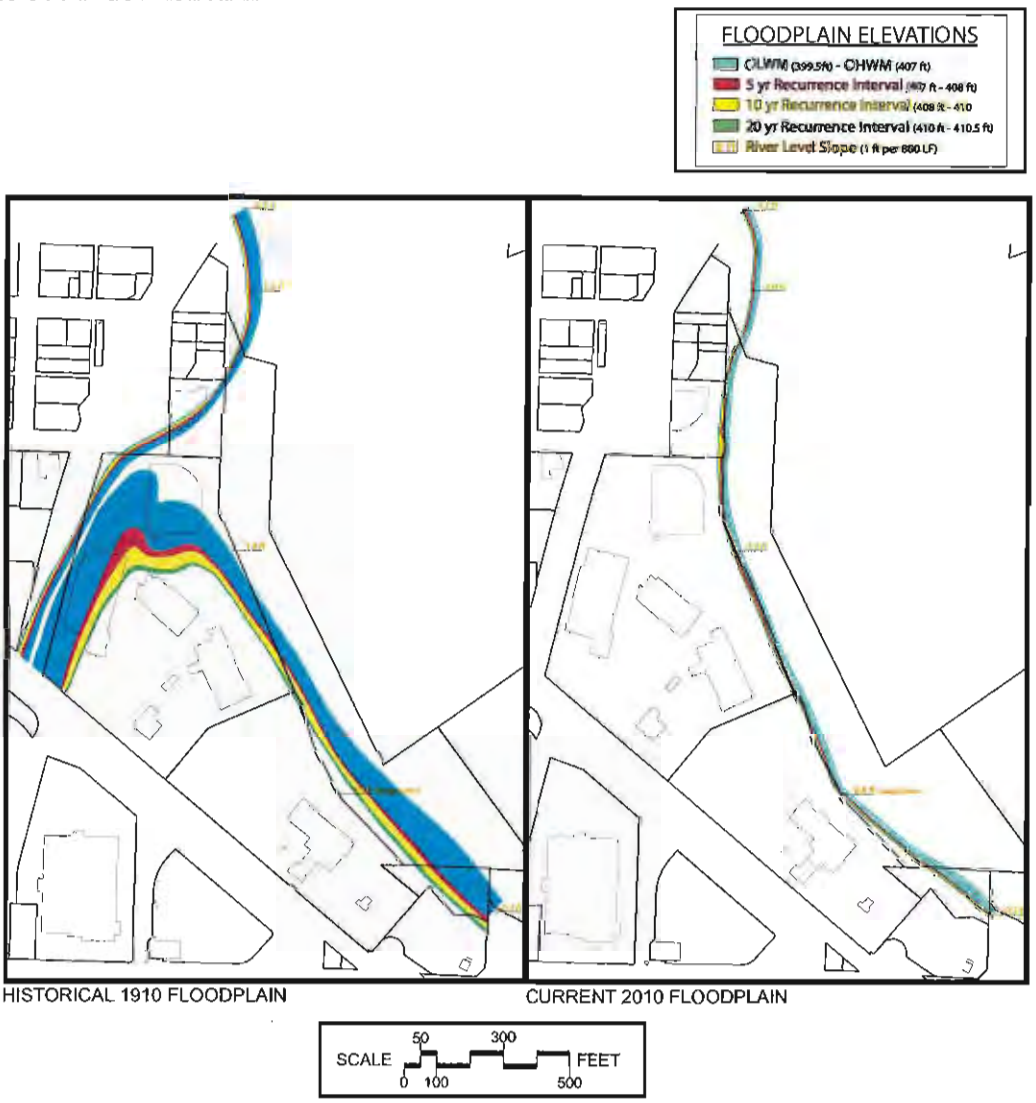

Figure 12. 1910 and Current Floodplain Elevations. The historical Millrace channel, itself based upon an old meander channel of the Willamette River is a prominent feature on the 1910 map.

The highest floodplain is listed on the maps and tables in green as a 20+ year recurrence interval because 20 years of river gauge data only allows calculation of a 20-year flood event. However, the highest flood elevation onsite of 20.6 feet above 390 feet datum occurred during the winter of 1996, which likely exceeded a 20-year event. After construction of the Willamette River dams was completed in the 1960s, the highest floods on record occurred in 1964 and 1996. The City of

Portland Office of Transportation lists the lower Willamette flood levels through downtown Portland as 30.5 feet in 1964 and 31.8 feet in 1996, indicating that the 1996 event was the largest flood event in the 60 years after hydrologic manipulation from the dams. The river gauge data on the EWEB Riverfront shows the flood level beginning to top out above the 10-year flood level of 20 feet above 390 feet datum. The 20-year flood level is only 0.6 feet above the 10-year flood because the water storage in the valley through Alton Baker Park across the river provides significant volume capacity at and above this elevation. Therefore, an increase in flood recurrence interval from 20-year to 100-year flooding should cause little increase in water elevation due to the large volume of storage in Alton Baker Park.[6]

Aquatic and Riparian Functions

The principal aquatic and riparian functions calculated for the floodplain were water storage volume, primary production area, and habitat support extent. These in turn form the basis of riparian and aquatic habitat, and associated biodiversity. The presence of water and vegetation are the basis of a riparian wetland area, which provides numerous secondary functions such as sediment stabilization, thermoregulation, and nutrient removal. These three functions thus help represent a wide array of ecological functions and ecosystem services performed by riparian areas. The following descriptions of three aquatic functions are developed from the Hydrogeomorphic (HGM) Assessment of Oregon Wetland and Riparian Sites for the Willamette Valley Ecoregion Riverine Impounding and Slope/Flat Subclasses[7].

Water Storage Volume: "The capacity of a wetland or riparian area to store or delay the down-slope movement of surface water for long or short periods, and in doing so to potentially influence the height, timing, duration, and frequency of inundation in downstream or downslope areas."

Primary Production Area: The amount of riparian vegetation provides a measure of the area available for *primary production*, defined as the "capacity of a wetland or riparian area to use sunlight to create particulate organic matter (or wood), leaves and detritus through photosynthesis, which forms the basis of the food web and maintains water quality."

Habitat Support Extent: The capacity of a wetland or riparian site to support the life requirements of most aquatic-dependent species native to temperate regions. Habitat support for riparian species includes resident and anadromous fish, invertebrates, amphibians and turtles, waterbirds, mammals and songbirds. Both the linear extent and width of riparian habitat constitute key metrics.

These three aquatic functions were derived from the floodplain maps by simple quantifying measurements, which do not consider the quality of the site. Water storage volume was calculated by assessing bankline slope and flood area to determine the additional volume provided in each floodplain level as cubic feet. This measurement gives a general view of the floodplain capacity to store and delay down slope movement of water. Primary production area was calculated as the area of each floodplain level in square feet and acreage to give an overview of the potential growth zone for riparian vegetation. Habitat support extent was calculated as the linear feet of river bankline at each level and the maximum and minimum width of each floodplain to assess the dimensions available for riparian species use.

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[6] We note that the 100-year flood level on this property according to FEMA maps is 417-418'. Other sources have indicated likelihood that the actual flood elevation would he closer to 422'. All proposals made in the master plan are thus concepts that need to be investigated and engineered.

[7] Can be obtained at http://oregon.gov/DSL/WETLAND/hgm_guidebook.shtml using the Forms|Publications link

Current conditions are highly altered from historical conditions with steeper banks, less water storage volume, less vegetated area, and shorter, narrower habitat corridors. Proposed modifications represent only modest returns toward historical conditions (Table 1). The substantial losses of these in relation to historical conditions are illustrated in Table 2 by the percent change of current and proposed conditions from historical = 100%. Although the increased functionality of the proposed design represents only modest gains in relation to historical conditions, in some cases it represents substantial gains over current conditions, as seen in Table 2 in the second column for each function.

Table 1. Comparison of Current, Historical and Proposed Function Metrics.

	Water Storage Volume		**Primary Production Area**		**Habitat Support Extent**	
	Avg. Bank Slope	Cubic Feet	Square Feet	Acres	Linear Feet	Width Ft Max / Min
2 yr Fldpln						
Historical	13%	812847	216759	4.98	4076	176/12
Current	44%	159589	42557	0.98	2468	34/9
Proposed	40%	182288	46684	1.07	2684	52/9
5 yr Fldpln						
Historical	8%	16384	32768	0.75	3787	56/2
Current	37%	2895	5789	0.13	2456	7/1
Proposed	34%	3082	6164	0.14	2672	7/1
10 yr Fldpln						
Historical	12%	54916	54916	1.26	3710	57/4
Current	35%	12127	12127	0.28	2457	19/3
Proposed	31%	18662	18662	0.43	2673	19/3
20+ yr Fldpln						
Historical	8%	5280	21120	0.48	3657	18/1
Current	34%	889	3556	0.08	2452	4/1
Proposed	30%	1658	6632	0.15	2668	4/1

Table 2. Current and Proposed Aquatic Functions Capacity. For each category, the first column shows % changes from historical reference conditions as 100%. "Change" for current conditions is based on historical conditions; for proposed conditions is based on current conditions.

	Water Storage		**Primary Production**		**Habitat Support**	
2 yr Fldpln						
Historical	100%	Change	100%	Change	100%	Change
Current	25%	-75%	20%	-80%	15%	-85%
Proposed	27%	+8%	21%	+5%	22%	+47%
5 yr Fldpln						
Historical	100%	Change	100%	Change	100%	Change
Current	20%	-80%	17%	-83%	9%	-91%
Proposed	21%	+5%	19%	+12%	10%	+11%
10 yr Fldpln						
Historical	100%	Change	100%	Change	100%	Change
Current	28%	-72%	22%	-78%	24%	-76%
Proposed	37%	+32%	34%	+55%	26%	+8%
20+ yr Fldpln						
Historical	100%	Change	100%	Change	100%	Change
Current	21%	-79%	17%	-83%	11%	-89%
Proposed	29%	+38%	31%	+82%	19%	+73%

Current Floodplain Form and Function

Historical placement of fill (Figure 13) and riprap armoring on the riverfront has channelized the Willamette River by changing and straightening the natural waterway. As a result, the floodplain has been decreased from 7.5 acres in 1910 to the current 1.5 acre area, for a total loss of 6 acres of floodplain onsite. Now the average slope of the bankline is 34-44%; dramatically steeper than the historical average of 8-13%. Consequently, the water storage capacity was five times greater historically than the current conditions and represents the carrying capacity of the natural resource according to Statewide Planning Goal 5. Further, this historical floodplain area is an integral part of the layers of Eugene's history embedded in the site, contributing to the sites identity as emphasized in the Guiding Principles for master planning.

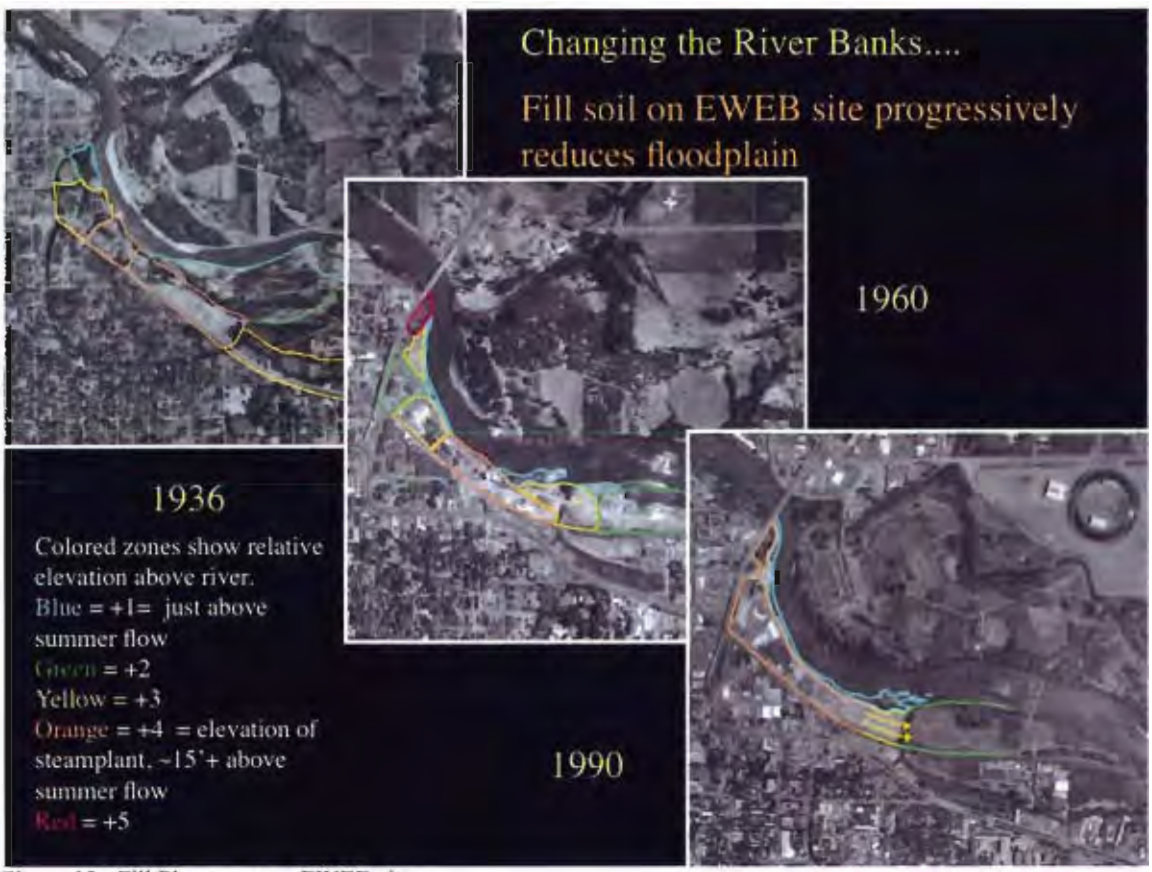

Figure 13. Fill Placement on EWEB site.

Full restoration of this historical floodplain would require excavation and removal of approximately 24,000 cubic yards of fill material from the Riverfront. The increased elevation created by this fill has eliminated riparian bottomland, which significantly diminishes the aquatic functions from reference conditions. Restoring the floodplain would support the objective of "connecting the river to the city and the city to the river," while maintaining a public river edge. Fill removal also serves the Rivers to Ridges plans to "enhance floodplains for their habitat, flood protection, water quality, recreation, and scenic values." Further, the Statewide Planning Goal 5 encourages protection of historically and ecologically unique natural areas and management of water levels for fish, wildlife,

pollution abatement, and recreation. However, the amount of floodplain restoration that could be done on this site is dependent on political and community support and economic viability.

Given the volume and unknown quality of much of the fill material, the strong flow of the river as it pushes against the outer bank of this curving portion of the river, and the economic value of this site, it is unlikely to be considered a high priority site for ecological restoration alone. However, there are a number of important things that could be done to enhance both ecological functions and human experiential values in highly complementary ways. A significant length of riverfont exists between the EWEB headquarters and the steam plant building, providing approximately 800 feet of bankline available for potential modifcation, especially above the Ordinary High Water Mark.

C. Recommendations for improving the ecological function of the current design proposal that explore various interactions and tradeoffs among design and ecological function based on modifications of bank topography and river edge complexity.

In the full report, we used the design concept representative sections created by Rowell Brokaw Architects to assess the expected effects of the proposed EWEB Riverfront Master Plan on aquatic functions of the Willamette River ecosystem in comparison to current and historical site conditions. This summary assumes that the baseline configuration of the master plan has been retained. Based on current master plan documents, there has been a moderate increase in upper bank excavation, which would increase the 10-year and 20-year floodplain extent and potential riparian functions of these areas. Given that the master plan has incorporated these recommendations, we have omitted the remainder of this Section C from the summary report. Readers who wish to review this section should refer to the full report.

Vegetation Composition and Structure

In this section, we provide recommendations for riparian and riverine plant communities for the EWEB site that serve habitat functions for terrestrial and aquatic wildlife as well as experiential qualities of aesthetics, comfort and safety for people. We begin with a brief overview of four recommended habitat zones and their locations in the current master plan proposal. They include 1) Riparian Floodplain Zone, 2) Wetlands (Bioswales/Millpond Swale), 3) Upperbank/Midbank Habitat, and 4) Pollinator Prairies. We follow with descriptions of each community type, accompanied by a design palette of native species. Each community is specified in terms of a) the physical conditions required, b) comparative lists for canopy (tree) layer, shrub layer and ground layer species, identified by recommended dominant and subdominant species, and c) descriptions of desired density or cover for each layer. We end with a descriptive framework for plant community establishment and management, including invasive species management.

The natural models for the proposed plant communities occur along a gradient related to proximity to the river and its hydrological influences, such as microclimate and plant access to groundwater (Figure 14). For this reason, the communities intergrade with one another to varying degrees and there is substantial overlap in species composition among them. In a designed landscape, transitions between community types may thus be gradual or abrupt depending on their desired form and function.

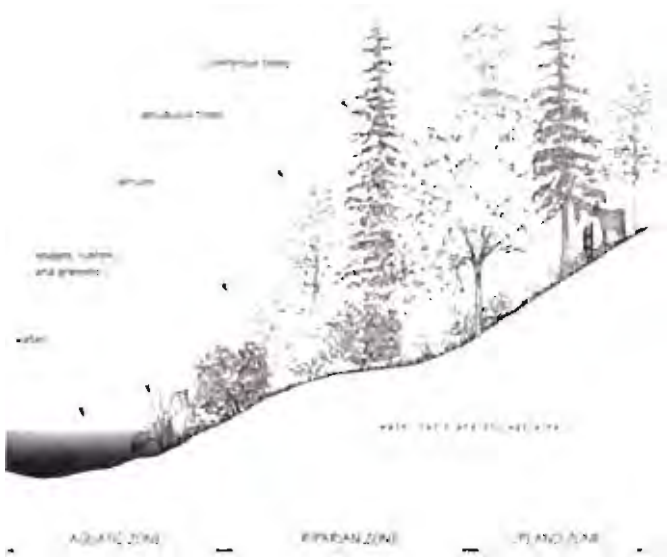

Figure 14. Diagrammatic Representation of Riparian and Upland Habitat. Source: http://www.clark.wa.gov/commdev/education/images/RiperianZonePlants.jpg

The community types and associated locations and acreages were established using our best professional judgment of what is appropriate for the site. We worked closely with Rowell Brokaw Architects to develop and refine the habitat zones and their locations, with the input from the Master Plan Community Advisory Team (Figure 15).

Figure 15. Proposed Habitat Zones (Diagram created by Rowell Brokaw Architects March 31, 2010).

Plant Community Design Palette

Appendix A provides detailed information on each of the plant species listed below for the different plant communities. This includes the areas where each species could be used, its requirements for light and moisture, the ecological functions it provides, its landscaping qualities, and finally its average height, canopy spread and growth rate. Species for the Riparian Floodplain and Upperbank/Midbank communities include shade-loving forest plants as well as sun-loving species. In part this is because the mature plant communities in each zone may intentionally range from forest to forest gaps to more open habitats. In addition, even in areas designated for forest, it will take many years for planted trees to reach large enough size that they will shade the ground sufficiently to support forest understory species. The urban habitat type is not specifically described below, but would be comprised in large part of native species selected from the following lists, as well as selected non-invasive introduced species that require minimal supplemental water, fertilization or pest or disease control.

Riparian Floodplain Zone: This is the area located closest to the river's edge where the plants generally have direct access to the groundwater and the hyporheic zone, where there is active and important exchange between belowground flows of water moving roughly in tandem with active channel flows. The elevation for this habitat zone varies between 400' and 408' and encompasses approximately 1.0 acres. This area currently has a moderate to high density of riparian trees at least one row wide along much of the river's edge. Due to the narrowness of the current floodplain benches and steepness of these north and east facing banks, there is not sufficient canopy space remaining between the river's edge and the current bike path for the addition of many more large trees (see Appendix A for average canopy widths of the proposed species). We therefore recommend a focus on planting large trees in areas where none exist and potentially infilling some of the currently treed areas with smaller trees, shrubs and herbaceous species. The addition of more large-canopied trees in areas where the banks will be laid back and also in the Upperbank/Midbank areas closest to the Riparian Zone will greatly increase the effective width and shading capacity of this zone. The species listed directly below are tolerant of wet soils as well as high water flows. They can also serve to slow the speed of higher flows, provide erosion protection and bank stabilization as well as provide shade to help maintain lower river water temperatures.

Tree species could include:
Alnus rhombifolia
Alnus rubra
Fraxinus latifolia
Populus trichocarpa

Shrub and small tree species could include:
Cornus sericea
Crataegus suksdorfi
Malus fusca
Physocarpus capitatus
Salix hookeriana
Salix lucida ssp. lasiandra
Salix sitchensis
Symphoricarpos albus var. *laevigatus*
Viburnum ellipticum

Forb species could include:
Scutellaria lateriflora
Stachys cooleyae
Urtica dioica

Grass, rush and sedge species could include:
Carex obnupta
Carex hendersonii
Carex interupta
Juncus effusus ssp. pacificus (do not confuse with invasive J. effusus ssp. effusus)
Juncus occidentalis

Wetlands (Bioswales/Millpond Swale): The elevation of this area varies between 408' and 420' and encompasses approximately 1.15 acres. There are at least two types of flowing water that may occur on this site: bioswales that will filter stormwater collected from the site and the daylighted Millpond Swale that will potentially flow through the southern section of the site. The suites of species that would be used for each are quite different. Some species that would be appropriately used only in and around the Millpond Swale are noted below while additional species for this habitat (including trees) would be similar to those that are recommended in the Riparian Zone and/or Upperbank/Midbank habitat sections of this document depending on the proximity of the plantings to the water feature.

In terms of bioswale construction, there are generally at least two categories of plants that are used in western Oregon. Species that will be in the areas of greatest inundation should be tolerant of wetter conditions in winter and drier during the summer and have the ability to help filter the incoming stormwater. The species located on the side slopes should be more tolerant of drier conditions year round and help stabilize the banks against erosion. Below is a list of potential shrubs, forbs, grasses and rushes that could be used in the wetter portions of these features. When determining which species might be used on the surrounding drier side slopes of this area, see the species lists for Upperbanks/Midbanks. It should be noted that plants that are typically used in bioswales are generally sun-loving species. Therefore, even though it is generally better if streams are shaded to help keep water temperatures at an acceptable level for fish, if the bioswales are shaded, the plants that are meant to cleanse the water may not survive.

Shrub and small tree species could include:

Acer circinatum
Cornus sericea
Crataegus suksdorfi
Malus fusca
Physocarpus capitatus
Salix hookeriana
Salix lasiandra ssp. lasiandra
Salix sessilifolia
Salix sitchensis
Spiraea douglasii
Viburnum ellipticum

Forb and Fern species could include:

*Alisma triviale** (in water)
Camassia leichtlinii
*Delphinium trolliifolium**
*Dicentra formosa**
Lupinus polyphyllus
*Lysichiton americanum** (in water)
Polystichum munitum
Ranunculus orthorhyncus *
Sidalcea cusickii *
Sisyrinchium idahoense *
Urtica dioica *
Veronica scutellata * (in standing water)

Grass, rush and sedge species could include:

Agrostis exarata
Alopecurus geniculatus
Bromus carinatus
Bromus sitchensis
Carex densa
Carex hendersonii
Carex leptopoda
Carex obnupta
Carex stipata
Danthonia californica
Deschampsia cespitosa
Festuca romerii
Eleocharis accicularis
Eleocharis ovata
Eleocharis palustris
Glyceria occidentalis
Glyceria striata (syn. elata)
Hordeum brachyantherum
Juncus acuminatus
Juncus effusus ssp. pacificus (do not confuse with invasive *J. effusus ssp. effusus*)
Juncus occidentalis
Juncus patens
Juncus tenuis
Schoenoplectus acutus (in water)
Schoenoplectus americanus (in water)
Schoenoplectus tabernaemontani (in water)
Scirpus microcarpus
Scirpus validus
Sparganium emersum (in water)

*Millpond Swale only

Upperbank/Midbank Habitat (also to be incorporated within areas of development in plant clusters that are large enough to serve as additional habitat for birds and pollinators). The elevation in this zone varies between 408' and 424' and encompasses approximately 1.9 acres. This area should be planted in trees, shrubs, forbs and grasses chosen to fit local microhabitat conditions of sun versus shade, moist versus dry. Species located in the Midbank areas will sometimes need to grow in areas of riprap and steeper banks. In these situations they may need help in establishment such as amending the planting hole with soil and regular watering for several years. Plants would establish more easily in areas where the riprap was removed and the slope of the banks reduced.

In general it is recommended that this habitat zone be planted in a more landscaped fashion in areas located closer to the buildings and other development, and then planted as a denser and lusher riparian forest in the areas closer to the river. For example, the areas near Restaurant Row could be planted with native forbs and grasses (possibly augmenting the greenroof pollinator plantings that are recommended for area rooftops), the area midway between the buildings and the river could include groups of native shrubs and small trees and an occasional larger shade tree, while the areas closest to the riverbank could be planted with larger native trees, shrubs, forbs and grasses that are more indicative of riparian forests. This design would increase the visibility of the river and the overall open space from the buildings while increasing the effective width of the Riparian Zone, thus aiding in water temperature regulation. Leaving tree canopy gaps in the taller riparian plantings and/or building viewing platforms will allow people visual access to the river.

Tree species could include:
Acer macrophyllum
Arbutus menziesii
Fraxinus latifolia
Quercus garryana
Quercus kelloggii

Shrub and small tree species could include:
Acer circinatum
Amelanchier alnifolia
Aruncus dioicus
Baccharis pilularis
Berberis aquifolium
Ceanothus sanguineus
Ceanothus velutinus
Corylus cornuta var. *californica*
Holodiscus discolor
Lonicera involucrata
Oemleria cerasiformis
Philadelphus lewisii
Prunus emarginata var. *mollis*
Prunus virginiana var. *demissa*
Rhamnus purshiana
Ribes sanguineum
Rubus parviflorus
Salix scoulerina
Sambucus racemosa
Symphoricarpos albus var. *laevigatus*
Viburnum ellipticum

Forb and Fern species could include:
Aquilegia formosa
Artemesia douglasiana
Asclepias speciosa
Clarkia amoena
Clarkia purpurea var. *purpurea*
Claytonia sibirica
Collinsia grandiflora
Collomia grandiflora
Delphinium menziesii
Delphinium trolliifolium
Dicentra formosa
Erysimum capitatum var. *capitatum*
Eschscholzia californica
Fragaria vesca var. *bracteata*
Fragaria virginiana var. *platypetela*
Geranium oreganum
Gilia capitata
Heracleum lanatum
Heuchera micrantha
Hydrophyllum tenuipes
Iris tenax
Lomatium dissectum
Lomatium nudicaule
Lomatium utriculatum
Lupinus rivularis
Mertensia platyphylla
Plectritis congesta
Polystichum munitum

Forb and Fern species (cont'd)
Potentilla gracilis var. *gracilis*
Prunella vulgaris ssp. lanceolata
Ranunculus occidentalis
Sidalcea campestris
Sidalcea malviflora var. *virgata*
Solidago canadensis
Symphyotrichum subspicatum
Tellima grandiflora
Thalictrum polycarpum
Thalictrum occidentalis
Trillium albidum
Triteleia hyacinthina
Viola glabella

Grass and sedge species could include:
Bromus sitchensis
Carex leptopoda
Elymus glaucus
Festuca californica

Pollinator Prairies: The elevation of these areas varies between 414' and 434' and occupies approximately one acre of the site. This zone, which is devoted to providing the habitat needs of native pollinators, can also be surrounded by groups of native small trees and shrubs that further serve the habitat needs of the native pollinators as well as local and migrating song birds. This would be an ideal spot for placement of educational signs concerning the needs of native pollinators and songbirds, perhaps encouraging people to plant similar areas in their own yards throughout Eugene. There are excellent local organizations including the Native Plant Society of Oregon Emerald Chapter, the Audubon Society, and the Xerces Society that could potentially help with content and wording of signs.

These organizations might also be of assistance for informing the project with the pollinator species-specific detail needed to best choose appropriate plant species to serve the nectar, larval host and overwintering needs of targeted species. Information on plant species that may provide general habitat needs for pollinators and songbirds is provided in Appendix A but it is not possible within the framework of this report to provide a high level of detail on which plant species best serve all aspects of each pollinator's or bird's habitat needs. Indeed, such knowledge continues to grow and should be updated frequently, even after project implementation. At present, using the best available information and overall planting a diverse mix of native species known to provide for the habitat needs of local pollinators will be the best that can be achieved within the framework of current knowledge, and will be a major step in the right direction.

Shrub and small tree species could include:
Amelanchier alnifolia
Berberis aquifolium
Corylus cornuta var. *californica*
Holodiscus discolor
Oemleria cerasiformis
Philadelphus lewisii
Prunus emarginata var. *mollis*
Prunus virginiana var. *demissa*
Rhamnus purshiana
Ribes sanguineum
Symphoricarpos albus var. *laevigatus*

Forb species could include:
Achillea millefolium
Anaphalis margaritacea
Aquilegia formosa
Asclepias speciosa
Brodiaea coronaria ssp. coronaria
Clarkia amoena
Clarkia purpurea var purpurea
Collinsia grandiflora
Collomia grandiflora
Delphinium menziesii
Epilobium ciliatum var. *glandulosum*
Epilobium densiflorum
Eriophyllum lanatum
Erysimum capitatum var. *capitatum*
Eschscholziaolltzia californica
Fragaria virginiana var. *platypetela*
Geranium oreganum
Gilia capitata
Iris tenax
Lomatium dissectum
Lomatium nudicaule
Lomatium utriculatum
Lupinus bicolor
Lupinus polyphyllus
Mertensia platyphylla

Plectritis congesta
Potentilla gracilis
Prunella vulgaris ssp. lanceolata
Ranunculus occidentalis
Sidalcea malviflora var. *virgata*
Sisyrinchium idahoense
Solidago canadensis
Symphyotrichum hallii
Symphyotrichum subspicatum
Triteleia hyacinthina
Viola adunca
Wyethia angustifolia

Grass and sedge species could include:
Carex tumulicola
Danthonia californica
Elymus glaucus
Festuca roemeri
Koeleria macrantha

Plant Community Establishment and Management

The Riverfront Property currently owned by EWEB will be a challenging site to restore in many respects. It is essential to recognize that native plantings, like any garden, need care. The need to establish plants in the sometimes-difficult conditions of steep banks and riprap present particular challenges. Furthermore, once the plantings are established, regular and knowledgeable management is needed to maintain native plantings in the face of continued invasion by non-native introduced species, and in light of the need to maintain high levels of native species diversity to fulfill desired ecological functions. For these reasons, both a carefully conceived implementation plan, and a clear ongoing management plan that combines horticultural practices with ecological restoration practices, are imperative.

The presence of riprap and steep banks along much of the Riparian Zone will make it difficult to plant and maintain native species over time. In appropriate areas along the river's edge, willow wands can be inserted at least 4' into the bank to prevent them from washing away in high water prior to root development. There are also some areas of low riparian bench that hopefully have accumulated enough soil to allow for normal planting of appropriate native trees, shrubs and herbaceous plants. For tree and shrub planting on the midslope banks that are not slated to be altered, the creation of small gaps in the riprap and adding soil to these gaps is one way that planted trees and shrubs might be established.

In addition, introducing native species using seed instead of nursery-grown stock should be considered, since seedlings may have a better chance of establishing in difficult conditions than ones raised in a nursery or greenhouse and transplanted to the site. One caveat to the approach of moving riprap and importing soil would be the potential weakening of the riprap through removal of some material. For this reason, consultation with U.S. Army Corps of Engineers would be advised. It is possible that simply adding soil into naturally occurring dips and crevices in the riprap without removal of any rocks would work, although it might be harder to prevent the soil from washing away. The portion of the Midbank area that is above the Ordinary High Water Mark will have a better chance of establishment in this regard.

In addition to the challenges inherent in plant establishment, irrigation of all new plants will be required for at least two years after planting. This will be difficult due to the steepness of the banks, which will cause water to run downhill instead of soaking into the ground, and the presence of the riprap, which will make traveling across the area to each plant on foot difficult and sometimes hazardous. In the areas where it has been proposed to remove the riprap and lower the grade of the banks, these difficulties will be lessened but not entirely remedied. It is

essential that the design include the establishment of maintenance paths and other infrastructure to make ongoing management efficient and cost-effective.

Plantings on the Upper Banks, Millpond Swale and the Pollinator Prairie will be easier to carry out although it is possible that some soil will need to be added since existing soil may be compacted from past asphalt and vehicular traffic. Native nursery stock could be used as well as locally collected native seeds depending on the cost, availability and overall desired outcome. Nursery stock can be convenient to use in areas where there are few obstacles and level ground. Furthermore, using planted stock provides more rapid establishment and growth so that the desired habitat can be created more quickly. The Pollinator Prairie, however, might be more easily and cost-effectively established if primarily sown with the appropriate local native seeds and supplemented with nursery stock or plugs as needed. Extensive site preparation is critical prior to planting to control existing non-native species as well as their soil seed bank. Current local restoration experience by the City of Eugene, The Nature Conservancy and federal agencies is that at least two years of site preparation creates much higher quality prairies with much lower long-term management cost.

Invasive species management is central to maintaining healthy and attractive native plant communities. Invasive exotic species may outcompete or compromise the growth of native trees, shrubs, forbs and grasses, and thus diminish the food, host and nesting potential of these plants for native (and other) birds, insects and mammals. Dense overgrowth of invasive species can prevent tree regeneration in important areas like riparian zones, diminishing the riparian forest's ability to provide shade for water temperature control, and to supply woody debris and litter for aquatic invertebrates, which in turn can compromise the health and survivorship of native fish. The river's edge receives a constant influx of invasive species that needs to be monitored and managed on a yearly basis. Early detection is often the key to efficient and economic control. Dense exotic shrubs such as Himalayan blackberry *(Rubus armenaicus)* and Scots broom (*Cytisus scoparius*) are not high quality wildlife habitat and can alter the soil chemistry so that native species are less able to compete. Dense stands of invasive species can also provide hiding places for humans, creating potential safety issues or the perception of unsafe conditions. See Appendix C of the full report for selected invasive species control recommendations and techniques.

The importance of clearly defined goals, measurable benchmarks for what is considered to constitute success, and a well-established management plan that allows for adaptively monitoring and managing the site over the long term cannot be overemphasized. Plant species diversity in riparian zones was historically maintained by such disturbances as flooding. In its absence, human management is needed to prevent either invasive exotic species or competitively dominant native species from taking over and reducing diversity below desired levels. Qualified personnel who understand how to maintain native plantings as well as selected ornamental characteristics are essential. The City of Eugene natural resources management team is an excellent source of such knowledge and personnel.

Design and Management Strategies for Wildlife and People

The full report next contains a 19-page section of text and illustrations devoted *Design and Management Strategies for Wildlife and People* (p. 32-50). It begins with a brief introduction to management species and riparian habitat followed by nine key design and planning recommendations intended to guide master plan implementation. The section ends with five pages of site design critique and commentary. Given that this summary report is intended primarily for assessment and implementation of the master plan rather than design guidance, we present only selected highlights here. The reason they are included is to illustrate the complex relationships between the spatial layout of a design, its vegetation structure and species composition, underlying ecological processes that are often invisible to the human eye, and the dynamic nature of how living systems change and develop over time.

Because of these features, it is one thing to describe an area as a "green space" or "natural area" on paper, as is done in a plan or design. It is another to actually achieve the intended ecological functions, particularly when they are being integrated with other human use functions. Such issues can be counterintuitive. For instance, in the report we stated:

> *"Designers will need to be careful not to integrate wildlife habitat with stormwater functions where runoff from streets and parking lots is initially being processed... Bioswales receiving such inputs not only carry polluted water but also may build up sediments with high levels of toxic materials. To the degree that some plant species, particularly those used for bioremediation, may accumulate heavy metals or other chemical compounds in their tissues, the plants themselves may become unsuitable forage and habitat for wildlife species. For this reason we recommend that any initial aboveground biological cleansing of stormwater from streets and parking lots be done with vegetation that provides little attraction for wildlife...On the other hand, water that comes off inert roofs and sidewalks without motorized vehicles should be relatively clean and may be suitable to use in detention and infiltration wetlands that also serve as habitat for native wildlife species. For these reasons we recommend that stormwater from roofs and other clean surfaces be kept separate from runoff from roads and parking lots. Development of such a planned stormwater infrastructure from project inception will allow for much safer integration of ecological and stormwater functions and much greater potential to adapt the system efficiently in the future as stormwater technologies improve."* (p. 46, full report)

For reasons such as these specific benchmarks and best management guidelines are an essential component of project implementation. We have highlighted several of other key issues from the report here and refer the reader to the full report for further detail.

Upper Bank Modification (p. 45)

> *"...achieving a desirable physical alignment of the bank and stabilizing it with materials and technologies that promote robust plantings and efficient vegetation management may be the most critical part of "getting it right" for the long term viability of the site as an urban river experience. Without such attention to the river's edge in the initial stages of site development it is likely that the site will never achieve its desired endpoints, experientially or ecologically. Likewise, its adaptability to future modifications of plantings or people's access would be seriously constrained for the foreseeable future."*

Restaurant Row (p. 47)

"To maximize the ecological functionality and human experiential values of the habitat zone from "restaurant row' toward the river, we recommend that that master plan...integrate what are currently shown as distinct zones for the pollinator prairie, upper/midbank zone and riparian floodplain zone into a more or less continuous plant community gradient."

Species selection and infrastructure design for different habitat zones *(p. 48)*

"LEED certification has been identified as a potential goal for the master plan. The term "native or adaptive species" comes from the LEED ND landscaping criteria, which reference a criteria for new landscaping of 80-90% "native or adaptive species." Although LEED defines such a species as "low maintenance but not invasive", the term "adaptive" species has no any accepted or standardized ecological meaning and we strongly recommend it not be used in the master plan. Because ecological functions are a key dimension of the EWEB design, it is essential to use terms with precise meaning. For instance, a non-native species that is well adapted to the climate and soils so that it needs little care, management or supplemental water, fertilization etc. could be relatively benign, or it could be a major invasive exotic species. Our recommendation is that only natives be used in the upper/midbank habitat zone so as to maintain high ecological value, and that plant species for the urban habitat zone be specified as "natives and non-invasive introduced species that require minimal supplemental water, fertilization or pest or disease control", rather than "adaptive plant species."

Ecological Functions, Habitat Quantity and Habitat Quality

Master plans are intended to guide future design and planning implementation but do not necessarily specify the outcomes in a sufficiently detailed or "hard and fast" manner to support a quantitative assessment of ecological functions. In this final section of the full report we described five qualities that could provide a qualitative baseline for assessment: ecological function type, habitat size, habitat quality, habitat connectivity, and management of ecological dynamism. Such an assessment would provide a foundation for understanding the potential consequences of altering or further specifying different aspects of the master plan when the project shifts from the planning phase to the design phase. We refer the reader to this section of the full report for further detail.

For ecological performance to be assessed post-occupancy, there are a number of mechanisms that can be used ranging from assessments of native species diversity and native v. exotic species cover, to more integrative measures of the success of indicators species such as those listed in Appendix B of the full report. One issue not addressed in the original report that will become central in the design phase is the thoughtful *quantitative* specification of appropriate ranges of native versus exotic plant species diversity and cover in different zones of the site. For example, specifying the number of native versus exotic species is useful but says nothing about their relative abundances. Specifying the number of individual plants of each type introduced at the time of planting is also useful but doesn't address the total amount of area covered by each type since different plant species grow to different sizes. Specifying the relative area covered by each type of plant is perhaps the most useful measurement. Furthermore, specifying plant

composition and community structure is necessary, but how the vegetation is managed is nearly as important for ecological function. For these reasons we recommend that substantial attention be given to identifying and applying multiple, standard metrics that are used to assess the value and success of ecological restorations in the master plan assessment, implementation and design phases. We further recommend that these metrics be used for monitoring and management purposes throughout the life of the project.

Given the constraints of relatively the small habitat area planned for the site, we emphasized the importance of habitat quality for the overall ecological functioning of the site. We stressed the importance of a strong focus on the use of native species throughout the site and the exclusive use of native species in the riparian, midbank/upper bank, and prairie zones. Incorporating diverse mixtures of native species within structurally complex canopy, shrub and ground layer vegetation will be extremely important, particularly close to the river. In addition, the promotion of important habitat elements such as snags (standing dead trees), large logs, and leaf litter are critical to supporting the full cycle of life-giving processes needed for highly functioning ecosystems. At the same time, the use of native species in more traditional ornamental planting designs in some areas would still have substantial ecological value if designed with wildlife needs in mind. To this end, we recommend a creative and exploratory use of natives in ornamental designs.

Description of Appendices in the Full Report

The full report contained four appendices intended to guide project design, implementation and management phases. These included:

Appendix A. EWEB Project Native Plant Communities. Provides detailed lists of appropriate native plant species or each zone as well as plant characteristics and environmental needs, ecosystem functions provided, and landscape qualities.

Appendix B. Potential Riparian Zone Management Species for EWEB Property. Provides a suite of nine selected management species (birds, fish and insects) whose use of the site could provide both goals and benchmarks for project success. This list is by no means complete but provides examples of selected taxa that would be suitable for the site, its context and the master plan design.

Appendix C. EWEB Invasive Species Control Recommendations. Contains management guidelines for the invasive exotic species most likely to require ongoing control on the site.

Appendix D. Range of Functional Buffer Widths. Provides detailed quantitative guidelines needed for different riparian ecological functions. Such information is important to reference when making site design decisions intended to fulfill the intentions of the master plan.

Exhibit F to Ord. Exhibit 8

MEMORANDUM

BALZHISER & HUBBARD
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To:	Colin McArthur	October 18, 2011
Company:	Cameron McCarthy	
Project:	EWEB Riverfront	
Subject:	Evaluation of Existing Utility Infrastructure: Storm, Sanitary Sewer, and Water	
From:	Geoff Larsen, P.E.	**Pages:** 4

This memo provides a broad-level discussion of Civil Engineering-related development issues associated with the Eugene Water and Electric Board's (EWEB) Riverfront Master Plan. The focus of the following discussion is an evaluation of existing Stormwater, Sanitary Sewer, and Water utilities within the Riverfront property. Refer to the 10/03/11 memo titled "EWEB Riverfront - Review of Stormwater Standards and Proposed Code Amendments" for additional discussion concerning stormwater development issues.

Stormwater

The existing stormwater infrastructure throughout the EWEB Riverfront property consists of a mix of private and public drainage systems. The following provides a summary of the existing private and public stormwater infrastructure and a discussion about system capacity, basin delineation, and relevant capital improvement projects.

Private Stormwater Infrastructure:

The majority of the roof and surface drainage throughout the EWEB property is conveyed through gravity-fed piped systems and discharged to either the existing public stormwater pipes crossing the site or to private outfalls located on the south bank of the Willamette River.

The building layout and stormwater management concepts proposed in the Master Plan are expected to conflict with the majority of the existing private stormwater infrastructure throughout the site. As such, it is generally assumed that the majority of the private storm drain systems will be removed as part of the Riverfront redevelopment.

Public Stormwater Infrastructure:

Two major public storm drainage systems extend through the EWEB Riverfront Property. The first system is the lowest reach of the 60-inch piped segment of the Millrace, extending through the proposed Millrace Lane alignment to an outfall at the Willamette River. That segment of the Millrace, in conjunction with a secondary outfall near Kincaid Street, conveys storm drainage from the 775-acre Millrace Major Subbasin[i]. The second major public drainage system is a piped system collecting drainage from the 4th Avenue right-of-way and the 47-acre Minor Drainage Basin WS-100. That system enters the EWEB Riverfront property at the intersection of 4th Avenue and the Ferry Street Corridor as a 24-inch pipe. From that point, it flows south for a distance of approximately 150-ft, then flows in a northeasterly direction within a 36-inch pipe located between the two existing EWEB Headquarters buildings, ultimately to the Willamette River outfall located near the existing pedestrian plaza east of the Headquarters Buildings. It should be noted that there are currently no drainage easements identified for the 4th Avenue public drainage system[ii].

In addition to the two major storm drainage systems noted above, there is a minor 12-inch public storm drain beginning near the terminus of the Hilyard Street railroad crossing, and extending east directly across the Riverfront property to an outfall at the Willamette River. That system conveys drainage from the Hilyard Street turn-around located on the EWEB side of the railroad tracks, and may become obsolete with the proposed Hilyard Street railroad crossing relocation.

It is assumed that the two existing major public storm drainage systems will generally remain in place, continuing to provide stormwater conveyance for their respective upstream drainage basins. The existing public system originating in 4th Avenue will likely be displaced by the development within the block enclosed by 4th, 5th Avenue Extension, Ferry Lane, and Mill Street, and may need to be relocated to 4th Avenue.

System Capacity:

In the context of the Riverfront project, the City of Eugene standards concerning stormwater runoff rate control and capacity of receiving systems are set forth in Eugene Code (EC) Section 6.6791 - "Destination". Under that code section, developers are required to document that stormwater runoff from the proposed development will be discharged to a receiving system with adequate capacity to handle all upstream development. As an alternative, the developer may employ stormwater management measures to ensure the development does not increase runoff rates entering the public systems. Compliance with the City's "Destination" code requirements is not expected to be problematic for the Riverfront development for the following reasons:

- The proposed drainage concept will disconnect large areas from the piped public drainage system and will redirect those areas directly to the Willamette River through either the proposed 5th Avenue Swale or the proposed Millpond Swale.
- The proposed development will result in a net reduction of impervious surface, resulting in lower overall runoff rates.
- The Riverfront property is located within the Willamette Major Basin which, according to the 2002 City of Eugene Stormwater Basin Master Plan (SBMP), is generally designated as not having any major flooding problems. Furthermore, the SBMP has not identified any specific capacity-related concerns with the public systems located within the EWEB property. It should be noted that the SBMP evaluation is based on observed system performance during the February 1996 flood.

Drainage Basin Delineation:

The Riverfront property is located within three separate minor delineated subbasins within Willamette River Major Basin[iii]. On a large scale, the actual drainage basins are similar to the delineated subbasins. However, neither the existing drainage patterns or the proposed build-out drainage concept are in full agreement with the existing subbasin delineations. Since capacity is not expected to be a concern, as described above, the disagreement in basin delineation is not anticipated to be problematic.

Existing Public Capital Improvement Projects:

The Eugene SBMP does not identify any capital improvements within the Riverfront project area to address flood control issues. However, the SBMP does identify one relevant capital improvement project associated with the goal of water quality. Project WR101 - "Millrace Enhancement" has potential to overlap with the proposed Millpond Swale element of the Riverfront project. The objective of the Millrace Enhancement project is to implement water quality treatment recommendations that were prepared for the City in a 1990 Study[iv]. Although the millrace enhancement options presented in the 1990 study do not specifically address the lowest reach of the Millrace within the EWEB property, there is a possibility that some of the

goals identified in that study (e.g. introduce fish spawning opportunities, install biofiltration to improve water quality, improve people/millrace interface, etc.) could be realized with the creation of the Millpond Swale element.

Sanitary Sewer

The existing sanitary sewer infrastructure throughout the Riverfront property is composed of private and public gravity-fed pipe systems. The majority of the existing private sanitary drainage system drains in a northwesterly direction, to a single point of connection to the receiving public sanitary sewer system. The receiving public sanitary sewer is a 12-inch pipe located within an easement aligned with Mill Alley, located approximately 150-feet south of 4th Avenue. This public sewer begins north of 3rd Avenue, extends to the south following the Mill Alley alignment, crosses under the railroad tracks, and then joins a public 15-inch sewer located at the intersection of 6th Avenue and High.

Much of the existing private sanitary sewer system conflicts with the block layout proposed with the Master Plan, and it is assumed the majority of the existing private system will be removed or abandoned. The existing public system along the Mill Alley alignment also conflicts with the proposed block layout between the proposed 5th Avenue Extension and the railroad. Accordingly, some public sanitary sewer relocation may be necessary in this area.

The public sanitary sewer system within the vicinity of the Riverfront property generally flows south and east. The existing public sanitary sewer in Mill Alley alignment is the only known public sewer that extends north of the railroad tracks into the Riverfront property. Two other public sanitary sewers are available in close proximity to the Riverfront property, but terminate south of the railroad tracks. Those include a 15-inch sewer located within Ferry Street east of the courthouse, and an 8-inch sewer located within Hillyard Street near the existing railroad crossing. Connecting to the public sewers located south of the railroad tracks would require boring under the railroad tracks and a potentially lengthy permitting process with the railroad.

The existing public sanitary sewer systems on and adjacent to the Riverfront property are expected to be sufficiently deep to provide drainage for the proposed development by gravity, and a pump station is not anticipated to be necessary.

City engineering staff have identified several potential deficiencies with the existing public sanitary sewer located in the Mill Alley alignment. First, the pipe crossing under the railroad tracks is expected to be near the end of its design life and needs to be replaced. Second, there is a reduction in pipe diameter, from 12-inch to 10-inch, from the point where the sewer pipe crosses under the railroad tracks, to the point of connection with a 15-inch pipe at the intersection of 6th Avenue and High Street. Because of those deficiencies, if the Riverfront development proposes to discharge sanitary drainage to the public sewer in Mill Alley, an upgrade of the existing public system, from the Railroad crossing at Mill Alley to the intersection of 6th Avenue and High Street, may be required.

Water Utilities

Existing public water supply is readily available through much of the Riverfront property. An existing looped water main is present within the property and could serve as starting point for public water system upgrades and extensions. The existing loop is fed from a 12-inch main extending from the southeast corner of the Riverfront property, along the proposed Railroad Street Alignment, up to a location just southeast of the intersection of Railroad Street and Millrace Lane. This 12-inch line connects with an 8-inch main extending north, generally following the alignment of the proposed Ferry Lane, up to a point near the southwest corner of the EWEB Headquarters building. From there, the loop connects to an 8-inch main that extends both northeast into 4th Avenue, and southeast along the Willamette River frontage (east of the proposed Restaurant Row). The 8-inch main located adjacent to the river frontage completes the loop by connecting back to the 12-inch main in Railroad Street just to the southeast of the Steam Plant. Public water mains are also present in 4th Avenue and High Street.

Additional public water main construction will be necessary to serve the proposed development, specifically in the zone between Ferry Lane and High Street. In general, the existing looped water main within the Riverfront property does not present major conflicts with the proposed block layout. However, there are several areas where relocation or reconstruction will be required. The proposed block layout at the east side of the intersection of Millrace Lane and Railroad Street conflicts with the existing 8-inch main that follows the proposed Ferry Lane alignment. In addition, the water mains may require reconstruction at the proposed Millpond Swale crossing and 5th Avenue Extension Swale.

It should also be noted that an existing 42-inch EWEB transmission main enters the property at the northeast terminus of the proposed Water Lane, extends in a southwesterly direction to the intersection of Water Lane and the proposed Railroad Street, and then extends to the northwest parallel to the railroad tracks.

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[i] Basin designations are taken from the 2002 City of Eugene Stormwater Basin Master Plan (SBMP).
[ii] Based on the OBEC Consulting Engineers Topographic Survey dated June 13, 2011.
[iii] The existing minor sub-basins within the EWEB Riverfront Property include WS-100, MR-010, and SW-110. Reference Figure 3-5 of the 2002 SBMP.
[iv] Water quality options are presented in the "Millrace Enhancement Feasibility Study" Prepared by Scientific Resources, Inc., 1990.

Exhibit 9

DOWNTOWN RIVERFRONT REGULATORY COVERAGE

Within Tax Lot & Conservation Boundaries

/WR REGULATED AREA	EXISTING CONDITIONS	PERCENT OF REGULATED AREA
/WR Conservation Area	71,335 sf (1.63 ac)	25%
/WR Conservation Setback Area	79,854 sf (1.83 ac)	27%
- Impermeable Surface (Pavement)	43,883 sf (1.00 ac)	inc.
- Landscape & Open Space	35,971 sf (0.82 ac)	inc.
/WR Prior Developed Area	141,327 sf (3.24 ac)	48%
- Buildings / Structures	35,759 sf (0.82 ac)	inc.
- Impermeable Surface (Pavement)	87,094 sf (1.99 ac)	inc.
- Other Surface (Gravel)	13,768 sf (0.31 ac)	inc.
- Landscape & Open Space	4,706 sf (0.10 ac)	inc.
TOTAL	292,516 sf (6.71 ac)	100%

WG REGULATED AREA	EXISTING CONDITIONS	PERCENT OF REGULATED AREA
- Buildings / Structures	257,875 sf (5.92 ac)	30%
- Impermeable Surface (Pavement)	393,249 sf (9.03 ac)	46%
- Other Surface (Gravel)	134,814 sf (3.09 ac)	16%
- Open Space	74,494 sf (1.71 ac)	8%
TOTAL	860,432 sf (19.75 ac)	100%

WGS REGULATED AREA	EXISTING CONDITIONS	PERCENT OF REGULATED AREA
Setback Area	139,259 sf (3.19 ac)	100%
TOTAL	139,259 sf (3.19 ac)	100%

Note: Area calculations derived from Digitized Aerial Photography provided by EWEB, Surveyed Conditions from the June 13, 2011 survey prepared by OBEC Consulting Engineers, and GIS data provided by LEOG.

LEGEND

- PROJECT BOUNDARY
- 2' CONTOUR INTERVAL
- TAX LOT BOUNDARY
- RIGHT-OF-WAY BOUNDARY
- TOP OF BANK (TOB)
- ORDINARY HIGH WATER LINE (OHW)
- ORDINARY LOW WATER LINE (OLW)
- WILLAMETTE GREENWAY BOUNDARY
- /WR CONSERVATION SETBACK BOUNDARY
- PROPOSED WILLAMETTE GREENWAY SETBACK BOUNDARY
- PROPOSED VIEW CORRIDOR
- /WR CONSERVATION AREA
- /WR CONSERVATION SETBACK AREA
- /WR PRIOR DEVELOPED AREAS
- IMPERVIOUS PAVEMENT Concrete or Asphalt
- GRAVEL SURFACE
- EXISTING BUILDING To Remain
- EXISTING BUILDING To Be Removed
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- EXISTING SHRUB CLUSTER

0' 50' 100' 200' NORTH

SCALE 1" = 100'-0"

Regulatory Plan

CAMERON McCARTHY

Powell Brukaw Architects

EWEB RIVERFRONT LAND USE COMPONENTS

EUGENE WATER & ELECTRIC BOARD
500 East 4th Avenue Eugene, OR 97401

STAMP

NOT FOR CONSTRUCTION

Drawn By:	EWR
Checked:	CGM
Project #:	1045 M
Date:	Dec. 5, 2012

Rev. #	Date

SHEET TITLE

REGULATORY PLAN

SHEET #

R1

DEPT OF

LAND CONSERVATION
AND DEVELOPMENT

Attn: Plan Amendment Spec.
Dept. of Land Conservation & Dev.
635 Capitol St. NE, Ste. 150
[illegible] OR. 97301-2540