MovingAhead

STREETS AND PLACES REIMAGINED

DRAFT FINAL Community, Neighborhood, and Environmental Justice Technical Report

Lane Transit District
City of Eugene

In cooperation with
Lane Council of Governments
Lane County
Oregon Department of Transportation

July 10, 2017

DRAFT FINAL Community, Neighborhood, and Environmental Justice Technical Report

MovingAhead Project

Prepared in accordance with the
National Environmental Policy Act of 1969, as amended 42 U.S.C. 4322
and the
Federal Transit Act of 1964, as amended 49 U.S.C. 1601 et seq.

July 10, 2017

Prepared for
Federal Transit Administration
Lane Transit District
City of Eugene

Prepared by
CH2M HILL, Inc.

Americans with Disabilities Act (ADA) Information
If you would like copies of this document in an alternative format – large print, Braille, cassette tape, or on computer disc – or are deaf or hard of hearing, please contact
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Title VI
Lane Transit District ensures full compliance with Title VI of the Civil Rights Act of 1964 by prohibiting discrimination against any person on the basis of race, color, national origin, or sex in the provision of benefits and services resulting from its federally assisted programs and activities. For questions regarding the project's Title VI compliance, please contact
Sasha Luftig, Project Manager for the MovingAhead Project, at
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Acronyms, Abbreviations, and Terms

Acronyms and Abbreviations	Definitions
AA	Alternatives Analysis
ADA	Americans with Disabilities Act of 1990, as amended, 42 U.S.C. 12101 et seq.
API	Area of Potential Impact
BAT	Business Access and Transit
BRT	Bus Rapid Transit
CFR	Code of Federal Regulations
CH2M	CH2M HILL, Inc.
City	City of Eugene
EmX	Emerald Express, Lane Transit District's Bus Rapid Transit System
EOA	Equity and Opportunity Assessment
Draft Envision Eugene	*Draft Envision Eugene Community Vision* (Envision Eugene, 2016, July)
Draft Eugene 2035 TSP	*DRAFT Eugene 2035 Transportation System Plan* (City of Eugene, 2016)
FTA	Federal Transit Administration
FTN	Frequent Transit Network
I-5	Interstate 5
I-105	Interstate 105
LCC	Lane Community College
LCOG	Lane Council of Governments
LEP	limited English proficiency
LOS	level of service
LTD	Lane Transit District
MMA	Michael Minor and Associates, Inc.
MPO	Metropolitan Planning Organization
NEPA	National Environmental Policy Act, 42 U.S.C. 4321 4347
NPS	Department of Interior's National Park Service
ODOT	Oregon Department of Transportation
OPRD	Oregon Parks and Recreation Department
ORS	Oregon Revised Statutes
RTP	Central Lane Metropolitan Planning Organization *Regional Transportation Plan* (Central Lane MPO, 2011, December); the RTP includes the Financially Constrained Roadway Projects List
Title VI	Title VI of the Civil Rights Act of 1964, 42 U.S.C. 2000d
TOD	transit-oriented development
Uniform Relocation and Real Property Act of 1970	Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, 42 U.S.C. 4601 et seq.
U.S.C.	*United States Code*
WEEE	West Eugene EmX Extension

Terms	Definitions
Accessibility	The extent to which facilities are barrier free and useable for all persons with or without disabilities.
Adverse Effect	Adverse effects are the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness or death; air, noise, and water pollution and soil contamination; destruction or disruption of built or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion, isolation, exclusion or separation of minority or low-income individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of, benefits of Department of Transportation programs, policies, or activities.
Alignment	Alignment is the street or corridor that the transit project would be located within.
Alternatives Analysis (AA)	The process of evaluating the costs, benefits, and impacts of a range of transportation alternatives designed to address mobility problems and other locally-defined objectives in a defined transportation corridor, and for determining which particular investment strategy should be advanced for more focused study and development. The Alternatives Analysis (AA) process provides a foundation for effective decision making.
Area of Potential Impact	An assessment's Area of Potential Impact for the project is defined separately for each discipline.
Base Period	The period between the morning and evening peak periods when transit service is generally scheduled on a constant interval. Also known as "off-peak period."
Boarding	Boarding is a term used in transit to account for passengers of public transit systems. One person getting on a transit vehicle equals one boarding. In many cases, individuals will have to transfer to an additional transit vehicle to reach their destination and may well use transit for the return trip. Therefore, a single rider may account for several transit boardings in one day.
Bus Rapid Transit (BRT)	A transit mode that combines the quality of rail transit and the flexibility of buses. It can operate on bus lanes, high-occupancy vehicle (HOV) lanes, expressways, or ordinary streets. The vehicles are designed to allow rapid passenger loading and unloading, with more doors than ordinary buses.
Business Access and Transit (BAT) Lane	In general, a BAT lane is a concrete lane, separated from general-purpose lanes by a paint stripe and signage. A BAT lane provides Bus Rapid Transit (BRT) priority operations, but general-purpose traffic is allowed to travel within the lane to make a turn into or out of a driveway or at an intersecting street. However, only the BRT vehicle is allowed to use the lane to cross an intersecting street.
Capital Improvements Program (CIP)	A CIP is a short-range plan, usually 4 to 10 years, which identifies capital projects and equipment purchases, provides a planning schedule, and identifies options for funding projects in the program.

Terms	Definitions
Categorical Exclusion (CE)	A CE means a category of actions that do not individually or cumulatively have a significant effect on the human environment and for which, therefore, neither an environmental assessment nor an environmental impact statement is required.
Collector Streets	Collector streets provide a balance of both access and circulation within and between residential and commercial/industrial areas. Collectors differ from arterials in that they provide more of a citywide circulation function, do not require as extensive control of access and are located in residential neighborhoods, distributing trips from the neighborhood and local street system.
Corridor	A broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways and transit route alignments.
Documented Categorical Exclusion (DCE)	A Documented Categorical Exclusion (DCE) means a group of actions that may also qualify as CEs if it can be demonstrated that the context in which the action is taken warrants a CE exclusion; i.e., that no significant environmental impact will occur. Thus, these actions are referred to as Documented Categorical Exclusions. Such actions require some NEPA documentation, but not an Environmental Assessment or a full-scale Environmental Impact Statement. DCEs documentation must demonstrate that in the context(s) in which these actions are to be performed, they will have no significant environmental impact or that such impacts will be mitigated.
Effects	Effects include ecological, aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial. Effects include: (1) direct effects that are caused by the action and occur at the same time and place, and (2) indirect effects that are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use; population density or growth rate; and related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8).
EmX	Lane Transit District's Bus Rapid Transit System, pronounced "MX", short for Emerald Express.
Envision Eugene	The City of Eugene's Comprehensive Plan (latest draft or as adopted). Envision Eugene includes a determination of the best way to accommodate the community's projected needs over the next 20 years.

Terms	Definitions
Environmental Justice	A formal federal policy on environmental justice was established in February 1994, with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations." There are three fundamental environmental justice principles: • To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low-income populations. • To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process. • To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.
Evaluation Criteria	Evaluation criteria are the factors used to determine how well each of the proposed multimodal alternatives would meet the project's Goals and Objectives. The Evaluation Criteria require a mix of quantitative data and qualitative assessment. The resulting data are used to measure the effectiveness of proposed multimodal alternatives and to assist in comparing and contrasting each of the alternatives to select a preferred alternative.
Fatal Flaw Screening	The purpose of a Fatal Flaw Screening is to identify alternatives that will not work for one reason or another (e.g., environmental, economic, community) By using a Fatal Flaw Screening process to eliminate alternatives that are not likely to be viable, a project can avoid wasting time or money studying options that are not viable and focus on alternatives and solutions that have the greatest probability of meeting the community's needs (e.g., environmentally acceptable, economically efficient, implementable).
Fixed Route	Service provided on a repetitive, fixed-schedule basis along a specific route with vehicles stopping to pick up and deliver passengers at set stops and stations; each fixed-route trip serves the same origins and destinations, unlike demand responsive and taxicabs.
Geographic Information System (GIS)	Data management software tool that enables data to be displayed geographically (i.e., as maps).
Goals and Objectives	Goals and objectives define the project's desired outcome and reflect community values. Goals and objectives build from the project's Purpose and Need Statement. Goals are overarching principles that guide decision making. Goals are broad statements. Objectives define strategies or implementation steps to attain the goals. Unlike goals, objectives are specific and measurable.
Guideway	A transit right of way separated from general purpose vehicles.
Hydrology	Refers to the flow of water including its volume, where it drains and how quickly it flows.
Impacts	A term to describe the positive or negative effects upon the natural or built environments as a result of an action (i.e., project).
Key Transit Corridors	Key Transit Corridors are mapped in Envision Eugene and are anticipated to be significant transit corridors for the City and the region

Terms	Definitions
Level of Service (LOS)	Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of elements of transportation infrastructure. LOS is most commonly used to analyze highways, but the concept has also been applied to intersections, transit, and water supply.
Limited English Proficiency (LEP)	A characteristic of individuals who do not speak English as their primary language and have limited ability to read, write, speak, and/or understand English. LEP individuals may be competent in English for certain types of communication (such as speaking or understanding), but still be LEP for other purposes (such as reading or writing).
Local Streets	Local streets have the sole function of providing direct access to adjacent land. Local streets are deliberately designed to discourage through traffic movements.
Low-Income Persons	Those whose median household income is at or below the Department of Health and Human Services poverty guidelines. For a four-person household with two related children, the poverty threshold is $24,300 (year 2016 dollars).
Metropolitan Planning Organization (MPO)	The organization designated by local elected officials as being responsible for carrying out the urban transportation and other planning processes for an area.
Minority Persons	A person who is one or more of the following: • Black: a person having origins in any of the black racial groups of Africa • Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race • Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent • American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition • Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands
Mitigation	A means to avoid, minimize, rectify, or reduce an impact, and in some cases, to compensate for an impact.
Mode	A particular form or method of travel distinguished by vehicle type, operation technology and right of way separation from other traffic.
MovingAhead Project	The City of Eugene and LTD are working with regional partners and the community to determine which improvements are needed on some of our most important transportation corridors for people using transit, and facilities for people walking and biking. MovingAhead will prioritize transit, walking and biking projects along these corridors so that they can be funded and built in the near-term. The project will focus on creating active, vibrant places that serve the community and accommodate future growth. During Phase 1, currently underway, the community will weigh in on preferred transportation solutions for each corridor and help prioritize corridors for implementation. When thinking about these important streets, LTD and the City of Eugene refer to them as corridors because several streets may work as a system to serve transportation needs.

Terms	Definitions
Multimodal	Multimodal refers to various modes. For the MovingAhead project, multimodal refers to Corridors that support various transportation modes including vehicles, buses, walking and cycling.
National Environmental Policy Act of 1969 (NEPA)	A comprehensive federal law requiring analysis of the environmental impacts of federal actions such as the approval of grants; also requiring preparation of an Environmental Impact Statement (EIS) for every major federal action significantly affecting the quality of the human environment.
No Action or No-Build Alternative	An alternative that is used as the basis to measure the impacts and benefits of the other alternative(s) in an environmental assessment or other National Environmental Policy Act (NEPA) action. The No-Build alternative consists of the existing conditions, plus any improvements which have been identified in the Statewide Transportation Improvement Program (STIP).
Off-Peak Period	Non-rush periods of the day when travel activity is generally lower and less transit service is scheduled. Also called "base period."
Park and Ride	Designated parking areas for automobile drivers who then board transit vehicles from these locations.
Participating Agency	A federal or non-federal agency that may have an interest in the project. These agencies are identified and contacted early in the project with an invitation to participate in the process. This is a broader category than "Cooperating Agency" (see Cooperating Agency).
Passenger Miles	The total number of miles traveled by passengers on transit vehicles; determined by multiplying the number of unlinked passenger trips times the average length of their trips.
Peak Hour	The hour of the day in which the maximum demand for transportation service is experienced (refers to private automobiles and transit vehicles).
Peak Period	Morning and afternoon time periods when transit riding is heaviest.
Preferred Alternative	An alternative that includes a major capital improvement project to address the problem under investigation. As part of the decision making process, the Preferred Alternative is compared against the No Action or No-Build Alternative from the standpoints of transportation performance, environmental consequences, cost-effectiveness, and funding considerations.
Purpose and Need	The project Purpose and Need provides a framework for developing and screening alternatives. The purpose is a broad statement of the project's transportation objectives. The need is a detailed explanation of existing conditions that need to be changed or problems that need to be fixed.
Ridership	The number of people using a public transportation system in a given time period.
Right of way	Publicly owned land that can be acquired and used for transportation purposes.
Scoping	A formal coordination process used to determine the scope of the project and the major issues likely to be related to the proposed action (i.e., project).
Screening Criteria	Criteria used to compare alternatives.
Study Area	The area within which evaluation of impacts is conducted. The study area for particular resources will vary based on the decisions being made and the type of resource(s) being evaluated.

Terms	Definitions
Title VI	This title declares it to be the policy of the United States that discrimination on the ground of race, color, or national origin shall not occur in connection with programs and activities receiving Federal financial assistance and authorizes and directs the appropriate Federal departments and agencies to take action to carry out this policy.
Transit System	An organization (public or private) providing local or regional multi-occupancy-vehicle passenger service. Organizations that provide service under contract to another agency are generally not counted as separate systems.
Water Quality	Refers to the characteristics of the water, such as its temperature and oxygen levels, how clear it is, and whether it contains pollutants.

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Community, Neighborhood, and Environmental Justice Summary

The purpose of this Community, Neighborhood, and Environmental Justice Technical Report is to document the potential effects of the construction and operation of the Lane Transit District's (LTD's) and City of Eugene's (City's) MovingAhead corridor alternatives on neighborhoods, community resources, socioeconomics, and environmental justice populations along the corridors, as well as the methods and data used in the assessment. The purpose of the MovingAhead Project (project) is to determine which high-capacity transit corridors identified in the adopted Emerald Express (EmX) System Plan, *Lane Transit District Long-Range Transit Plan* (LTD, 2014) and the Frequent Transit Network (FTN) are ready to advance to capital improvements programming in the near term. LTD and the City initiated the MovingAhead Project in 2014 to identify and examine alternatives for improving multimodal safety, mobility, and accessibility in key transit corridors in the City. A main theme of the City's vision is to concentrate new growth along and near the City's key transit corridors and core commercial areas while protecting neighborhoods and increasing access to services for everyone. LTD and the City are jointly conducting the project to facilitate a more streamlined and cost-efficient process through concurrent planning, environmental review, and design and construction of multiple corridors.

LTD and the City of Eugene examined multimodal transit alternatives in five key transit corridors identified in the *Draft Envision Eugene Comprehensive Plan* (Envision Eugene, 2016, July) and the *DRAFT Eugene 2035 Transportation System Plan* (City of Eugene, 2016a; Draft Eugene 2035 TSP), the region's highest growth centers, and downtown Eugene. These transit corridors are:

- Highway 99 Corridor
- River Road Corridor
- 30th Avenue to Lane Community College (LCC) Corridor
- Coburg Road Corridor
- Martin Luther King, Jr. Boulevard Corridor

No-Build, Enhanced Corridor, and EmX Alternatives were developed for each corridor, except the Martin Luther King, Jr. Boulevard Corridor, for which only No-Build and Enhanced Corridor Alternatives were developed. Each proposed corridor location is shown on Figures S.1-1 and S.1-2 for the Enhanced Corridor Alternatives and the EmX Alternatives, respectively. The *Moving Ahead Level 2 Definition of Alternatives* (CH2M HILL, Inc. [CH2M] et al., 2016) contains a detailed description of the project alternatives. The following items summarize the project alternatives evaluated.

- The **No-Build Alternatives** serve as a reference point to gauge the benefits, costs, and effects of the Enhanced Corridor and EmX Alternatives in each corridor. Each No-Build Alternative is based on the projected conditions in 2035. Capital projects are derived from the financially constrained project lists in the Draft Eugene 2035 TSP, the *Lane County Transportation System Plan* (Lane County Public Works, Engineering Division Transportation Planning, 2004, update in progress), the *Lane Transit District Capital Improvement Plan* (LTD, 2015, Amended 2015, June), and the *Lane Transit District Long-Range Transit Plan* (LTD, 2014).

Figure S.1-1. Enhanced Corridor Alternatives Overview

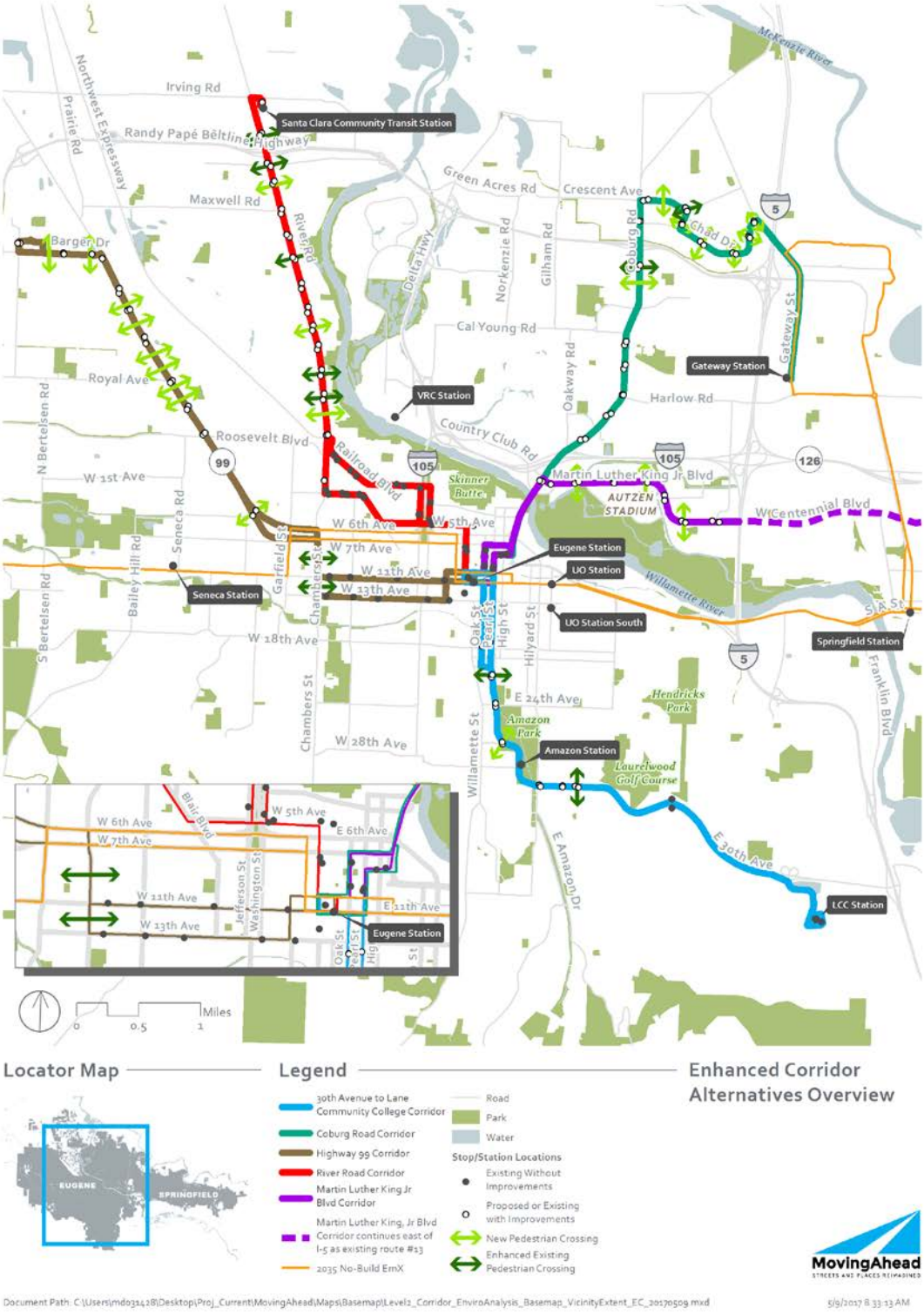
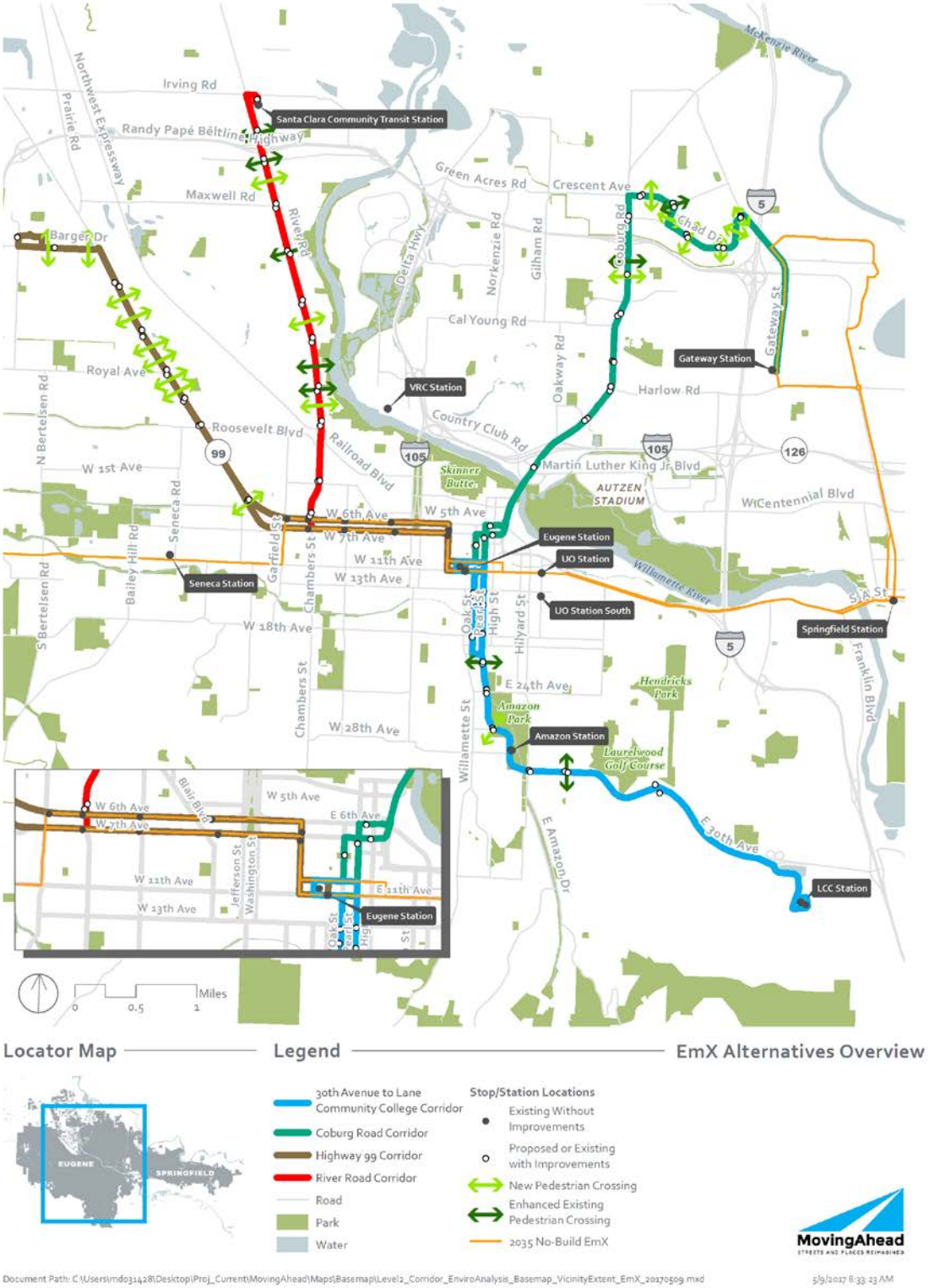


Figure S.1-2. EmX Alternatives Overview



- **Enhanced Corridor Alternatives** are intended to address the project's Purpose, Need, Goals, and Objectives without major transit capital investments, instead focusing on lower-cost capital improvements, operational improvements, and transit service refinements, including 15-minute service frequency. Features can include transit queue jumps (lanes for buses that allow the bus to "jump" ahead of other traffic at intersections using a separate signal phase), stop consolidation, and enhanced shelters. These features can improve reliability, reduce transit travel time, and increase passenger comfort, making transit service along the corridor more attractive.
- **EmX Alternatives** are characterized by sections of exclusive guideway, branded multi-door 60-foot-long bus rapid transit (BRT) vehicles, and enhanced stations with level boarding platforms instead of bus stops; off-board fare collection; transit signal priority; wider station spacing; and 10-minute service frequencies. In general, EmX is a transit mode positioned between fixed-route bus service operating in mixed traffic and urban rail service operating in a separate right of way. EmX service is intended to improve transit speed, reliability, and ridership.

Figure S.1-1 shows the proposed corridors for the Enhanced Corridor Alternatives and Figure S.1-2 shows the proposed corridors for the EmX Alternatives.

This report provides information on the methods used for the analysis; identifies the potential adverse and beneficial effects on neighborhoods, community facilities, and public services that would result from the project's alternatives; and describes the potential economic effects associated with construction and operations. The analysis also determines the potential for the project alternatives to result in any disproportionately high and adverse effects on environmental justice and underserved populations.

This report was prepared in compliance with the National Environmental Policy Act (NEPA), applicable state environmental policy legislation, and local and state planning and land use policies and design standards.

S.1. Affected Environment

The MovingAhead Project's five corridors are primarily located within the City of Eugene, with a portion of the River Road and 30th Avenue to LCC Corridors located within unincorporated Lane County, and a portion of the Coburg Road Corridor located in the City of Springfield.

The Area of Potential Impact (API) for this analysis is 0.25 mile from the centerline of affected streets for Enhanced Corridor Alternatives, and includes the proposed stop locations. The API is 0.5 mile from the centerline of affected streets for EmX Alternatives, and includes the proposed station locations. These APIs were chosen because they are the areas where impacts to community resources during operation and construction would be most likely to occur. For all build alternatives, preliminary stop and station locations have been identified; however, these locations could be altered during design refinement.

S.1.1. Neighborhoods

- The Highway 99 Corridor traverses six neighborhoods – Downtown, Jefferson Westside, Whiteaker, West Eugene, Trainsong, and Bethel.
- The River Road Corridor traverses or is adjacent to seven neighborhoods – Downtown, West Eugene, Whiteaker, Trainsong, River Road, Far West, and Santa Clara.
- The 30th Avenue to LCC Corridor travels through or borders seven neighborhoods. The corridor passes through the Downtown, West University, South University, and Amazon neighborhoods, and

borders the Southeast, Fairmount, and Laurel Hill Valley neighborhoods before the route continues into Lane County.

- The Coburg Road Corridor travels through, or is adjacent to, four neighborhoods – Downtown, Cal Young, Harlow, and Northeast.
- The Martin Luther King, Jr. Boulevard Corridor travels through two neighborhoods – Downtown and Harlow.

S.1.2. Community Facilities and Public Services

Community facilities and public services within the APIs include churches; health care and clinic facilities; police and correctional facilities; fire stations; government buildings (e.g., post office, public works, and Courthouse); libraries; school-related buildings (including the University of Oregon and Pacific University); arts and performance centers; shopping centers; retirement centers; and community centers.

S.1.2.1. Highway 99 Corridor

Within 0.25 mile of the Highway 99 Corridor Enhanced Corridor Alternative, there are 72 community and public facilities, and within 0.5 mile of the EmX Alternative, there are 114 community and public facilities.

Several social service organizations offer services to the minority and low-income populations within the APIs, including organizations that provide affordable housing and food. The Enhanced Corridor Alternative API has one affordable housing facility (West Town), one food bank (Food for Lane County), and one shelter.

The EmX Alternative API has two affordable housing facilities (West Town and Firwood Apartments), three shelter facilities, and one food bank (Food for Lane County).

S.1.2.2. River Road Corridor

For the purposes of this evaluation, community facilities located within the APIs of the River Road Corridor, but east of the Willamette River, are not directly accessible from the corridor. Therefore, they were excluded from this study because the River Road Corridor transit improvements would not influence these neighborhoods or services.

Within 0.25 mile of the River Road Corridor Enhanced Corridor Alternative, there are 71 community and public facilities, and within 0.5 mile of the EmX Alternative, there are 114 community and public facilities.

The social service organizations that offer services to the minority and low-income populations in the Enhanced Corridor Alternative API include one affordable housing facility (West Town), four shelter facilities, and one food bank (Food for Lane County).

The EmX Alternative API covers the same social service organizations as the Enhanced Corridor Alternative API, except this larger API includes one more affordable housing establishment (Firwood Apartments).

S.1.2.3. 30th Avenue to Lane Community College Corridor

Within 0.25 mile of the 30th Avenue to LCC Corridor Enhanced Corridor Alternative, there are 53 community and public facilities, and within 0.5 mile of the EmX Alternative, there are 95 community and public facilities.

The social service organizations that offer services to the minority and low-income populations in the Enhanced Corridor Alternative API include two shelter facilities, one affordable housing facility (West Town), and one food bank (Food for Lane County). The same services are located within the EmX Alternative API for this corridor.

S.1.2.4. Coburg Road Corridor

Within 0.25 mile of the Coburg Road Corridor Enhanced Corridor Alternative, there are 65 community and public facilities, and within 0.5 mile of the EmX Alternative, there are 101 community and public facilities. In addition, the Greyhound Eugene Terminal lies within 200 feet of the Coburg Road Corridor.

The social service organizations that offer services to the minority and low-income populations in the Enhanced Corridor Alternative API include an affordable housing facility (West Town), two shelter facilities, and one food bank (Food for Lane County).

The EmX Alternative API has the same social service organizations as the Enhanced Corridor Alternative API.

S.1.2.5. Martin Luther King, Jr. Boulevard Corridor

Within 0.25 mile of the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative, there are 42 community and public facilities. As noted previously, an EmX Alternative was not developed for this corridor.

The social service organizations that offer services to the minority and low-income populations in the Enhanced Corridor Alternative API include one affordable housing facility (West Town), two shelter facilities, and one food bank (Food for Lane County).

S.1.3. Economics

The study area includes major employment centers, tourist attractions, retail businesses, and colleges that generate trips to and from the area. Government services (including public schools and the University of Oregon) and medical industries are the top employers. The majority of top employers are within 0.5 mile of the project corridors. Industries with the largest share of total employees within Lane County are trade, transportation, and utilities; government (federal, state, and local) and education; and health services. Total employment in Lane County is projected to increase by about 10 percent in the 10-year period from 2014 to 2024, with the greatest increase (about 16 percent) expected in education and health services.

The primary funding source for City and Lane County functions is property taxes (60 percent of budget revenue for both). The tax rate per $1,000 in property value is made up of $1.94 for Lane County taxes, $8.13 for City taxes. School District taxes vary between $5.56 and $8.93, while other miscellaneous levies vary between $0 and $5.83. The planned overall City of Eugene budget for July 1, 2016, through June 30, 2017, is $337.9 million. Within this budget, 9.7 percent is for culture and recreation services, 26.5 percent is for central business functions, 29.9 percent is for public safety, and 33.9 percent is for infrastructure and planning services (City of Eugene, 2017b). LTD does not receive any property tax revenue and is supported by payroll tax revenue.

S.1.4. Demographics and Environmental Justice

Tables S.1-1 and S.1-2 provide an overview of the demographics for each Enhanced Corridor and EmX Alternative, as well as for the City of Eugene, Lane County, and the Central Lane MPO.

Table S.1-1. Demographic Information: Household Data (2015 Estimates)

Area	Total Population	Population Under 18 (%)	Population Over 65 (%)	Owner/Renter Occupied Housing (%)	Average Household Size	Households with No Vehicle (%)
Corridors						
Highway 99 (Enhanced Corridor)	34,027	5.8	9.0	34.5/65.5	1.9	20.5
Highway 99 (EmX)	50,323	20.6	9.4	33.4/66.7	1.9	18.9
River Road (Enhanced Corridor)	34,986	5.3	7.7	34.9/65.1	1.8	20.5
River Road (EmX)	43,925	11.4	6.1	32.7/67.3	1.8	19.6
30th Avenue to LCC (Enhanced Corridor)	30,231	6.0	12.5	32.5/67.5	1.8	17.5
30th Avenue to LCC (EmX)	45,271	27.6	11.3	31.6/68.4	1.7	18.8
Coburg Road (Enhanced Corridor)	40,929	20.6	10.9	35.8/64.2	1.8	17.1
Coburg Road (EmX)	50,189	17.6	9.4	33.6/66.4	1.7	17.9
Martin Luther King, Jr. Boulevard (Enhanced Corridor)	26,459	2.4	24.6	25.2/74.8	1.6	20.8
City of Eugene	158,131	18.0	13.6	48.9/51.1	2.3	11.4
Lane County	354,764	19.4	16.2	59.3/40.7	2.4	8.4
Central Lane Metropolitan Planning Organization	251,721	20.0	15.0[a]	55.0/45.0	2.4	10.0

Source: *American Community Survey 2010-2014 5-Year Estimates*. (U.S. Census Bureau, 2015).

[a] Percentage represents population 60 and over.

Table S.1-2. Demographic Information: Demographic Data (2015 Estimates)

Area	Non-Minority Population (%)	Minority Population (%)				Limited English Proficiency (%)	Population for Whom Poverty Determined (%)	Median Household Income ($)	Population 16 Years and Over in Labor Force	Unemployment (%)
	White Alone	Hispanic or Latino[a]	African American	Asian	Others[b]					
Corridors										
Highway 99 (Enhanced Corridor)	76.8	13.8	1.3	2.7	5.4	2.9	34.6	$29,952	17,617	13.2
Highway 99 (EmX)	78.2	12.0	1.3	3.2	5.4	2.6	35.9	$29,827	25,967	13.5
River Road (Enhanced Corridor)	79.5	9.9	1.5	2.8	6.4	3.3	30.7	$33,911	18,108	13.1
River Road (EmX)	80.3	9.0	1.3	3.4	6.0	2.7	35.2	$31,153	22,525	12.8
30th Avenue to LCC (Enhanced Corridor)	80.8	6.3	1.9	6.3	4.7	1.7	39.9	$38,068	16,119	8.9
30th Avenue to LCC (EmX)	79.9	6.6	1.6	7.0	4.8	1.7	40.4	$35,659	22,713	9.7
Coburg Road (Enhanced Corridor)	81.8	4.5	0.9	6.1	6.7	1.5	31.5	$39,159	19,558	11.1
Coburg Road (EmX)	81.2	5.3	1.0	5.9	6.6	1.5	33.3	$35,860	24,092	9.7
Martin Luther King, Jr. Boulevard (Enhanced Corridor)	79.0	6.0	1.5	8.0	5.6	1.8	41.8	$28,540	12,867	9.5
City of Eugene	77.5	10.6	1.7	3.6	6.7	3.9	24.4	$42,715	80,413	6.0
Lane County	82.6	8.5	1.2	2.3	3.8	3.0	20.4	$43,685	175,784	6.6
Central Lane Metropolitan Planning Organization	--	--	--	--	--	--	23.0	$40,400[c]	1,961,375	6.6

Source: *American Community Survey 2010-2014 5-Year Estimates*. (U.S. Census Bureau, 2015).

[a] Hispanic/Latino is defined as a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

[b] Others is a combination of the categories American Indian or Alaskan Native, Hawaiian or Pacific Islander, some other race, and two or more races.

[c] Median income is calculated by taking the average of the Equity and Opportunity Assessment (EOA) median income levels for Lane County ($42,621), Eugene ($41,326), and Springfield ($37,255).

S.2. Environmental Consequences

S.2.1. Long-term Direct Impacts

S.2.1.1. No-Build Alternative

The No-Build Alternative includes recent transit and some sidewalk improvements that will provide incrementally improved mobility and accessibility within the corridor. While beneficial, the No-Build Alternative would not result in the same degree of transit access and reliability when compared to the planned improvements under the Enhanced Corridor and EmX Alternatives. The No-Build Alternative would not result in negative impacts on neighborhoods, community facilities, or public services. There would be no disproportionately adverse impacts to minority and/or low-income populations. The No-Build Alternatives would also not likely result in any economic benefits associated with development in the area around stops or stations.

S.2.1.2. Build Alternatives

The following summarizes how the Enhanced Corridor and EmX Alternatives would result in similar long-term, direct adverse and beneficial impacts in all corridors. This summary is followed by discussions of impacts unique to each corridor's Enhanced Corridor and EmX Alternatives.

Impacts Common to All Alternatives

Neighborhoods

The Enhanced Corridor and EmX Alternatives would not result in the full acquisition or displacement of any residential properties. Only the River Road Corridor Enhanced Corridor and EmX Alternatives and the Coburg Road Corridor EmX Alternative would potentially displace businesses. None of the corridors would result in the creation of barriers to interaction because the corridors would use existing roadways. Any property acquisitions required would consist of minor acquisition that would allow the existing property use to remain and would not affect the overall neighborhood or result in any impacts to community facilities. The presence of new bus stops or EmX stations would not change the overall visual setting of any neighborhoods because the corridors are located on main arterials within an urban setting that already includes bus service. Operation of the alternatives would also result in beneficial, indirect impacts for neighborhoods with new development around new or enhanced stops and stations that could create new meeting places for area residents as well as opportunities to live and work near transit.

Community Facilities and Public Services

The improvements would provide increased transit accessibility and reliability to residents and access to community facilities. Operation of the alternatives would improve connectivity to neighborhoods through better pedestrian, bicycle, and transit options. For all corridors and alternatives, bicycle lanes, pedestrian crossings, and additional sidewalks would improve multimodal connectivity to all neighborhoods and residents located near the corridor. There would be no negative effects on public services, and operation of the build alternatives is not expected to impact the response or travel times of public service providers. The EmX Alternatives provide BAT lanes in some areas that could enhance response times because emergency service providers could use them, as necessary.

Planned motor vehicle, bicycle, and pedestrian safety measures along all corridors (such as more pedestrian and bicycle crossing options and improved transportation facilities) would improve safety for local residents and the broader community.

Economics

Only the River Road Corridor Enhanced Corridor and EmX Alternatives and the Coburg Road Corridor EmX Alternative have the potential, because of property acquisitions, to displace businesses because of impacts to their drive-throughs. The other alternatives would not displace any businesses. Minor effects would occur to property-tax revenues because no full acquisitions of any parcels are anticipated, and the amount of land acquired would be very small relative to the amount of land adjacent to the corridors. In stop and station areas, beneficial indirect effects would be possible from increased development consistent with existing zoning. Improved transit access could increase the desirability of surrounding residential and commercial areas based on increases in convenience, visibility, and desirability. In addition, expanded pedestrian activity could increase patronage to retail-oriented commercial properties. In stop and station areas, new development and redevelopment of underutilized properties would be possible. This could increase property values and property tax revenues. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Environmental Justice

The Enhanced Corridor and EmX Alternatives would result in beneficial effects during operation, and no adverse impacts are anticipated. Transit accessibility and reliability would be improved for all populations, including minority and low-income populations. The increases in accessibility and reliability would expand access to employment opportunities for those who depend on transit. Non-motorized improvements would also provide transportation benefits to all populations. However, because low-income populations tend to rely on other modes of transportation other than automobiles, the benefits associated with improvements in transit accessibility and reliability would accrue to these populations to a greater degree.

Development in station areas could include new employment opportunities, but could also result in increases in property taxes that could affect low-income populations. In addition, new development or redevelopment in station areas could have a negative indirect effect on residents, especially those who rent, if property values increased and rents subsequently rose. This concern would be more attributed to the EmX Alternatives than the Enhanced Corridor Alternatives. The City of Eugene has affordable housing policies that could minimize this potential negative effect.

No residents or businesses that provide any services unique to environmental justice populations would be displaced. Those displacements that could occur with some alternatives would be businesses that do not provide unique services for minority or low-income populations. In addition, no adverse impacts are anticipated that could result in disproportionately high and adverse effects to environmental justice populations. No vibration impacts are anticipated under any of the build alternatives.

Operation of the build alternatives would have primarily beneficial effects, with no adverse impacts anticipated. Therefore, operation of any of the corridor build alternatives would not result in any disproportionately high and adverse effects to minority and low-income populations.

S.2.1.3. Highway 99 Corridor Environmental Consequences

Both build alternatives for the Highway 99 Corridor include the construction of a pedestrian bridge across the freight railroad connecting to the Trainsong neighborhood. The new bridge would improve access and provide a new non-motorized connection. This would benefit the neighborhood residents, including minority and low-income populations. The new connection would provide a new and safe access point across the railroad and improve connections to transit services.

Enhanced Corridor Alternative

- **Neighborhoods.** A total of 1.3 acres of land would be acquired from 44 properties. Three percent of the corridor would have high probability of potential impact to medium and large trees and the Highway 99 Corridor Enhanced Corridor Alternative would not adversely impact the community character. Pedestrian safety in the corridor would be improved with nine new and two improved pedestrian crossings and improved sidewalks. Potential noise impacts might occur to seven multi-family properties, but it is expected all could be mitigated.
- **Community Facilities and Public Services.** While minor property acquisitions would affect three community facilities, users would benefit from improved accessibility to these facilities. No conflicts with emergency services are anticipated.
- **Economics.** The loss in property tax revenues to the City of Eugene would be negligible and the change in circulation would not impair business access. The Highway 99 Corridor Enhanced Corridor Alternative would result in the removal of 46 off-street parking stalls at 5 properties.
- **Environmental Justice.** All of the identified adverse impacts can be mitigated or minimized to a low severity. None of the impacts would be greater in magnitude than impacts that would be experienced by non-minority and non-low-income populations within the API. Because the project would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate high and adverse impacts on minority and low-income populations are anticipated.

EmX Alternative

- **Neighborhoods.** Property acquisition would be needed from 38 properties and would total 1.6 acres. Three percent of the corridor would have high probability of potential impact to medium and large trees and the Highway 99 Corridor EmX Alternative would not adversely impact the community character. Pedestrian safety in the corridor would be improved with nine new or improved pedestrian crossings and improved sidewalks. Potential noise impacts might occur to 19 properties, and it is expected all can mitigated. There would be a drive-through impact at one vacant parcel. Because this parcel is currently vacant it therefore is not counted as a displacement, but it would be considered a potential displacement if it were to become occupied before the project is constructed. Working with potential property owners to identify this property impact in advance of purchase and mitigate as appropriate would reduce the risk of a potential displacement in this location.
- **Community Facilities and Public Services.** While minor property acquisitions would affect three community facilities, users of these facilities would benefit from improved accessibility. No conflicts with emergency services are anticipated.
- **Economics.** The loss in property tax revenues to the City of Eugene would be negligible and the change in circulation is not expected to result in impairing business access. The Highway 99 Corridor EmX Alternative would result in the removal of 53 off-street parking stalls at 6 properties. As discussed in the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the permanent infrastructure and increased transit frequency of the EmX Alternative improves

reliability, which can lead to increased business exposure, and over time can support and foster accelerated rates of TOD implementation in places that local and regional land use planning documents have designated for mixed-use and multi-family residential development.

- **Environmental Justice.** All of the identified adverse impacts can be mitigated or minimized to a low severity. None of the impacts would be greater in magnitude than impacts that would be experienced by non-minority and-non-low-income populations within the API. Because the project would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate high and adverse impacts on minority and low-income populations are anticipated.

S.2.1.4. River Road Corridor Environmental Consequences

Enhanced Corridor Alternative

- **Neighborhoods.** Property acquisition would be needed from five properties and would total up to 1.3 acres. Three properties would be partially acquired and two properties could be fully acquired due to impacts to their drive-through circulation. One percent of the corridor would have high probability of potential impact to medium and large trees. However, overall, the River Road Corridor Enhanced Corridor Alternative would not adversely impact the community character. Pedestrian safety in the corridor would be improved with five new and three improved pedestrian crossings and improved sidewalks. No noise impacts are expected.
- **Community Facilities and Public Services.** While minor property acquisitions would affect two community facilities, users of these facilities would benefit from improved accessibility. No conflicts with emergency services are anticipated.
- **Economics.** Up to four businesses could be displaced resulting from impacts on their drive-through circulation from property acquisition. The loss in property tax revenues to the City of Eugene would be negligible and the change in circulation is not expected to result in impairing business access. Two off-street parking stalls would be removed, affecting one business. These impacts are not expected to result in loss of business viability. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.
- **Environmental Justice.** All of the identified adverse impacts can be mitigated or minimized to a low severity. None of the impacts would be greater in magnitude than impacts that would be experienced by non-minority and-non-low-income populations within the API. Because the project would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate high and adverse impacts on minority and low-income populations are anticipated.

EmX Alternative

- **Neighborhoods.** Property acquisition would be needed from 40 properties and would total 2.2 acres. Thirty-seven properties would be partially acquired and three properties could be fully acquired due to impacts to their drive-through circulation. Thirteen percent of the corridor would have high probability of potential impact to medium and large trees. However, overall, the River Road Corridor EmX Alternative would not adversely impact the community character. Pedestrian safety in the corridor would be improved with five new and one improved pedestrian crossings and improved sidewalks and bicycle facilities. Potential noise impacts might occur to two properties, and it is expected these can be mitigated.

- **Community Facilities and Public Services.** While minor property acquisitions would affect four community facilities, users of these facilities would benefit from improved accessibility. No conflicts with emergency services are anticipated.
- **Economics.** Up to six businesses could be displaced resulting from impacts on their drive-through circulation from property acquisition. The loss in property tax revenues to the City of Eugene would be negligible and the change in circulation is not expected to result in impairing business access. Thirty-one off-street parking stalls would be removed at 7 businesses. These impacts are not expected to result in loss of business viability. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation. As discussed in the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the permanent infrastructure and increased transit frequency of the EmX Alternative improves reliability, which can lead to increased business exposure, and over time can support and foster accelerated rates of TOD implementation in places that local and regional land use planning documents have designated for mixed-use and multi-family residential development.
- **Environmental Justice.** All of the identified adverse impacts can be mitigated or minimized to a low severity. None of the impacts would be greater in magnitude than impacts that would be experienced by non-minority and-non-low-income populations within the API. Because the project would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate high and adverse impacts on minority and low-income populations are anticipated.

S.2.1.5. 30th Avenue to Lane Community College Corridor Environmental Consequences

Enhanced Corridor Alternative

- **Neighborhoods.** Property acquisition would be needed from 14 properties and would total 0.4 acre. Eleven percent of the corridor would have high probability of potential impact to medium and large trees. However, overall, the 30th Avenue to Lane Community College Corridor Enhanced Corridor Alternative would not adversely impact the community character. Pedestrian safety in the corridor would be improved with two new and one improved pedestrian crossings and improved sidewalks and bicycle facilities. No noise impacts are anticipated with this alternative.
- **Community Facilities and Public Services.** The Enhanced Corridor Alternative would decrease transit service frequency in this corridor, which would reduce accessibility to community facilities for their patrons. While minor property acquisitions would affect eight community facilities, users of these facilities would benefit from improved accessibility. No conflicts with emergency services are anticipated.
- **Economics.** The Enhanced Corridor Alternative would decrease transit service frequency in this corridor, which could negatively affect businesses by making access less convenient for customers. The loss in property tax revenues to the City of Eugene would be negligible and the change in circulation is not expected to result in impairing business access. There would be a net loss of 40 on-street parking stalls affecting businesses on Oak and Pearl streets. While the loss of meter revenues would total approximately $79,200 per year, the parking utilization rates show that adequate parking would still exist to support businesses. These impacts are not expected to result in loss of business viability.
- **Environmental Justice.** All of the identified adverse impacts can be mitigated or minimized to a low severity. None of the impacts would be greater in magnitude than impacts that would be experienced by non-minority and-non-low-income populations within the API. Because the project

would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate high and adverse impacts on minority and low-income populations are anticipated.

EmX Alternative

- **Neighborhoods.** Property acquisition would be needed from 14 properties and would total 0.4 acre. About 17 percent of the corridor would have high probability of potential impact to medium and large trees. However, overall, the 30th Avenue to Lane Community College Corridor EmX Alternative would not adversely impact the community character. Pedestrian safety in the corridor would be improved with two new and one improved pedestrian crossings and improved sidewalks and bicycle facilities. Potential noise impacts might occur to nine properties, and it is expected these can be mitigated.
- **Community Facilities and Public Services.** While minor property acquisitions would affect nine community facilities, users of these facilities would all receive improved accessibility. No conflicts with emergency services are anticipated.
- **Economics.** The loss in property tax revenues to the City of Eugene would be negligible and the change in circulation is not expected to result in impairing business access. Three driveways would be modified or restricted on three businesses that have more than one ingress and egress. There would be a net loss of 51 on-street parking stalls affecting businesses on Oak and Pearl streets. While the loss of meter revenues is estimated to result in approximately $100,980 per year, the parking utilization rates show that adequate parking availability still exists to support businesses. These impacts are not expected to result in loss of business viability. As discussed in the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the permanent infrastructure and increased transit frequency of the EmX Alternative improves reliability, which can lead to increased business exposure, and over time support and foster accelerated rates of TOD implementation in places that local and regional land use planning documents have designated for mixed-use and multi-family residential development.
- **Environmental Justice.** All of the identified adverse impacts can be mitigated or minimized to a low severity. None of the impacts would be greater in magnitude than impacts that would be experienced by non-minority and-non-low-income populations within the API. Because the project would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate high and adverse impacts on minority and low-income populations are anticipated.

S.2.1.6. Coburg Road Corridor Environmental Consequences

Enhanced Corridor Alternative

- **Neighborhoods.** Property acquisition would be needed from 47 properties and would total 1 acre. Less than two percent of the corridor would have high probability of potential impact to medium and large trees and the Coburg Road Corridor Enhanced Corridor Alternative would not adversely impact the community character. Pedestrian safety in the corridor would be improved with two new and seven improved pedestrian crossings and improved sidewalks facilities. No noise impacts are expected from the Enhanced Corridor Alternative.
- **Community Facilities and Public Services.** There would be no adverse impacts on community facilities, and users of all such facilities and services would receive improved accessibility. No conflicts with emergency services are anticipated.
- **Economics.** The loss in property tax revenues to the City of Eugene would be negligible and the change in circulation is not expected to result in impairing business access. This Enhanced Corridor

Alternative would remove 42 off-street parking stalls and five driveways would be modified to right-in and right-out only, affecting five businesses. All of these businesses have more than one ingress and egress. These impacts are not expected to result in loss of business viability.

- **Environmental Justice.** All of the identified adverse impacts can be mitigated or minimized to a low severity. None of the impacts would be greater in magnitude than impacts that would be experienced by non-minority and-non-low-income populations within the API. Because the project would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate high and adverse impacts on minority and low-income populations are anticipated.

EmX Alternative

- **Neighborhoods.** Property acquisition would be needed from 73 properties and would total 4.0 acres. Seventy-one of these properties would be partially acquired and up to two would be fully acquired due to impacts to their drive-through circulation. Thirty-one percent of the corridor would have high probability of potential impact to medium and large trees. However, overall, the Coburg Road Corridor EmX Alternative would not adversely impact the community character. Pedestrian safety in the corridor would be improved with two new and seven improved pedestrian crossings and improved sidewalks and bicycle facilities. Potential noise impacts might occur to 46 properties, and it is expected these can be mitigated.
- **Community Facilities and Public Services.** While minor property acquisitions would affect three community facilities, users of these facilities would all receive improved accessibility. No conflicts with emergency services are anticipated.
- **Economics.** Up to two businesses could be displaced resulting from impacts on their drive-through circulation from property acquisition. The loss in property tax revenues to the City of Eugene would be negligible and the change in circulation is not expected to result in impairing business access. Seven driveways would be modified to right-in and right-out only affecting five businesses, all of which have more than one ingress and egress. In addition, two driveways might be removed from two businesses with drive-through service and 109 off-street parking spaces might be removed from 16 existing businesses. These impacts are not expected to result in loss of business viability. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation. As discussed in the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the permanent infrastructure and increased transit frequency of the EmX Alternative improves reliability, which can lead to increased business exposure, and over time can support and foster accelerated rates of TOD implementation in places that local and regional land use planning documents have designated for mixed-use and multi-family residential development.
- **Environmental Justice.** All of the identified adverse impacts can be mitigated or minimized to a low severity. None of the impacts would be greater in magnitude than impacts that would be experienced by non-minority and-non-low-income populations within the API. Because the project would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate high and adverse impacts on minority and low-income populations are anticipated.

S.2.1.7. Martin Luther King, Jr. Boulevard Corridor Environmental Consequences

Enhanced Corridor Alternative

- **Neighborhoods.** Property acquisition would be needed from eight properties and would total 0.1 acre. Less than percent of the corridor would have high probability of potential impact to medium and large trees and the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative would not adversely impact the community character. Pedestrian safety in the corridor would be improved with three new pedestrian crossings and improved sidewalk facilities. No noise impacts are expected with this Enhanced Corridor Alternative.
- **Community Facilities and Public Services.** There would be minor property acquisitions affecting one community facility, and users of all community facilities in the corridor would receive improved accessibility. No conflicts with emergency services are anticipated.
- **Economics.** The loss in property tax revenues to the City of Eugene would be negligible and the change in circulation is not expected to result in impairing business access. One business driveway and one side street would be restricted from left-turn movements. These impacts are not expected to result in loss of business viability
- **Environmental Justice.** All of the identified adverse impacts can be mitigated or minimized to a low severity. None of the impacts would be greater in magnitude than impacts that would be experienced by non-minority and-non-low-income populations within the API. Because the project would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate high and adverse impacts on minority and low-income populations are anticipated.

S.2.2. Short-term Construction Impacts

S.2.2.1. No-Build Alternative

The No-Build Alternative does not represent building new transit projects beyond those that are under development, including the West Eugene EmX Extension (WEEE) and other bus improvements. There would be no construction impacts associated with the No-Build Alternative.

Because no adverse impacts would be associated with construction, the No-Build Alternative would not result in any disproportionately high and adverse impacts on minority and/or low-income populations.

S.2.2.2. Build Alternative Impacts Common to All Alternatives

lmpacts during construction would be similar for the Enhanced Corridor and EmX Alternatives, involving noise and dust from construction equipment and short-term reductions in travel lanes or detours could occur.

The intensity and the duration of the impacts could be greater with the EmX Alternatives than with the Enhanced Corridor Alternatives because the EmX Alternatives would generally have larger construction footprints related to larger stations and longer linear construction. However, LTD has developed an expedient construction method that narrows the total construction time for each of the stages (utility relocation, flat work, signal work, intersection) in any given area of the corridor by concentrating construction efforts in one segment at a time before moving to the next segment. Therefore, the impacts would be short-term in nature and would typically end once construction is completed.

Neighborhoods

Construction activities would result in temporary noise, dust, vibration, and short-term disruption in access to properties if roadway or lane closures were required. While the effects would be intense, the duration is expected to be less than a month per block and, therefore, the impacts are not expected to be severe or overly disruptive on neighborhoods.

Community Facilities and Public Services

Construction activities could temporarily raise existing noise levels near community facilities and public and social services when construction is adjacent, or in close proximity. Through routine communication with service providers and construction planning, construction is not anticipated to result in impacts on the travel and response times for public service providers. Construction would occur during the normal daytime hours of 7 a.m. and 7 p.m. If construction was planned outside the hours of 7:00 a.m. to 7:00 p.m., the project would be required to obtain a noise variance from local jurisdictions. Construction activities would typically be within areas of existing right-of-way or within temporary construction easements that require advanced notification and property-owner agreement. Therefore, no adverse impacts would result that would negatively affect community facilities or public services.

Environmental Justice

Construction impacts of the build alternatives would affect all populations to the same degree; no impacts would accrue to a greater degree on minority and low-income populations. For any of the temporary construction impacts, measures would be implemented prior to construction to minimize impacts. Because no adverse impacts during construction are anticipated after mitigation, construction of build alternatives would not result in any disproportionately high and adverse impacts on minority and/or low-income populations.

Economics

Access to businesses would be maintained during construction. While some reduction in patronage would likely occur during construction, given the short duration (expedited construction method focused in two blocks at a time) for both the Enhanced Corridor and EmX Alternatives, no long-term effects (relocation or loss of businesses) on businesses are expected from construction. Construction would result in short-term economic benefits on the local economy from the purchase of goods and services to construct the planned projects, and the construction jobs created.

S.2.3. Indirect and Cumulative Effects

Indirect impacts are caused by the project action and occur later in time or are farther removed in distance, but are still reasonably foreseeable. The cumulative impact analysis focuses on those impacts resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes such other actions.

S.2.3.1. No-Build Alternative

This alternative is not anticipated to result in any cumulative impacts, and it would not realize the potential indirect beneficial impacts of helping to fulfil nodal development that the Enhanced Corridor and EmX Alternatives would bring.

S.2.3.2. Build Alternatives

The Enhanced Corridor Alternatives are not anticipated to result in any negative indirect or cumulative impacts. The Enhanced Corridor Alternatives would each provide for incremental improved transit accessibility and economic benefits associated with transit-oriented development (TOD) in the stop areas that are zoned to support TOD. Refer to the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g) for more information. The Enhanced Corridor Alternatives would help to improve mobility within the City of Eugene. In locations where transit stops would be enhanced, ridership would increase and service would be improved. Apart from the improvements in transit access, the Enhanced Corridor Alternatives would not contribute to cumulative effects on community resources.

Indirect and cumulative effects would be the same for the EmX Alternatives. However, the EmX Alternatives would potentially attract higher ridership and have a greater opportunity for economic development associated with TOD because of the improved service, as described previously.

S.3. Mitigation Options

S.3.1. Long-term Direct Impacts

No operational mitigation would be needed for the following environmental resources – air quality; energy and sustainability; land use and prime farmlands; and utilities. During operation, the Enhanced Corridor and EmX Alternatives would have beneficial effects on community resources – no mitigation would be required. This report does not address impacts related to geology and seismic and water quality resources. Avoidance measures would be needed and as a result potential impacts to community facilities, public services, neighborhoods, economics, and environmental justice-associated impacts would be avoided.

The *MovingAhead Noise and Vibration Technical Report* (Michael Minor and Associates, Inc. [MMA] and CH2M, 2017b), *MovingAhead Air Quality Technical Report* (MMA and CH2M, 2017a), *MovingAhead Visual and Aesthetic Resources Technical Report* (CH2M, 2017l), and *MovingAhead Transportation Technical Report* (DKS Associates and CH2M, 2017b) identify proposed mitigation measures that would avoid and minimize impacts on neighborhoods, community facilities, public services, and some business-related impacts. Refer to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) for measures that would be implemented to address the acquisition of property needed to construct and operate the project.

The following list identifies mitigation measure that would be expected during operation of the MovingAhead Build Alternatives. Unless otherwise noted, these measures apply to all the Enhanced Corridor and EmX Alternatives.

- **Acquisitions and Displacements.** Minimize site-specific property impacts during final design; mitigate direct property acquisitions and relocation impacts for federally funded projects through financial compensation and technical assistance; regulate acquisitions and displacements in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 *United States Code* [U.S.C.] 4601 et seq.; Uniform Relocation and Real Property Act of 1970), as amended, and with the Oregon Revised Statutes (ORS).
- **Cultural Resources.** If, in future phases, adverse effects determinations are made on historic resources, then design and draft mitigation plans in cooperation with LTD, the Oregon State Historic Preservation Office (SHPO), local jurisdictions, and FTA. Mitigation measures might include

interpretive panels, photo documentation, Historic American Building Survey/Historic American Engineering Record reporting, historic context statements, and/or other measures as agreed upon.

- **Hazardous Materials.** Perform proper environmental due diligence before acquiring contaminated sites or, where possible, avoid the acquisition of contaminated sites.
- **Noise and Vibration.** If impacts are identified, and mitigation is warranted, begin mitigation for both moderate and severe noise impacts with source treatment, followed by treatments in the noise path. If source and path treatments are not sufficient to mitigate the impacts, evaluate sound insulation implementation for affected properties where the existing building does not already achieve sufficient exterior-to-interior reduction of noise levels.
- **Parklands, Recreation Areas, and Section 6(f).** During subsequent design phases, further explore ways to avoid the permanent loss of park property. If it is found that avoidance would not be practical, compensate for or enhance the remaining park property consistent with the City's *Full 30-Year Vision for Parks and Recreation Capital Project List with Draft Priorities* (City of Eugene, 2017, March 8). Determine specific enhancement measures through coordination with the Eugene Parks and Open Space Division.
- Related to impacts to Section 6(f) park properties, during subsequent design phases, evaluate design avoidance. Per Section 6(f) requirements, if a conversion still persists, consult with the Eugene Parks and Open Space Division, the Oregon Parks and Recreation Department (OPRD), and the Department of Interior's National Park Service (NPS) to develop a Section 6(f) conversion proposal, in accordance with 36 Code of Federal Regulations (CFR) 59.3, which includes replacement of parkland of equal area and value.
- **Section 4(f) Resources.** In future design phases, have LTD and FTA develop detailed impacts analyses and determine detailed minimization, compensatory, and mitigation measures with concurrence from the agency of jurisdiction over the resource; allow for public review; and make a final determination.
- **Ecosystems/Street and Landscape Trees/Visual and Aesthetic Resources.** In areas where street trees would be impacted, incorporate landscape strips into which new street trees could be planted in proposed sidewalks that, in general, would be wide enough for such strips. Where street trees would be removed, plant new trees, replacing all removed trees at a ratio of at least one tree planted for one tree removed, or as otherwise required by *Eugene Code* Sections 6.300 – 6.330. Have tree species selection, soil conditions, and locations conform to City standards. If tree surveys determine that a potentially impacted tree fits the classification criteria for a Heritage Tree or a Charter Tree, refine the design to avoid that impact.
  Where landscape trees would be removed, replant or replace trees with the property owner's agreement. Have LTD coordinate with respective property owners on the selection of trees to be replanted or replaced. In future phases, refine the design of corridor alternatives to mitigate potential short-term and long-term impacts to street and landscape trees.
- **Transportation.** Where impacts to parking, access, and circulation would occur, modify the design to minimize or avoid impacts, as described in the *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n). For intersection impacts, optimize signals and modify lanes to maintain intersection operations.

It is not anticipated that impacts on the City of Eugene tax base from converting property to transportation-related use and removal of on-street parking meters would result in noticeable change. In particular, the potential for increased property values might, over time, result in higher property taxes, especially around stops and station areas. Otherwise, the build alternatives would improve accessibility for all persons, pedestrians, and bicycles. These alternatives would not result in long-term

adverse effects on community character and cohesion. Therefore, no avoidance, minimization, or mitigation measures are proposed for the operational phase.

S.3.2. Short-term Construction Impacts

The analysis indicates that short-term construction impacts might be high in intensity, but would be short in duration. Therefore, they are not considered severe impacts. The following minimization measures are offered for consideration.

- LTD would continue to concentrate construction in short lengths of the corridor to reduce the total duration of construction on adjacent uses.
- LTD would provide adequate barriers and flagging during construction for the bicycle/pedestrian movements to maximize safety.
- For businesses where construction would affect access and reduce parking, LTD would consider temporarily relocating the access and providing incentives for customers to continue frequenting the business (such as advertising to promote business activities).
- To address construction-related impacts, a Construction Management Plan would be developed and tailored to the build alternative selected. At a minimum, it would include a transportation and detour plan; a communication and construction update plan; a signage plan; and an emergency coordination plan.

S.3.3. Indirect and Cumulative Impacts

The indirect and cumulative impacts would be positive because it is anticipated that the build alternatives would support TOD (more so for EmX Alternative investments than for Enhanced Corridor Alternative investments) and improve safety for pedestrians and bicyclists. No avoidance, minimization, or mitigation measures are suggested for indirect and cumulative impacts.

S.4. Conclusions

Table S.4-1 summarizes community, neighborhood, economic and environmental justice environmental consequences by corridor and alternative.

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
Common to All Corridors			
Temporary/Short-term Construction-Related Impacts/Benefits	• None	• Construction activities would affect all populations to the same degree. • Temporary noise, dust, vibration, and disruption in access to properties would occur if any roadway or lane closures were required or as a result of construction equipment blocking access. • Temporary increases in noise and vibration could temporarily affect existing neighborhood noise levels where construction is adjacent or in close proximity to community facilities and public service locations. • The purchase of goods and services to construct the planned projects, and the construction jobs created would result in short-term economic benefits. • All of the identified adverse impacts can be mitigated or minimized to a low severity. None of the impacts would be greater in magnitude than impacts that would be experienced by non-minority and-non-low-income populations within the API. No disproportionate high and adverse impacts on minority and low-income populations are anticipated.	• Impacts would be similar to the Enhanced Corridor Alternative but of greater magnitude in areas where construction footprint is larger for stations and BAT lanes
Long-term Direct Impacts/Benefits	• Would not result in any impacts on neighborhoods, community facilities, or public services • Would not result in any economic benefits associated with development in the areas around stations	• Alternative could provide improved access to community facilities. • Improved pedestrian, bicycle, and transit options would improve connectivity to neighborhoods. • Moderate safety improvements to motor vehicles, bikes, and pedestrians located within and adjacent to neighborhoods. • No conflicts with emergency services are anticipated. • All populations, including minority and low-income populations, would realize improvements in transit	• Same benefits as the Enhanced Corridor Alternative, but to a greater degree because of increased reliability. • There could be greater positive and negative effects from new development or redevelopment, which is more likely to occur with the EmX Alternatives. • EmX Alternatives generally have greater property acquisition, which would increase the loss of property taxes.

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
		accessibility and reliability, and non-motorized access. • Increases in transit accessibility and reliability would improve access to employment opportunities for those who depend on transit. • The benefits associated with improvements in accessibility and reliability would accrue to transit-dependent users to a greater degree. • Development in enhanced stop areas could include new employment opportunities, but could also result in increases in property taxes that would affect low-income populations. • New development or redevelopment in enhanced stop areas could have a negative effect on residents, especially those who rent, as the cost of living in the area increases; but, the City has affordable housing policies that could minimize this potential negative effect. • Property acquisitions would result in a minor loss of property taxes. • There is potential for new development and redevelopment of underutilized properties, which could result in increases in property values and property tax revenues. • Parking and access impacts would reduce available parking or access to residences or businesses in some locations, but the improvements in transit accessibility are anticipated to encourage transit usage and patronage of the area businesses and provide improved access to residential communities. • All of the identified adverse impacts can be mitigated or minimized to a low severity. None of the impacts would be greater in magnitude than impacts that would be experienced by non-minority and-non-low-income populations within the API. No	• Parking impacts are generally the same or greater with the EmX Alternatives.

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
		disproportionate high and adverse impacts on minority and low-income populations are anticipated.	
Indirect and Cumulative Effects	• None	• Beneficial indirect impacts for neighborhoods with any new development include creating new meeting places for area residents, and new opportunities to live and work near transit. These indirect benefits would be likely to affect a zone of approximately 0.25 mile around the Enhanced Corridor Alternative stops only if zoning permits, development interest is present, and land area is available	• Same as the Enhanced Corridor Alternative, however indirect benefits would be likely to affect a zone of approximately 0.5 mile around the EmX Alternative stations only if zoning permits, development interest is present, and land area is available
Mitigation Measures	• None	• Potential long-term impacts associated with acquiring contaminated sites could be mitigated through either performing proper environmental due diligence for all potentially acquired property or by avoiding the acquisition of contaminated sites, where possible. • If, in future phases, adverse effects determinations are made on historic resources, then mitigation plans will be designed and drafted in cooperation with LTD, SHPO, local jurisdictions, and FTA. Mitigation measures may include interpretive panels, photo documentation, Historic American Building Survey/Historic American Engineering Record reporting, historic context statements, and/or other measures as agreed upon. • LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential property acquisitions, parking, property access and circulation, and tree impacts mitigation.	• Same as the Enhanced Corridor Alternative

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
		• The permanent loss of park property would be mitigated, first by further exploring avoidance during subsequent design development phases. If avoidance is found to be practical, then mitigation measures would include compensation or enhancing the remaining park property consistent with the City's *Full 30-Year Vision for Parks and Recreation Capital Project List with Draft Priorities* (City of Eugene, 2017, March 8). Specific enhancement measures would be determined through coordination with the Eugene Parks and Open Space Division. • Project actions for each Enhanced Corridor and EmX Corridor Alternatives would likely result in a Section 4(f) *de minimis* impact, consistent with 23 CFR 774. In future phases, LTD and FTA will develop detailed impacts analyses, determine detailed minimization, compensatory and mitigation measures with concurrence from the agency of jurisdiction over the resource, allow for public review and make a final determination. • Proposed sidewalks in areas where street trees would be impacted, in general, would be wide enough to incorporate a landscape strip into which new street trees could be planted. Where street tree removals would be required, long-term impacts would be mitigated through planting new trees, replacing all removed trees at a ratio of at least one tree planted for one tree removed, or as otherwise required by *Eugene Code,* Sections 6.300 – 6.330. Tree species selection, soil conditions, and locations would conform to City standards. • If tree surveys determine that a potentially impacted tree fits the classification criteria for a	

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
		Heritage Tree or a Charter Tree, the design would be refined to avoid that impact. • Where landscape tree removals would be required, long-term impacts would be mitigated through tree replanting or replacement with the property owner's agreement. LTD would coordinate with respective property owners on the selection of trees to be replanted or replaced. In future phases, design of corridor alternatives might also be refined to mitigate potential short-term and long-term impacts to street and landscape trees. • Detailed noise mitigation planning will be developed in the NEPA documentation phase of the project in accordance with the FTA criteria • Reduce the total duration of construction on adjacent uses. • Provide barriers and flagging for construction to maximize safety. • Develop business retention measures during construction. • Develop a Construction Management Plan to include a transportation and detour plan, a communication and construction update plan, a signage plan and an emergency coordination plan	
Unavoidable Adverse Impacts	• None	• None	• None
Highway 99 Corridor			
Temporary/Short-term Construction-related Impacts/Benefits	• None	• Same as those listed under "Common to All Corridors" for the Enhanced Corridor	• Same as those listed under "Common to All Corridors" for the EmX Alternative
Long-term Direct Impacts/Benefits	• Same as those listed under "Common to All Corridors"	• Construction of a pedestrian bridge across the freight railroad would improve non-motorized connections to the Trainsong Neighborhood, which	• Property impacts would affect 38 properties for a total of 1.6 acres

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
		would benefit neighborhood residents including minority and low-income populations • Would result in the loss of up to 46 off-street parking spaces at 5 properties. Would affect left-turn access at 14 driveways and close access at one property that has alternate access. Would affect circulation or drive-throughs at one property • Property impacts would affect 44 properties for a total of 1.3 acres • Three percent of the corridor would have high probability of potential impact to medium and large trees • Negligible economic impacts • Potential noise impacts on up to seven properties • Minor property acquisition would affect 3 community facilities	• Would result in the loss of up to 53 off-street parking spaces at 6 properties and would affect left-turn access at 14 driveways. Would affect access or drive-through at one property, which is currently vacant. This could be a potential displacement if the property becomes occupied • Construction of a pedestrian bridge across the freight railroad would improve non-motorized connections to the Trainsong Neighborhood, which would benefit neighborhood residents including minority and low-income populations. • Three percent of the corridor would have high probability of potential impact to medium and large trees • Negligible economic impacts • Potential noise impacts on up to 19 properties • Minor property acquisitions would affect 3 community facilities • Could affect two high-risk hazardous material sites
Indirect and Cumulative Effects	• None	• Same as those listed under "Common to All Corridors" for the Enhanced Corridor Alternative	• Same as those listed under "Common to All Corridors" for the EmX Alternative

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
Mitigation Measures	• None	The following are in addition to those listed under "common to All Corridors": • Properties with loss of parking would be compensated • It is expected that noise impacts could be mitigated • Removed trees would be replaced • Detailed noise mitigation planning will be developed in the NEPA documentation phase of the project in accordance with the FTA criteria • Classify large trees at Roosevelt Boulevard and on Barger Drive. Adjust design to avoid impacts to these large trees depending on classification during design refinement.	The following are in addition to those listed under "common to All Corridors": • Properties with loss of parking would be compensated • Removed trees would be replaced • Detailed noise mitigation planning will be developed in the NEPA documentation phase of the project in accordance with the FTA criteria • Classify large trees at Roosevelt Boulevard and on Barger Drive. Adjust design to avoid impacts to these large trees depending on classification during design refinement. • Perform proper environmental due diligence for all potentially acquired property or avoid the acquisition of contaminated sites, where possible.
Unavoidable Adverse Impacts	• None	• None	• None
River Road Corridor			
Temporary/Short-term Construction-related Impacts/Benefits	• None	• Same as those listed under "Common to All Corridors" for the Enhanced Corridor	• Same as those listed under "Common to All Corridors" For the EmX Alternative

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
Long-term Direct Impacts/Benefits	• None	• Property impacts would affect 5 properties for a total of 0.3 acre and potentially displace 3 businesses • Would result in a loss of up to 2 off-street parking spaces at one property. Would affect left turn access at 14 driveways and would affect circulation or drive-through access points at 2 properties • Up to nine percent of the corridor would have high probability of potential impact to medium and large trees. • Minor property acquisitions would affect 2 community facilities • No noise impacts on anticipated properties	• Property impacts would affect 40 properties for a total of 0.7 acres and potentially displace 5 businesses • Would result in the loss of up to 31 off-street parking spaces on 7 business properties and impact left turn access at 7 locations and would affect circulation or drive-through access at 5 businesses • Up to 11 percent of the corridor would have high probability of potential impact to medium and large trees Reduce access to two-stage left turns from two side streets due to median islands on River Road. • Potential noise impacts on up to two properties • Could affect one high-risk hazardous materials site
Indirect and Cumulative Effects	• None	• Same as those listed under "Common to All Corridors" for the Enhanced Corridor Alternative	• Same as those listed under "Common to All Corridors" for the EmX Alternative

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
Mitigation Measures	• None	The following are in addition to those listed under "common to All Corridors": • Properties with loss of parking would be compensated • Removed trees would be replaced • If demonstrated that the permanent impact on West Bank Park can be avoided and short-term minor impacts from construction on West Bank Park would not last over 6 months, then a Section 6(f) conversion would be avoided. If the construction phase could not provide this assurance, then, as required under Section 6(f), further design avoidance would be evaluated during subsequent design development phases.	The following are in addition to those listed under "common to All Corridors": • Properties with loss of parking would be compensated • Removed trees would be replaced • Detailed noise mitigation planning will be developed in the NEPA documentation phase of the project in accordance with the FTA criteria • If demonstrated that the permanent impact on West Bank Park can be avoided and short-term minor impacts from construction on West Bank Park would not last over 6 months, then a Section 6(f) conversion would be avoided. If the construction phase could not provide this assurance, then, as required under Section 6(f), further design avoidance would be evaluated during subsequent design development phases. • Identify locations to provide mitigation planting for the 900 feet of lost landscaping area between Silver Lane and Division Avenue because of construction of the multi-use path. • Perform proper environmental due diligence for all potentially acquired property or avoid the acquisition of contaminated sites, where possible.
Unavoidable Adverse Impacts	• None	• None	• None

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
30th Avenue to LCC Corridor			
Temporary/Short-term Construction-related Impacts/Benefits	• None	• Same as those listed under "Common to All Corridors" for the Enhanced Corridor Alternative	• Same as those listed under "Common to All Corridors" for the EmX Alternative
Long-term Direct Impacts/Benefits	• None	The following are in addition to those listed under "common to All Corridors": • Property impacts would affect 14 properties for a total of 0.4 acre • Would result in the loss of 40 (net) on-street parking spaces on Oak and Pearl Streets. Would not affect off-street parking spaces, access or circulation • Up to 11 percent of the corridor would have high probability of potential impact to medium and large trees • No noise impacts on anticipated properties • Minor property acquisitions would affect 8 community facilities • Could affect one high-risk hazardous materials site	The following are in addition to those listed under "common to All Corridors": • Property impacts would affect 20 properties for a total of 0.6 acre • Three driveways would be modified or restricted on three businesses that have more than one ingress and egress. There would be a loss of 51 on-street parking stalls (net) affecting both Oak and Pearl Street businesses and would result in the loss of 15 off-street parking spaces on 1 property and driveway access for 3 properties would be affected • Intersection impact at Pearl Street and E. 11th Avenue • Up to 17 percent of the corridor would have high probability of potential impact to medium and large trees • Potential noise impacts on up to nine properties • Minor property acquisitions would affect 9 community facilities Could affect four high-risk hazardous materials sites
Indirect and Cumulative Effects	• None	• Same as those listed under "Common to All Corridors" for the Enhanced Corridor Alternative	• Same as those listed under "Common to All Corridors" for the EmX Alternative

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
Mitigation Measures	• None	The following are in addition to those listed under "common to All Corridors": • Properties with loss of parking would be compensated • Removed trees would be replaced • Coordinate downtown impacts with other potential projects in the area and with City Urban Forestry staff. • Perform proper environmental due diligence for all potentially acquired property or avoid the acquisition of contaminated sites, where possible.	The following are in addition to those listed under "common to All Corridors": • Properties with loss of parking would be compensated • Intersection impact could be mitigated with changes in lane configuration. Further coordination with City of Eugene would be needed. • Removed trees would be replaced • Detailed noise mitigation planning will be developed in the NEPA documentation phase of the project in accordance with the FTA criteria • Coordinate downtown impacts with other potential projects in the area and with City Urban Forestry staff. Perform proper environmental due diligence for all potentially acquired property or avoid the acquisition of contaminated sites, where possible.
Unavoidable Adverse Impacts	• None	• None	• None
Coburg Road Corridor			
Temporary/Short-term Construction-related Impacts/Benefits	• None	• Same as those listed under "Common to All Corridors" for the Enhanced Corridor Alternative	• Same as those listed under "Common to All Corridors" for the EmX Alternative

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
Long-term Direct Impacts/Benefits	• None	The following are in addition to those listed under "common to All Corridors": • Property impacts would affect 47 properties for a total of 1 acre • Would result in loss of 42 off-street parking stalls affecting 5 business and 5 driveways would be modified to right-in and right-out only affecting 4 properties that have more than one ingress and egress • Up to two percent of the corridor would have high probability of potential impact to medium and large trees • No noise impacts anticipated • No impacts on community facilities • Could affect two high-risk hazardous materials sites	The following are in addition to those listed under "common to All Corridors": • Property impacts would affect 73 properties for a total of 2.6 acres and potentially displace 2 businesses • Would result in the loss of 109 off-street parking spaces at 19 properties. Would impact left turns at seven locations and affect access or drive-through access at nine businesses • Operational impacts to two intersections (Coburg Road with Country Club Road/Martin Luther King, Jr. Boulevard and Cedarwood Drive/I-105 eastbound onramp) • Up to 29 percent of the corridor would have high probability of potential impact to medium and large trees • Nine driveways would be modified to right-in and right-out only affecting 7 businesses that have more than one ingress and egress. In addition, 2 driveways might be removed from 2 businesses with drive-through service • Potential noise impacts on up to 46 properties • Minor property acquisitions would affect 3 community facilities • Could affect three high-risk hazardous materials sites
Indirect and Cumulative Effects	• None	• Same as those listed under "Common to All Corridors" for the Enhanced Corridor Alternative	• Same as those listed under "Common to All Corridors" for the EmX Alternative

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
Mitigation Measures	• None	The following are in addition to those listed under "common to All Corridors": • Provide intersection improvements, including northbound U-turn movement at Coburg Road/Randy Pape Beltline WB Onramp intersection • Properties with loss of parking would be compensated • Removed trees would be replaced • Perform proper environmental due diligence for all potentially acquired property or avoid the acquisition of contaminated sites, where possible.	The following are in addition to those listed under "common to All Corridors": • Properties with loss of parking would be compensated • Modify northbound general purpose lane on Coburg Road to be BAT lane for buses and vehicles turning left at Oakway Road • Removed trees would be replaced • Detailed noise mitigation planning will be developed in the NEPA documentation phase of the project in accordance with the FTA criteria • Coordinate downtown impacts with other potential projects in the area and with City Urban Forestry staff. • Perform proper environmental due diligence for all potentially acquired property or avoid the acquisition of contaminated sites, where possible.
Unavoidable Adverse Impacts	• None	• None	• None
Martin Luther King, Jr. Boulevard Corridor			
Temporary/Short-term Construction-Related Impacts/Benefits	• None	• Same as those listed under "Common to All Corridors" for the Enhanced Corridor Alternative	• Not applicable

Table S.4-1. Summary of Community Resources Environmental Consequences by Corridor and Alternative

Corridor	No-Build Alternative	Enhanced Corridor Alternative	EmX Alternative
Long-term Direct Impacts/Benefits	• None	• Property impacts would affect 8 properties for a total of 0.1 acre • Up to one percent of the corridor would have high probability of potential impact to medium and large trees • Two driveways and one side street would be restricted from left-turn movements • Potential noise impacts on up to 1 property • Minor property acquisitions would affect 1 park • Could affect one high-risk hazardous materials site	
Indirect and Cumulative Effects	• None	• Same as those listed under "Common to All Corridors" for the Enhanced Corridor Alternative	
Mitigation Measures	• None	• The following are in addition to those listed under "Common to All Corridors": • Removed trees would be replaced • Detailed noise mitigation planning will be developed in the NEPA documentation phase of the project in accordance with the FTA criteria • The permanent loss of 0.13 acre of Alton Baker Park property would be mitigated by further avoidance design during the advance design phase. Refer to Section 8.3.2.1 outlining Section 6(f) requirements when no practical alternative to impacting the park exists. If a conversion still persists, consultation with the Eugene Parks and Open Space Division, OPRD, and NPS would be required to develop a Section 6(f) conversion proposal, in accordance with 36 CFR 59.3. • Perform proper environmental due diligence for all potentially acquired property or avoid the acquisition of contaminated sites, where possible.	
Unavoidable Adverse Impacts	• None	• None	

1. Introduction

1.1. MovingAhead Technical Reports

A total of 20 technical reports have been prepared for the MovingAhead Project. The technical reports have been prepared to support the selection of preferred alternatives for the MovingAhead Project and subsequent environmental documentation. The technical reports assume that any corridors advanced for environmental review will require a documented categorical exclusion under the National Environmental Policy Act (NEPA). Any corridors requiring a higher level of environmental review would be supported by the technical evaluation but might not be fully covered by the technical evaluation.

Technical reports have been prepared for the following disciplines:

- Acquisitions and Displacements (CH2M HILL, Inc. [CH2M], 2017a)
- Air Quality (Michael Minor and Associates, Inc. [MMA] and CH2M, 2017a)
- Capital Cost Estimating (CH2M, 2017b)
- Community Involvement, Agency and Tribal Coordination (CH2M, 2017c)
- Community, Neighborhood, and Environmental Justice (this report)
- Cultural Resources (Heritage Research Associates and CH2M, 2017)
- Ecosystems (Biological, Fish Ecology, Threatened and Endangered Species, Wetlands and Waters of the U.S. and State) (Environmental Science & Assessment, LLC and CH2M, 2017)
- Energy and Sustainability (DKS Associates [DKS] and CH2M, 2017a)
- Geology and Seismic (CH2M, 2017e)
- Hazardous Materials (CH2M, 2017f)
- Land Use and Prime Farmlands (CH2M, 2017g)
- Noise and Vibration (MMA and CH2M, 2017b)
- Operating and Maintenance Costs (Lane Transit District [LTD] and City of Eugene, 2017)
- Parklands, Recreation Areas, and Section 6(f) (CH2M, 2017h)
- Section 4(f) (CH2M, 2017i)
- Street and Landscape Trees (CH2M, 2017j)
- Transportation (DKS and CH2M, 2017b)
- Utilities (CH2M, 2017k)
- Visual and Aesthetic Resources (CH2M, 2017l)
- Water Quality, Floodplain, and Hydrology (CH2M, 2017m)

In general, each technical report includes the following information for identifying effects:

- Relevant laws and regulations
- Contacts and coordination
- Summary of data sources and analysis methods described in the *MovingAhead Environmental Disciplines Methods and Data Report* (CH2M et al., 2015, June)
- Affected environment
- Adverse and beneficial effects including short-term, direct, indirect and cumulative
- Mitigation measures
- Permits and approvals
- References

1.2. Community, Neighborhood, and Environmental Justice Technical Report and Purpose

The purpose of this technical report is to document the results of the community, neighborhood, and environmental justice assessment for the MovingAhead Project corridor alternatives, and the methods and data used in the assessment. The analysis focuses on how construction and operation would affect neighborhoods, community facilities, public services, environmental justice populations, economic setting, and the effects, including adverse and beneficial effects.

As LTD and the City make decisions about preferred corridor alternatives and prioritization of near-term capital investments, they will consider the effects of potential adverse and beneficial effects on neighborhoods, community facilities, and public services, as well as how these might disproportionately impact low-income and minority populations.

1.3. Discipline Experts

Table 1.3-1 identifies discipline experts who contributed to the preparation of this report. This table includes their areas of expertise, affiliated organizations, titles, and years of experience.

Table 1.3-1. Discipline Experts

Discipline	Technical Expert	Affiliated Organization	Title/Years of Experience
Socioeconomics, Environmental Justice, Neighborhoods, Community Facilities, and Public Services	Rob Rodland	CH2M	Project Manager/20 years
Editors	Scott Richman	CH2M	Senior Project Manager/24 years
	Lynda Wannamaker	Wannamaker Consulting	President/33 years
	Jodi Ketelsen	CH2M	Senior Project Manager/20 years
	Ryan Farncomb	CH2M	Senior Transportation Planner/7 years
	Scott Bucklin	CH2M	Transportation Planner/3 years

Source: MovingAhead Project Team. (2017).

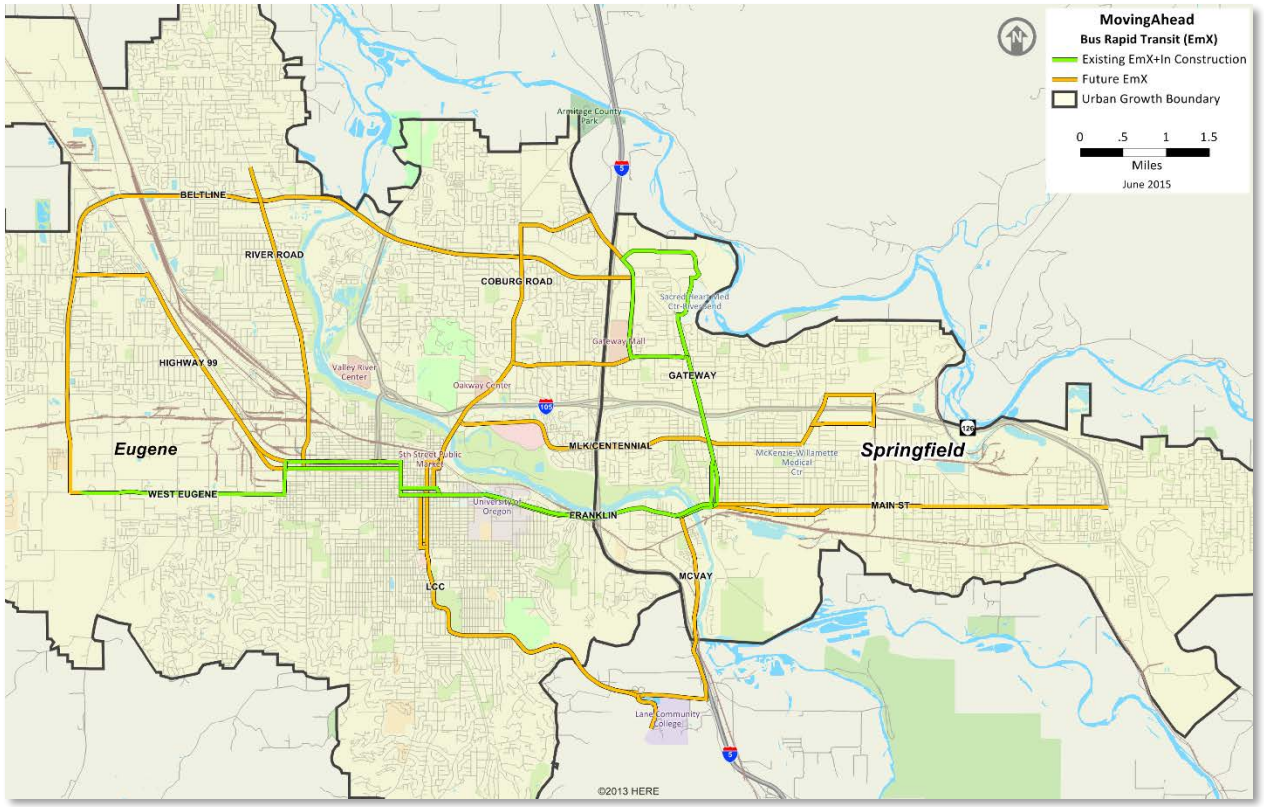
1.4. Study Background

The purpose of the MovingAhead Project is to determine which high-capacity transit corridors identified in the adopted *Central Lane Metropolitan Planning Organization Regional Transportation Plan* (Lane Council of Governments [LCOG], 2011, December; RTP) and the *Lane Transit District Long Range Transit Plan* (LTD, 2014) as part of the Frequent Transit Network (FTN) are ready to advance to capital improvements programming in the near term. The study is being conducted jointly with the City of Eugene and LTD to facilitate a streamlined and cost-efficient process through concurrent planning, environmental review, and design and construction of multiple corridors. The study area includes Eugene and portions of unincorporated Lane County.

The *Lane Transit District Long-Range Transit Plan* (LTD, 2014) identifies the full Martin Luther King, Jr. Boulevard/Centennial Boulevard Corridor as a future part of the FTN. Initially, MovingAhead considered options on Centennial Boulevard to serve Springfield as part of this corridor. Because Springfield does

not have the resources available to consider transit enhancements on Centennial Boulevard at this time, MovingAhead will only develop Emerald Express (EmX) and Enhanced Corridor Alternatives within Eugene. Figure 1.4-1 presents LTD's existing and future bus rapid transit (BRT) system.

Figure 1.4-1. Lane Transit District's Bus Rapid Transit (BRT) System



Source: LTD. (2015, Amended 2015, June).

1.5. Screening and Evaluation of Multimodal Options

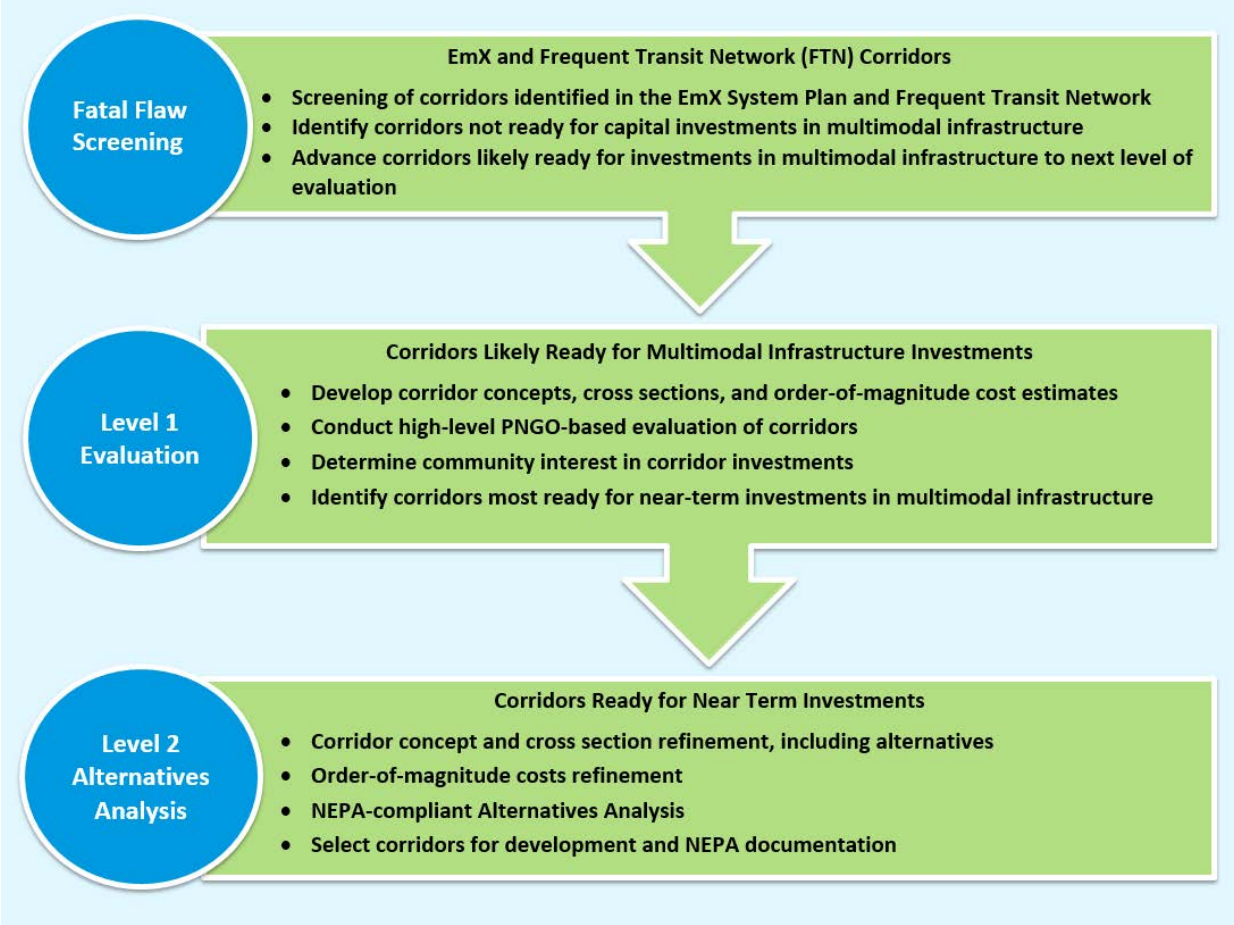
The MovingAhead Project process includes two phases. This first phase has three discrete but closely related tasks: identifying transit improvements; identifying improvements for bicyclists, pedestrians, and users of mobility devices; and preparing a NEPA-compliant evaluation of alternatives focused on the region's transportation system. Corridor options identified as part of the first phase were developed using multimodal cross sections that include variations on automobile, truck, and bus travel lanes; bicycle lanes; landscaping strips; and sidewalks. At the end of the first phase, the City of Eugene and LTD will select the corridors that are most ready for near-term capital improvements and prioritize improvements for funding. The selected corridors will be advanced to the second phase, which will focus on preparing NEPA environmental reviews (Documented Categorical Exclusions), and initiating the Federal Transit Administration (FTA) project development process.

1.5.1. Fatal Flaw Screening

The project team conducted a fatal flaw screening in February 2015 to identify which of the 10 corridors should not move forward to the Level 1 Screening Evaluation (Figure 1.5-1). This high-level evaluation

used criteria based on MovingAhead's Purpose, Need, Goals, and Objectives (LTD, 2015, Amended 2015, June) and existing data to determine which corridors were not ready for capital investment in BRT or multimodal infrastructure in the next 10 years. The screening was conducted with local, regional, and state agency staff. Of the 10 corridors identified, the following three corridors were not advanced from the fatal flaw screening to the Level 1 Screening Evaluation: 18th Avenue, Bob Straub Parkway, and Randy Papé Beltline Highway. Table 1.5-1 shows the results of the fatal flaw screening.

Figure 1.5-1. MovingAhead Phase 1 Steps



Source: Wannamaker Consulting. (2015).

Although originally advanced from the fatal flaw screening, the Main Street-McVay Highway Corridor was also not advanced to the Level 1 Screening Evaluation because the Springfield City Council (on May 18, 2015) and LTD Board (on May 20, 2015) determined that the corridor is ready to advance to a study to select a locally preferred transit solution. At the time (May 2015), the Main Street-McVay Highway Corridor was on a schedule ahead of the MovingAhead Project schedule. If the Main Street-McVay Highway Corridor study schedule is delayed and its progress coincides with this project, the corridor could be reincorporated back into MovingAhead.

Table 1.5-1. Results of the Fatal Flaw Screening

Corridor	Advanced to Level 1	Consider Later
Highway 99	✓	
River Road	✓	
Randy Papé Beltline		✓
18th Avenue		✓
Coburg Road	✓	
Martin Luther King Jr. Boulevard/Centennial Boulevard	✓	
30th Avenue to Lane Community College	✓	
Main Street-McVay Highway	✓	
Valley River Center	✓	
Bob Straub Parkway		✓

Source: LTD and City of Eugene. (2015, June).

The six remaining multimodal corridors were advanced to the Level 1 Screening Evaluation to determine how they compared with each other in meeting the Purpose, Need, Goals, and Objectives.

1.5.2. Level 1 Screening Evaluation

The Level 1 Screening Evaluation assessed how each corridor would perform according to the Purpose, Need, Goals, and Objectives of MovingAhead. The Level 1 Screening Evaluation used existing studies and readily available data to evaluate each corridor. Based on community input and technical analysis, the following corridors and alternatives were advanced from the Level 1 Screening Evaluation to the Level 2 Alternatives Analysis (AA) (Table 1.5-2):

- No-Build Alternatives: all corridors
- Enhanced Corridor and EmX Alternatives:
  - Highway 99 Corridor
  - River Road Corridor
  - 30th Avenue to Lane Community College (LCC) Corridor
  - Coburg Road Corridor
- Enhanced Corridor Alternative:
  - Martin Luther King Jr. Boulevard Corridor

The Valley River Center Corridor received the least public support during public outreach and was not carried forward to the Level 2 AA.

Table 1.5-2. Corridors and Transit Alternatives Advanced to the Level 2 Alternatives Analysis

Corridor	No-Build	Enhanced Corridor	EmX
Highway 99	✓	✓	✓
River Road	✓	✓	✓
30th Avenue to Lane Community College	✓	✓	✓
Coburg Road	✓	✓	✓
Martin Luther King, Jr. Boulevard	✓	✓	

Source: CH2M. (2016).

For a detailed discussion of alternatives and design options considered for each corridor, but not carried forward to the Level 2 AA, please refer to the *MovingAhead Alternatives and Design Options Considered but Eliminated Technical Memorandum* (CH2M, 2016).

1.5.3. Level 2 Alternatives Analysis

To guide the Level 2 AA, LTD prepared new ridership forecasts and related evaluation measures using the LCOG regional model. Base-year and future-year forecasts were prepared for corridor alternatives based upon updated inputs and transit networks specific to each corridor. The planning horizon year used for the Level 2 AA is 2035. The built and natural environments, transit operations, traffic, finance, historical resources, and other areas were also evaluated as part of the Level 2 AA. The findings from the Level 2 AA will aid LTD and the City of Eugene in determining how corridors should be prioritized for capital investments over the next 5 years. Selected corridors will be advanced to Phase 2.

1.6. Purpose and Need

The prioritization of capital investments in multimodal transit corridors is a powerful tool for implementing local and regional comprehensive land use and transportation plans, agency strategic plans, and other community planning documents. Capital investments in multimodal transit corridors can have a substantial impact on patterns of growth and development. By coordinating the timing of, and prioritizing the funding for, strategic multimodal capital investments, the MovingAhead Project (a multimodal transit corridor study) helps ensure that future development is consistent with our region's plans and vision.

The Purpose and Need Statement was refined based on public and agency input.

1.6.1. Purpose

The purpose of the MovingAhead Project is to:

- Develop a Capital Improvements Program that forecasts and matches projected revenues and capital needs over a 10-year period
  - Balance desired multimodal transit corridor improvements with the community's financial resources
  - Ensure the timely and coordinated construction of multimodal transit corridor infrastructure
  - Eliminate unanticipated, poorly planned, or unnecessary capital expenditures
- Identify the most economical means of financing multimodal transit corridor capital improvements

- Establish partnerships between LTD, City of Eugene, and other local agencies that prioritize multimodal transit infrastructure needs and promote interagency cooperation
- Ensure that multimodal transit corridor investments are consistent with local comprehensive land use and transportation plans

1.6.2. Need

The need for the MovingAhead Project is based on the following factors:

- LTD's and the region's commitment to implementing the region's vision for BRT in the next 20 years consistent with the RTP that provides the best level of transit service in a cost-effective and sustainable manner.
- Need for streamlined environmental reviews to leverage systemwide analysis.
- Need to build public support for implementation of the systemwide vision.
- Selection of the next EmX/FTN corridors is based on long-range operational and financial planning for LTD's service.

1.6.3. Goals and Objectives

Goal 1: Improve multimodal transit corridor service

Objective 1.1: Improve transit travel time and reliability
Objective 1.2: Provide convenient transit connections that minimize the need to transfer
Objective 1.3: Increase transit ridership and mode share in the corridor
Objective 1.4: Improve access for people walking and bicycling, and to transit
Objective 1.5: Improve the safety of pedestrians and bicyclists accessing transit, traveling in and along the corridor, and crossing the corridor

Goal 2: Meet current and future transit demand in a cost-effective and sustainable manner

Objective 2.1: Control the increase in transit operating cost to serve the corridor
Objective 2.2: Increase transit capacity to meet current and projected ridership demand
Objective 2.3: Implement corridor improvements that provide an acceptable return on investment
Objective 2.4: Implement corridor improvements that minimize impacts to the environment and, where possible, enhance the environment
Objective 2.5: Leverage funding opportunities to extend the amount of infrastructure to be constructed for the least amount of dollars

Goal 3: Support economic development, revitalization, and land use redevelopment opportunities for the corridor

Objective 3.1: Support development and redevelopment as planned in other adopted documents
Objective 3.2: Coordinate transit improvements with other planned and programmed pedestrian and bicycle projects
Objective 3.3: Coordinate transit improvements with other planned and programmed roadway projects
Objective 3.4: Minimize adverse impacts to existing businesses and industry
Objective 3.5: Support community vision for high capacity transit in each corridor
Objective 3.6: Improve transit operations on state facilities in a manner that is mutually beneficial to vehicular and freight traffic flow around transit stops and throughout the corridor
Objective 3.7: Improve transit operations in a manner that is mutually beneficial to vehicular traffic flow for emergency service vehicles

1.6.4. Evaluation Criteria

Evaluation criteria will be used during the Trade-off Analysis, which is part of the Level 2 AA, to aid in determining how well each of the corridor alternatives would meet the project's Purpose, Need, Goals, and Objectives. The evaluation criteria require a mix of quantitative data and qualitative assessment. The resulting data will be used to measure the effectiveness of each proposed corridor alternative and to assist in comparing and contrasting the alternatives and options. In Table 1.6-1, evaluation criteria are listed for each of the project's objectives. Some objectives have only one criterion for measuring effectiveness, while others require several criteria.

Table 1.6-1. Evaluation Criteria

Goals and Objectives		Evaluation Criteria
Goal 1: Improve multimodal transit corridor service		
Objective 1.1:	Improve transit travel time and reliability	• Round trip p.m. peak transit travel time between select origins and destinations • On-time performance (no more than 4 minutes late) of transit service
Objective 1.2:	Provide convenient transit connections that minimizes the need to transfer	• Number of transfers required between heavily used origin-destination pairs
Objective 1.3:	Increase transit ridership and mode share in the corridor	• Average weekday boardings on corridor routes • Transit mode share along the corridor • Population within 0.5 mile of transit stop • Employment within 0.5 mile of transit stop
Objective 1.4:	Improve access for people walking and bicycling, and to transit	• Connectivity to existing pedestrian facilities • Connectivity to existing bicycle facilities
Objective 1.5:	Improve the safety of pedestrians and bicyclists accessing transit, traveling in and along the corridor, and crossing the corridor	• Opportunity to provide a safe and comfortable environment for pedestrians and bicyclists in the corridor
Goal 2: Meet current and future transit demand in a cost-effective and sustainable manner		
Objective 2.1:	Control the increase in transit operating cost to serve the corridor	• Cost per trip • Impact on LTD operating cost • Cost to local taxpayers
Objective 2.2:	Increase transit capacity to meet current and projected ridership demand	• Capacity of transit service relative to the current and projected ridership
Objective 2.3:	Implement corridor improvements that provide an acceptable return on investment	• Benefit/cost assessment of planned improvements
Objective 2.4:	Implement corridor improvements that minimize impacts to the environment and, where possible, enhance the environment	• Results of screening-level assessment of environmental impacts of transit solutions

Table 1.6-1. Evaluation Criteria

Goals and Objectives		Evaluation Criteria
Objective 2.5:	Leverage funding opportunities to extend the amount of infrastructure to be constructed for the least amount of dollars	• Number and dollar amount of funding opportunities that could be leveraged • Meet the FTA's Small Starts funding requirements
Goal 3: Support economic development, revitalization and land use redevelopment opportunities for the corridor		
Objective 3.1:	Support development and redevelopment as planned in other adopted documents	• Consistent with the BRT System Plan and FTN concept • Consistent with the *Regional Transportation System Plan* (Central Lane Metropolitan Planning Organization [MPO], 2007) • Consistent with local comprehensive land use plans
Objective 3.2:	Coordinate transit improvements with other planned and programmed pedestrian and bicycle projects	• Capability of transit improvement to coordinate with other planned and programmed pedestrian and bicycle projects identified in adopted plans and Capital Improvements Programs
Objective 3.3:	Coordinate transit improvements with other planned and programmed roadway projects	• Capability of transit improvement to coordinate with other planned and programmed roadway projects identified in adopted plans and Capital Improvements Programs
Objective 3.4:	Minimize adverse impacts to existing businesses and industry	• Impacts to businesses along the Corridor measured in number and total acres of properties acquired, parking displacements, and access impacts. • Impact on freight and delivery operations for Corridor businesses
Objective 3.5:	Support community vision for high capacity transit in corridor	• Community vision includes high capacity transit in corridor
Objective 3.6:	Improve transit operations on state facilities in a manner that is mutually beneficial to vehicular and freight traffic flow around transit stops and throughout the corridor	• Impact on current and future year intersection level of service (LOS) on state facilities • Impact on current and future year p.m. peak hour auto/truck travel times on state facilities
Objective 3.7:	Improve transit operations in a manner that is mutually beneficial to vehicular traffic flow for emergency service vehicles	• Qualitative assessment of potential impacts to emergency service vehicle traffic flow and access

Source: LTD and City of Eugene. (2015, June).

LOS = level of service

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2. Alternatives Considered

This section briefly reviews the major features of the alternatives considered in the Level 2 AA. For full details on each alternative and the five corridors described in this technical report – Highway 99, River Road, 30th Avenue to LCC, Coburg Road, and Martin Luther King, Jr. Boulevard – refer to the *MovingAhead Level 2 Definition of Alternatives* (CH2M et al., 2016, July). Each corridor location is shown on Figures 2.1-1 and 2.1-2 for the Enhanced Corridor Alternatives and the EmX Alternatives, respectively.

Figure 2.1-1. Enhanced Corridor Alternatives Overview

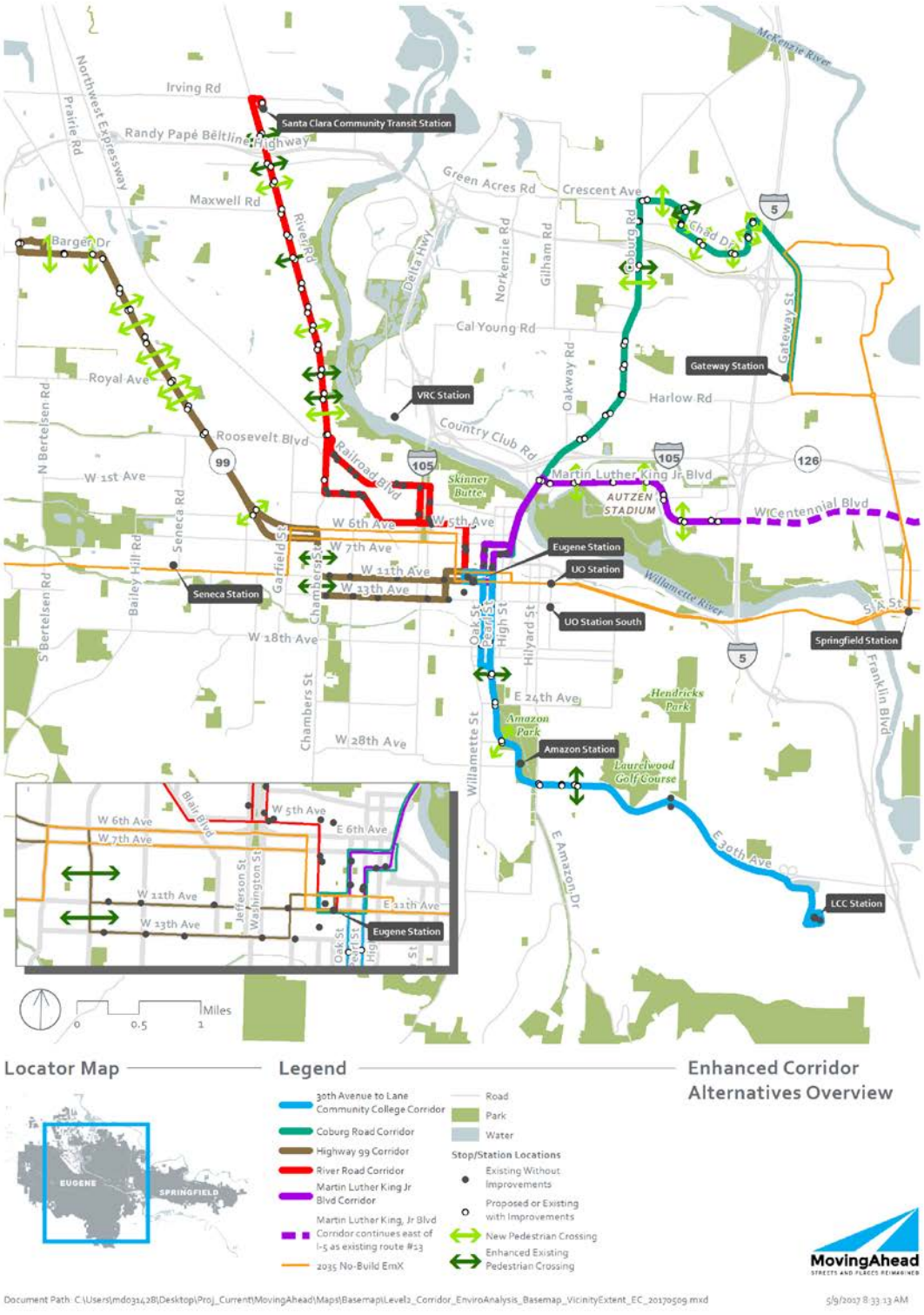
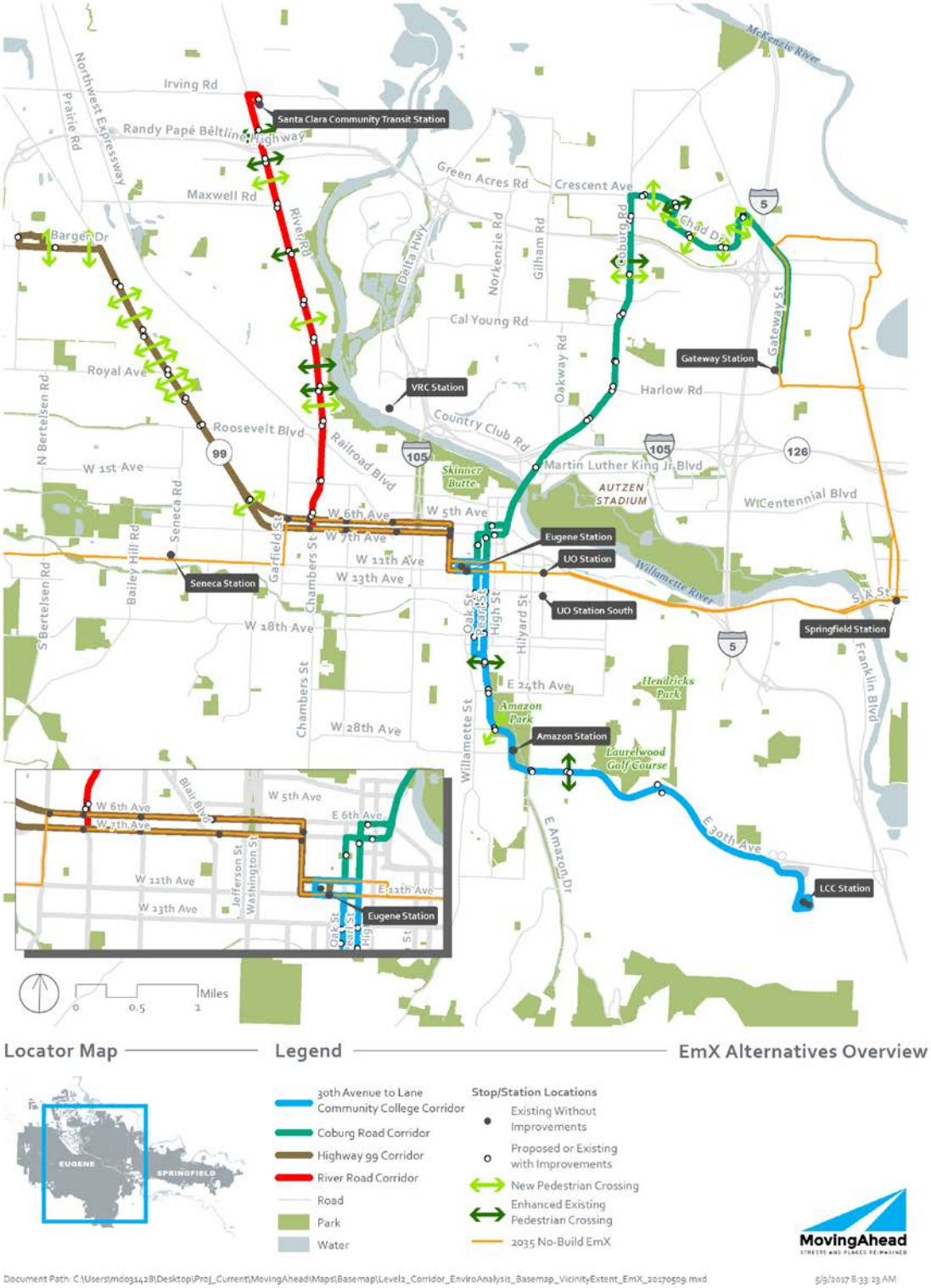


Figure 2.1-2. EmX Alternatives Overview



2.1. No-Build Alternative Transit Network

This section describes the No-Build Alternative transit network, which is based on projected conditions in the year 2035, the project's environmental forecast year. For each corridor, the No-Build Alternative serves as a reference point to gauge the benefits, costs, and effects of the build alternatives.

2.1.1. Capital Improvements

Under the No-Build Alternative, the following capital improvements are anticipated by 2035:

- **West Eugene EmX Extension**. Currently under construction, the West Eugene EmX Extension (WEEE) project and its associated capital improvements will be completed in 2017.
- **Santa Clara Community Transit Center**. The existing River Road Station is located at the southeast corner of the River Road/Randy Papé Beltline Highway interchange between the eastbound on-ramp and River Avenue. To meet growing demand and avoid the impacts of increasing congestion, LTD plans to relocate the River Road Station to a site north of the Randy Papé Beltline Highway at the southeast corner of River Road and Hunsaker Lane. Once relocated to the new site, the River Road Station would be renamed the Santa Clara Community Transit Center. This new transit center is planned to include a mix of uses including a park and ride lot, residential housing, community space, and commercial uses. The River Road Station relocation to the new site is anticipated to be completed by the end of 2018.
- **Main Street EmX Extension**. Included in the RTP and currently under study, the extension of the existing Franklin EmX line on Main Street from Springfield Station to Thurston Station and associated capital improvements (e.g., stations, bicycle and pedestrian facilities, and signal modifications) is anticipated to be completed within the 20-year planning horizon (2035). The No-Build Alternative transit network assumes EmX service on Main Street. However, the outcome of this study, and the ultimate improvements chosen, are uncertain at this time.
- **McVay Highway Enhanced Corridor**. Included in the RTP and currently under study, Enhanced Corridor service from Springfield Station on McVay Highway to LCC and associated capital improvements (e.g., improved stops, transit queue jumps, and improved bicycle and pedestrian crossings) is anticipated to be completed within the 20-year planning horizon (2035).

2.1.2. Transit Operations

The No-Build Alternatives for each corridor include changes to transit service anticipated as a result of the WEEE project, Main Street EmX Extension project, development of the Santa Clara Community Transit Center, and other changes to fixed route service. The following changes to the existing 2016 fixed route services are anticipated by 2035:

- Eliminated routes:
  - Route 11 (replaced by Main Street EmX service)
  - Route 32 (replaced by WEEE service)
  - Route 76 (replaced by WEEE service)
  - Route 85 (replaced by Enhanced Corridor service on the McVay Highway)
  - Route 43 (replaced by WEEE service)
- Other route modifications:
  - Add WEEE service (replaces Route 43 service on W. 11th Avenue) as extension of existing EmX service
  - Add Main Street EmX service from Springfield Station to Thurston Station
  - Add Route 2 with service from Barger Drive/Echo Hollow Road to Eugene Airport

  - Add Route 16 to connect north and south of Main Street with EmX service
  - Add Enhanced Corridor service on McVay Highway from Springfield Station to LCC (replaces Route 85)
  - Reroute Route 33 and extend to Amazon Parkway
  - Reroute Route 36 to extend north of W. 11th Avenue to Barger Drive (replaces Route 43)
  - Reroute Route 41 via Highway 99/Royal Avenue/W. 11th Avenue
  - Reroute Route 40 via Royal Avenue/Elmira Road/Roosevelt Boulevard/Chambers Street/W. 2nd Avenue/Oak and Pearl Streets
  - Add Route 44 paralleling Route 40 above to serve West Eugene
  - Reroute Route 55 to extend to Santa Clara Community Transit Center
  - Reroute Route 93 with service continuing to Eugene Station via Seneca Station and service terminating at the WEEE terminus
- Change in service frequencies:
  - Increase service on Route 24 from 30-minute peak frequencies to 15-minute peak frequencies
  - Increase service on Route 28 from approximately 30-minute peak frequencies (varying 20- to 30-minute intervals) to 15-minute peak frequencies
  - Increase service on Route 41 from 30- and 15-minute peak frequencies to 15-minute peak frequencies
  - Increase service on Route 51 from 60-minute off-peak frequencies to 30-minute off-peak frequencies
  - Increase service on Route 52 from 60-minute off-peak frequencies to 30-minute off-peak frequencies
  - Increase service on Route 66 from 30- and 15-minute weekday a.m. peak, off-peak, and p.m. peak frequencies to 15-minute weekday a.m. peak, off-peak, and p.m. peak frequencies
  - Increase service on Route 67 from approximately 30-minute weekday a.m. peak, off-peak, and p.m. peak frequencies to 15-minute weekday a.m. peak, off-peak, and p.m. peak frequencies
  - Increase service on Route 78 from approximately 60-minute frequencies from 8 a.m. to 6 p.m. to 30-minute weekday a.m. peak, off-peak, and p.m. peak frequencies
  - Increase service on Route 79x from 30-minute peak frequencies to 10-minute peak frequencies, and modify off peak frequencies to 15 minutes from between 10 and 30 minutes currently
  - Decrease a.m. peak service on Route 93 from 60-minute frequencies to 120-minute frequencies during a.m. peak hours, and increase from no service between Veneta and the WEEE terminus to 120-minute frequencies during p.m. peak hours (off-peak service is 120-minute frequencies between Veneta and the WEEE terminus)
  - Decrease a.m. peak service on Route 96 from 30-minute frequencies to 60-minute frequencies, and increase off-peak service from no service between 8:20 a.m. and 3:40 p.m. to 60-minute off-peak frequencies

Key transportation improvements specific to each corridor are described under each corridor's No-Build Alternative.

2.2. Enhanced Corridor Alternatives

Enhanced Corridor Alternatives are intended to address the project's Purpose, Need, Goals, and Objectives without major transit capital investments, instead focusing on lower-cost capital improvements, operational improvements, and transit service refinements. Features could include transit queue jumps (lanes for buses that allow the bus to "jump" ahead of other traffic at intersections using a separate signal phase), stop consolidation, enhanced shelters, and redesigned service to improve

cross-town connectivity. These features improve reliability, reduce transit travel time, and increase passenger comfort.

Enhanced Corridor service would run from 6:45 a.m. to 11:30 p.m. weekdays, 7 a.m. to 11 p.m. Saturdays, and 8 a.m. to 8 p.m. Sundays. Service frequencies are assumed to be 15 minutes during all periods.

2.3. EmX Alternatives

EmX (BRT) Alternatives are characterized by exclusive guideways (business access and transit lanes [BAT] or bus-only lanes); branded, multi-door 60-foot-long BRT vehicles; enhanced stations with level boarding platforms instead of stops; off-board fare collection; signal priority; wider stop spacing; and frequent and redesigned service to improve cross-town connectivity.

EmX service is assumed to run from 6:45 a.m. to 11:30 p.m. weekdays, 7 a.m. to 11 p.m. Saturdays, and 8 a.m. to 8 p.m. Sundays. Service frequencies are assumed to be 10 minutes during all periods.

2.4. Highway 99 Corridor

The Highway 99 Corridor begins at the Eugene Station, travels through downtown, then extends northwest along Highway 99 to Barger Drive, turning west at Barger Drive to terminate on Cubit Street north of the intersection of Barger Drive and Cubit Street east of the Randy Papé Beltline Highway. This corridor is approximately 10.5 round-trip miles.

2.4.1. No-Build Alternative

The Highway 99 Corridor No-Build Alternative includes existing roadway, bicycle, pedestrian, and transit facilities in the corridor, as well as planned improvements in the *DRAFT Eugene 2035 Transportation System Plan* (City of Eugene, 2016; Draft Eugene 2035 TSP). The No-Build Alternative would not include capital improvements on Highway 99. As part of the Draft Eugene 2035 TSP, the following transportation improvements are planned along or adjacent to the corridor:

- Upgrade Bethel Drive, from Highway 99 to Roosevelt Boulevard, to a two-lane urban facility with sidewalks on both sides of the road, bicycle lanes, and planting strips
- Widen Barger Drive immediately west of the Randy Papé Beltline Highway interchange to include an additional travel lane in each direction
- Add a shared-use path on the west side of Highway 99 from Roosevelt Boulevard south to the intersection of W. 7th Avenue and Garfield Street (the section of this project from Roosevelt to W. 5th Avenue has been completed)
- Add bicycle lanes on Garfield Street from Roosevelt Boulevard south to W. 6th Avenue
- Add a bicycle lane on W. 6th Avenue from Garfield Street to W. 5th Avenue
- Complete the sidewalk network on Highway 99 from Roosevelt Boulevard south to Garfield Street
- Add a shared-use path on Roosevelt Boulevard from Maple Street to Highway 99
- Add a bicycle lane on Roosevelt Boulevard from Highway 99 east to railroad tracks

Under the No-Build Alternative, Highway 99 Corridor service would remain at 15-minute headways during peak periods and 30-minute headways during off-peak periods and evenings. Under the No-Build Alternative, a slight change is also made to Route 93, which would stop at the Pearl Buck Center in the absence of Route 44.

2.4.2. Enhanced Corridor Alternative

Capital improvements under the Highway 99 Corridor Enhanced Corridor Alternative would include enhanced bicycle and pedestrian crossings; improvements to existing bus stops and the construction of new stops; construction of queue jumps at some intersections; traffic signal reconstruction; construction of bus-only left turn lanes; and roadway widening at some locations in the corridor.

Existing conventional fixed-service routes would remain the same as with the No-Build Alternative, with the exception of the elimination of Route 41. Service west of WinCo would also remain the same or be improved.

2.4.3. EmX Alternative

The Highway 99 Corridor EmX Alternative would include creating BAT lanes on segments of W. 7th Avenue and Highway 99; reconstructing the Highway 99/Roosevelt Boulevard intersection (traffic signal, turn lanes, and queue jump); completing other intersection modifications in the corridor; roadway widening at some locations; and constructing nine new enhanced pedestrian and bicycle crossings, new sidewalks, and a pedestrian bridge across the railroad line from Highway 99 to the Trainsong neighborhood. Four existing bus stop locations would be improved to EmX stations, in addition to constructing new stations. Some existing EmX stations would be used for the Highway 99 Corridor EmX service.

Route 44 is a conventional service line added to this alternative only, providing coverage on 11th and 13th Avenues as well as service to the Pearl Buck Center on W. 1st Avenue, with 30-minute headways during all periods. This would be a decrease in service for the 11th and 13th Avenue corridors that currently have 15-minute peak service. Route 44 is primarily intended to replace conventional service lost with the removal of the existing Route 41. Route 41 would be replaced with the Highway 99 Corridor EmX service described in this alternative.

2.5. River Road Corridor

The River Road Corridor begins at the Eugene Transit Center, travels through downtown and then north to the Santa Clara Community Transit Center (intersection of Hunsaker Lane and River Road). This corridor is approximately 10.3 round-trip miles.

2.5.1. No-Build Alternative

The River Road Corridor No-Build Alternative would include existing roadway, bicycle, pedestrian, and transit facilities in the corridor, as well as planned improvements in the Draft Eugene 2035 TSP. There would be no additional major bus capital improvements under the No-Build Alternative.

As part of the Draft Eugene 2035 TSP, the following transportation improvements are planned adjacent to and along the River Road Corridor:

- Upgrade the Hunsaker Lane/Beaver Street intersection to urban collector standards, including two travel lanes, a center turn lane, bicycle lanes, sidewalks on both sides of the road, and planting strips from River Road to Division Avenue
- Provide bicycle boulevards on Ruby Avenue, Horn Lane, Arbor Drive, and Park Avenue
- Include sidewalks on Hunsaker Lane, Howard Avenue, and Hilliard Lane
- Provide protected bicycle lanes on River Road from the Northwest Expressway to Division Avenue

Under the No-Build Alternative, River Road Corridor service would remain at 30-minute headways for both Routes 51 and 52 (which together effectively provide 15-minute service during peak periods) and off-peak periods. After 6:15 p.m., there is no longer a combined 15-minute frequency, and headways return to 30 minutes.

2.5.2. Enhanced Corridor Alternative

Capital improvements constructed as part of the River Road Corridor Enhanced Corridor Alternative would include BAT lanes on River Road approaching the Randy Papé Beltline Highway and other roadway improvements, like traffic signal reconstruction at certain locations along the corridor. Improvements to existing bus stops and the construction of new stops would also occur.

Routes 51 and 52 would be eliminated, and Enhanced Corridor service for River Road includes a split alignment in order to serve portions covered by those routes at 30-minute headways. In this arrangement, the area from Railroad Boulevard to W. 1st Avenue is served by one Enhanced Corridor service as a replacement for the Route 51 service, while the area along Blair Boulevard and W. 2nd Avenue is served by the other alignment to replace service lost with removal of Route 52. Those alignments meet at Railroad Boulevard and River Road to serve the River Road Corridor with consistent 15-minute headways.

2.5.3. EmX Alternative

New construction under the River Road Corridor EmX Alternative would include lane repurposing on River Road for BAT lanes, constructing short sections of exclusive bus lanes near the Randy Papé Beltline Highway, reconstructing traffic signals and intersections at several locations, constructing new bicycle and pedestrian crossings, improving existing stops to EmX stations, and constructing new stations. Some existing EmX stations would be used with the River Road Corridor EmX Alternative service.

Transit service changes would also include modifying headways on Route 40 during the a.m. and p.m. peak hours to 15 minutes, developing a new Route 50 “River Road Connector” with 30-minute headways all day, and eliminating Routes 51, 52, and 55. These replacements ensure no loss in existing coverage or service.

2.6. 30th Avenue to Lane Community College Corridor

The 30th Avenue to LCC Corridor begins at Eugene Station and travels south along Pearl Street (outbound) to Amazon Parkway, then on E. 30th Avenue to its terminus at the LCC Station. The return trip travels on Oak Street (inbound), which is the northbound couplet to Pearl Street. This corridor is approximately 10.2 round-trip miles.

2.6.1. No-Build Alternative

The 30th Avenue to LCC Corridor No-Build Alternative would include existing roadway, bicycle, pedestrian, and transit facilities in the corridor, as well as planned improvements in the Draft Eugene 2035 TSP. There would be no additional major bus capital improvements to the 30th Avenue to LCC Corridor under the No-Build Alternative.

The Draft Eugene 2035 TSP identifies the following transportation improvements along or adjacent to the corridor:

- Bicycle boulevard on Alder Drive

For the portion of E. 30th Avenue in unincorporated Lane County, Lane County does not plan to improve bicycle facilities along the road.

Under the No-Build Alternative, 30th Avenue to LCC Corridor service would remain at 30-minute headways on Route 81. The Route 82 service would remain at 10-minute headways during the a.m. peak, 15-minute headways during off-peak periods, and 20-minute headways during the p.m. peak, with no weekend service.

2.6.2. Enhanced Corridor Alternative

Capital improvements as part of the 30th Avenue to LCC Corridor Enhanced Corridor Alternative would include the construction of new bus stops, capital improvements to some existing bus stops, a new traffic signal on Amazon Parkway at E. 20th Avenue, and new bike facilities on Oak and Pearl Streets.

Under the 30th Avenue to LCC Corridor Enhanced Corridor Alternative, service to LCC provided by Routes 81 and 82 would be eliminated and replaced by Enhanced Corridor service. The direct connection between LCC and the University of Oregon Station along Route 81 would be eliminated. It would be replaced by connecting the 30th Avenue to LCC Corridor Enhanced Corridor Alternative to the Franklin EmX line with a transfer at Eugene Station.

2.6.3. EmX Alternative

The 30th Avenue to LCC Corridor EmX Alternative would include repurposing parking and general-purpose lanes to BAT lanes on Oak and Pearl Streets, constructing queue jumps, extending E. 20th Avenue, adding a new traffic signal on Amazon Parkway, and adding a new cycle track on High Street. In addition to constructing new EmX stations, existing bus stops would be improved to EmX stations in certain locations.

Service to LCC provided by Routes 81 and 82 would be replaced with EmX service. The direct connection between LCC and the University of Oregon Station along Route 81 would be eliminated. It would be replaced by connecting the 30th Avenue to LCC Corridor EmX Alternative to the Franklin EmX line with a transfer at Eugene Station.

2.7. Coburg Road Corridor

The Coburg Road Corridor begins at Eugene Station and continues to Coburg Road using the Ferry Street Bridge. The corridor continues north on Coburg Road to Crescent Avenue, east on Crescent Avenue and Chad Drive to N. Game Farm Road, and south on N. Game Farm Road and Gateway Street to the existing Gateway Station at the Gateway Mall. Although service extends from N. Game Farm Road to the Gateway Station, capital improvements for the corridor terminate at Interstate 5 (I-5). This corridor is approximately 11.2 round-trip miles.

2.7.1. No-Build Alternative

The Coburg Road Corridor No-Build Alternative includes existing roadway, bicycle, pedestrian, and transit facilities in the corridor, as well as planned improvements in the Draft Eugene 2035 TSP. There would be no additional major transportation improvements to the Coburg Road Corridor under the No-Build Alternative.

Under the No-Build Alternative, the Coburg Road Corridor service would remain at 15-minute headways on Routes 66 and 67 at all weekday times, 30-minute headways on Saturdays, and 60-minute headways on Sundays.

2.7.2. Enhanced Corridor Alternative

The Coburg Road Corridor Enhanced Corridor Alternative would include new traffic signal construction, intersection reconstruction at several locations on Coburg Road, the addition of queue jumps, and the addition of BAT lanes south of the Interstate 105 (I-105) interchange. New crossings for bicyclists and pedestrians would be constructed. Existing bus stops would be improved and new stops would also be constructed.

Route 12 would be altered to serve Valley River Center and Marcola Road. A new route (Route 60) would be added to serve Valley River Center, and Routes 66 and 67 would be eliminated. This change would provide new service and coverage to the Cal Young neighborhood and along Hayden Bridge Way in Springfield. It would require current passengers along Harlow Road to transfer in order to get downtown.

2.7.3. EmX Alternative

Improvements to the corridor under the Coburg Road Corridor EmX Alternative would include construction of exclusive transit lanes at several locations on Coburg Road and intersection reconstruction at multiple locations. New bicycle and pedestrian crossings and EmX stations would be constructed, and some existing bus stops would be improved to EmX stations.

As in the Coburg Road Corridor Enhanced Corridor Alternative, Route 12 would be altered to serve Valley River Center and Marcola Road, and Route 60 would be added to serve Valley River Center, while Routes 66 and 67 would be eliminated. This change would provide new service and coverage to the Cal Young neighborhood and along Hayden Bridge Way in Springfield. It would require current passengers along Harlow Road to transfer in order to get downtown.

2.8. Martin Luther King, Jr. Boulevard Corridor

The Martin Luther King, Jr. Boulevard Corridor begins at Eugene Station and travels through downtown Eugene on Oak and Pearl Streets and on 7th and 8th Avenues. The corridor uses the Ferry Street Bridge to reach Martin Luther King, Jr. Boulevard and continues east on Martin Luther King, Jr. Boulevard past Autzen Stadium to Centennial Boulevard. Although transit service continues along Centennial Boulevard, capital improvements for the corridor terminate at I-5. The corridor is approximately 6.0 round-trip miles.

2.8.1. No-Build Alternative

The Martin Luther King, Jr. Boulevard Corridor No-Build Alternative includes existing roadway, bicycle, pedestrian, and transit facilities in the corridor, as well as planned improvements in the Draft Eugene 2035 TSP. The Draft Eugene 2035 TSP identifies the following transportation improvements along or adjacent to the Martin Luther King, Jr. Boulevard Corridor:

- Add a center turn lane along sections of Martin Luther King, Jr. Boulevard from Club Road to Leo Harris Parkway
- Under the No-Build Alternative, the Martin Luther King, Jr. Boulevard Corridor service would remain at 30-minute headways

2.8.2. Enhanced Corridor Alternative

Capital improvements associated with the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative would include reconstructing traffic signals at the intersections of Coburg Road and Martin Luther King, Jr. Boulevard and of Martin Luther King, Jr. Boulevard and Centennial Loop; repurposing existing outside general-purpose lanes to BAT lanes on Martin Luther King, Jr. Boulevard; adding a new traffic signal at the intersection of Martin Luther King, Jr. Boulevard and Leo Harris Parkway; enhancing pedestrian crossings; constructing new bus stops; and improving existing bus stops. Existing Route 13 would be eliminated.

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3. Methods and Data

This chapter describes the analysis methodologies and data used for the community, neighborhood, and environmental justice impact evaluation for the MovingAhead Project. This report addresses the following elements – neighborhoods, community facilities, public services, economics, and environmental justice.

3.1. Relevant Laws and Regulations

3.1.1. Federal

- Title VI of the Civil Rights Act of 1964, 42 *United States Code* (U.S.C.) 2000d (Title VI)
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, 42 U.S.C. 4601 et seq. (Uniform Relocation and Real Property Act of 1970)
- Americans with Disabilities Act of 1990, as amended, 42 U.S.C. 12101 et seq. (ADA)
- Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Executive Order 13166 – Improving Access to Services for Persons with Limited English Proficiency
- Executive Order 13045 – Protection of Children from Environmental Health Risks and Safety Risks
- U.S. Department of Transportation (USDOT) Environmental Justice Order 5610.2(a)

3.1.2. State

- Oregon Revised Statutes (ORS) Section 182.542, Duties of Task Force, 2007
- ORS Section 182.538, Environmental Justice of Task Force, 2007
- Executive Order No. 97 – 16, August 1, 1997

3.1.3. Local

There are no local regulations pertaining to the elements addressed in this Community, Neighborhood, and Environmental Justice Technical Report.

3.2. Analysis Area

The Area of Potential Impact (API) used for the analysis is generally the area where project impacts and benefits, both direct and indirect, during construction and operation are most likely to occur. For the Enhanced Corridor Alternatives, the API is 0.25 mile from the centerline of affected streets, and includes the proposed stop locations. For the EmX Alternatives, the API is 0.5 mile from the centerline of affected streets, and includes the proposed station areas.

Within the API for the Enhanced Corridor Alternatives and the EmX Alternatives, demographic, data (including those for minority and low-income populations) were collected for those census block groups within or intersecting the API using data from the *American Community Survey 2010-2014 5-Year Estimates* (U.S. Census Bureau, 2015). Definitions for minority and low-income persons are included in Appendix Table A-2, Terms. In addition, data related to limited English proficiency (LEP) populations (also defined in Appendix Table A-2) were obtained. (LEP can be an indicator of minority populations.) Information was also collected on the location of neighborhood boundaries, community facilities, and

public services using available geographic information system data from the City of Eugene and Lane County.

The economic setting includes a regional-level analysis, because economic data are not available for the APIs. Data were collected at the regional level using information from the *American Community Survey 2010-2014 5-Year Estimates* (U.S. Census Bureau, 2015), as well as from the City of Eugene and Lane County.

3.3. Alternatives Analysis

The alternatives, including the No-Build Alternative, were evaluated for potential effects, both negative and positive, on neighborhoods and community resources. The impact analysis considers the potential for direct, indirect, and cumulative impacts during construction and operation, and identifies measures to mitigate impacts. To determine impacts on community resources, the analysis included a review of other technical reports, which have been prepared for other disciplines that could affect community resources, including: transportation; parklands, recreation, and Section 6(f); air quality; noise and vibration; visual and aesthetic resources; land use and prime farmlands; and acquisitions and displacements. Information on the outreach to date is also provided, with a focus on targeted outreach to minority and low-income populations.

3.3.1. Neighborhoods

The impact analysis for neighborhood includes: residential relocations, changes in neighborhood quality, changes in community cohesion, barriers to interaction, changes in multimodal access and safety that might lead to the beneficial impacts of increased accessibility to parks, employment and civic centers. Neighborhoods have unique demographics and might have different centers for interaction. Not all nuances of a neighborhood are available in this stage of review. However, to the extent demographics information was available, this analysis notes areas that might require additional research in subsequent phases of the MovingAhead Project. For this analysis, the following definition is used:

- "**Neighborhoods**" are geographic areas that the City of Eugene recognizes and has documented in the *Neighborhood Map, City of Eugene Neighborhood Associations 2015* (City of Eugene, 2017a).

3.3.2. Community Facilities and Public Services

The impact analysis for community facilities and public services involves changes in access to community facilities and public services. Changes in delivery of public services might involve increased response time (a negative impact) or improvements that help public services delivery (a positive impact). For this analysis, the following definitions are used:

- "**Community facilities**" are religious institutions, parks and recreational facilities, social services (such as food banks, shelters, and community centers), and cultural institutions (such as, museums).
- "**Public services**" are emergency service providers (police and fire), hospitals, schools (including public and private), and government facilities (including courthouses, the city hall, post offices, and libraries).

3.3.3. Economics

Economic impacts are qualitatively addressed. The analysis considered how the construction and operation of the alternatives would benefit or affect the larger regional economy. Direct impacts considered the potential business acquisitions, changes in business accessibility including parking, drive-

through circulation, and ingress and egresses, and if applicable, potential for employment displacement. Displacements or conversions of property to public transportation can reduce property taxes to the City and Lane County. For this analysis, these estimates are prepared by land use type, not on a per-property evaluation basis.

Indirect impacts related to the potential for alternatives to support transit-oriented development (TOD), particularly in the station areas that, in turn, might result in a stronger tax base for the City and Lane County.

3.3.4. Environmental Justice

To determine the potential for any disproportionately high and adverse impacts to minority and/or low-income populations, the analysis included the following:

- Analysis of demographic data within the API compared to the reference populations of the City of Eugene and Lane County
- Review of the public involvement to date, specifically, targeted outreach to minority and low-income populations, including Title VI recorded efforts
- Review and analysis of the environmental documentation prepared for the project to determine if any of the impacts, after mitigation, would be adverse and where these impacts occur
- If adverse impacts were identified, then it was determined whether the areas of impacts would potentially disproportionately affect minority and low-income persons
- Whether the disproportionately adverse effect would be offset by beneficial effects on the same population

3.3.5. Cumulative Impact Analysis

Cumulative impacts were qualitatively analyzed using the permanent improvements of the build alternatives, as well as temporary construction impacts from building these improvements. An assessment of cumulative impacts, including a discussion of how the proposed project, combined with other past, current, and foreseeable future actions, would cumulatively impact community resources in the API.

3.4. Significance Thresholds

The following points were used to determine significance thresholds for potential impacts on the community and its resources during construction and operation.

Neighborhoods

- The alternative would disrupt or bifurcate the neighborhoods or provide new connections for the neighborhood.
- The alternative would result in obstacles in transportation or conversely improve accessibility and travel patterns for vehicles, pedestrians, and bicycles.
- The alternative would substantially alter the neighborhood or the social and economic character of the area by:
  - Displacing/relocating a significant number of people and/or families
  - Creating or removing barriers between segments of the neighborhood
  - Altering the physical boundaries of the neighborhood
  - Changing access to neighborhoods or businesses
  - Reducing or increasing cut-through traffic

- Disrupting or improving neighborhood pedestrian and bicycle travel options and pedestrian and bicycle connections to public services or shopping

Community Facilities and Public Services

- Community facilities and public services would be disrupted or enhanced through a change in access to facilities and/or a significant alteration of service areas.

Economics

- The alternative would or would not support the levels of employment and residential density planned for the project area.
- The alternative would result in lowering the tax base or enhance the growth of a vibrant economy.
- The alternative would result in the closure or acquisition and/or displacement of existing businesses or conversely improve visual attention and grow larger customer base.

Environmental Justice

- The alternative would result in impacts that would be adverse and would result in disproportionately high and adverse impacts on minority and/or low-income populations

4. Public Involvement

This section provides information on the public involvement that has been conducted for the MovingAhead Project. This section summarizes activities and results that are more thoroughly documented in the *MovingAhead Community Involvement, Agency, and Tribal Coordination Report* (CH2M, 2017c), which was prepared to document the various methods and results of public outreach efforts during this preliminary planning phase.

The project engaged minority and low-income populations in the public involvement process. LTD ensures full compliance with Title VI of the Civil Rights Act of 1964 by prohibiting discrimination against any person based on race, color, national origin, or sex. The public involvement plan developed for the project included a demographic analysis to identify minority, elderly and low-income populations as well as those populations considered limited English proficient. The demographic information was used in the development of outreach activities to ensure these populations would be involved and have opportunities to learn about the project and provide input.

NEPA identifies the importance of public engagement on projects including early in the overall process.

4.1. Public Involvement Goals

LTD and the City of Eugene developed the following goals:

- Provide early and ongoing opportunities for stakeholders to raise issues and concerns that can be considered through equitable and constructive two-way communication between the project team and the public
- Encourage the participation of all stakeholders regardless of race, ethnicity, age, disability, income, or primary language by offering alternative accommodations, as needed (such as translation services, activities for children at community meetings, and accessible meeting facilities)
- Promote fair treatment so that no group of people (racial, ethnic, or socioeconomic) bears a disproportionate share of the negative environmental consequences resulting from a program or policy
- Ensure that public contributions are considered in the decision-making process and can influence the agencies' decision
- Build on information gathered through related planning processes and ensure effective coordination and consistency with those efforts

Beginning with the early stages of the MovingAhead Project in 2015, LTD and the City of Eugene have been working with the public and key stakeholders providing information on the project and offering opportunities for input. Project stakeholders include institutions, public agencies, advocacy groups, organized neighborhood and business groups, and Eugene and Springfield residents.

4.2. Outreach Activities and Tools

The following items provide information on the activities and tools that have been implemented to engage the public and stakeholders.

- **Project Website** – provides information on the project, library of project documents, upcoming events, information on participation opportunities, and a contact form where the public can provide comments, ask questions, or join the project mailing list. In addition, the website has been used to host an online version of the workshops and open house.

- **Social Media** – Twitter, Facebook, and RSS accounts maintained by LTD and the City of Eugene advertise public input opportunities and public events.
- **Fact Sheets** – fact sheets have been used to provide information on the project including project steps and opportunities for all local residents to be involved.
- **Interested Parties List** – The City of Eugene and LTD provided names and contact information to populate an interested parties list. The list includes names, addresses and email addresses. At different project milestones information is sent to those identified as interested parties on the list.
- **Neighborhood and Community Group Meetings** – LTD and City of Eugene staff have attended meetings throughout the project area. The topics for these meetings have varied based on the timing. These meetings are used to keep the public informed and seek input.
- **Public Events** – LTD and City of Eugene staff have attended a variety of public events in the region including Party in the Parks located at area parks, Campbell Center Ice Cream Social, Breakfast at the Bike Bridges located at various locations, and the Bascom Village Earth Day Event.
- **Workshops** – LTD and the City of Eugene hosted five workshops in different areas or the region. Each workshop targeted one or more corridors. At workshops, community members identified transportation needs in their communities and designed roadway cross-sections for key transit corridors.
- **Open Houses** – LTD and the City of Eugene have held open houses at the Eugene Public Library as the project has progressed to provide updates to the public on the project, information on the corridors, and seek their input.
- **Oversight Committee** – The City and LTD established an oversight committee for the project that has been charged with providing a recommendation to the City Council and LTD Board of Directors at each milestone and about a final prioritization of infrastructure investments in the Frequent Transit Network corridors.
- **Sounding Board** – The Sounding Board includes representatives of the EmX Steering Committee, Accessible Transportation Committee, Human Rights Commission, Sustainability Commission, Planning Commission, and the Bike Pedestrian Advisory Committee as well as a representative of Lane County Public Health. Sounding Board meetings are open to the public.
- **Property Owner Outreach** – In November 2016, LTD and the City of Eugene mailed a notice to all property owners, businesses, and residents (approximately 5,700 addresses) adjacent to potential infrastructure improvements that might be part of a MovingAhead build alternative. The mailer provided an overview of MovingAhead and information about how to participate.
- **Business and Residence Canvassing** – LTD and the City of Eugene canvassed businesses and residences along the MovingAhead corridors to share information about the project and inform business owners and residents about how to be involved in MovingAhead. Canvassers left information at more than 500 businesses and homes, and spoke with someone at 273 locations (businesses or homes).

4.3. Targeted Outreach

The project has ensured to engage minority and low-income populations in the public involvement process. The public involvement plan developed for the project included a demographic analysis to identify minority and low-income populations as well as those populations considered limited English proficient. The demographic information was used in the development of outreach activities to ensure these populations would be involved and have opportunities to learn about the project and provide input.

Fact sheets have been translated into Spanish and at open house meetings an interpreter and translation services have been made available. Community workshops have included supervised children activities. A Latino leader's focus group has been formed to provide the project team with insights on how to better reach the Latino community. To date three events have been held with the group. The Sounding Board committee includes the Human Rights Commission, which addresses equity issues. Information on upcoming events has been posted in places with large exposure such as the library, LTD stations, on LTD buses and other locations. Public materials have been presented in "easy to understand" language with "jargon" words removed or fully explained. Graphics have also been used to convey information to reduce the need to translate materials and to accommodate multiple learning styles. By request, all project materials are available in alternative formats (including large print, Braille, cassette tape, or computer disc).

Efforts and activities to make information easily accessible to a diversity of persons included:

- Advertising for public open houses and workshops, and distributing information through affordable housing providers
- Advertising open houses and workshops in places with broad exposure including the library, LTD stations, LTD buses and City of Eugene offices
- Providing children's activities at all public open houses and workshop
- Distribution of information through local schools
- Providing information about how to request accommodations or translations on public open house and workshop notices
- Holding Latino leader focus group to share project information and gather input
- Holding meetings with social service providers including ShelterCare and the Lane Independent Living Alliance
- Connecting with representatives from LTD's Accessible Transportation Committee and the City of Eugene's Human Rights Commission on the Sounding Board
- Translating project information into Spanish including a Spanish language fact sheet with general project information and instructions on how to request additional information in Spanish
- Holding tabling events at Latino Family Fun Night, Casa de Luz in the Bethel neighborhood, Food for Lane County box distribution, and Centro Latino bus pass distribution.

4.3.1. Tribal Outreach

Five Tribes have been identified that might have an interest in the MovingAhead project:

- The Confederated Tribes of the Grand Ronde
- The Confederated Tribes of the Siletz Indians
- The Confederated Tribes of the Warm Springs
- The Coquille Indian Tribe of Oregon
- The Confederate Tribes of Coos, Lower Umpqua, and Siuslaw Indians of Oregon

LTD invited the five Tribes to participate in a web-based meeting on March 7, 2016. After the initial invitation, follow-up phone calls and emails were sent. The web-based meeting included an overview of the MovingAhead corridors and alternatives. No Tribal representatives attended the web-based meeting. On March 9, 2016, LTD followed up by emailing a link to a recording of the web-based meeting to ensure that all interested Tribes had the opportunity to review the project information and provide comments. LTD did not receive any comments from Tribal representatives and no concerns were expressed by Tribal representatives during the MovingAhead process.

4.4. Public and Stakeholder Outreach Events

Through the project LTD and the City of Eugene have provided multiple opportunities for involvement. Table 4.4-1 provides information on the events that have been held to provide information and seek input on the project.

Table 4.4-1. Public and Stakeholder Events to Date

Events	Summary
Workshops (May 2015) [a]	Five workshops were held in different areas of the region. Each workshop targeted one or more corridors. Approximately 130 people attended the workshops.
Oversight Committee Meeting (June and September 2015, and March 2016)	Three meetings held prior to publication of the AA report
Sounding Board Meeting (May, June, September 2015, February 2016, and February 2017)	Five meetings held prior to the publication of the AA report
LTD Strategic Planning Committee (formerly EmX Steering Committee) (March, April, June, August, December 2015; February, April, August, November 2016; and February and March 2017)	Thirteen briefings prior to the publication of the AA report
Community Events (May 2015 – May 2017)	The project team attended more than 25 community events or tabled at public places throughout the region. Examples include We Are Bethel Celebration, Art Walk-Downtown Library, Willamalane Summer Fair, River Road Picnic, Jefferson Westside Picnic, Amazon Pool, Sunday Streets Downtown, Bethel Family Fun Night, Echo Hollow Pool, Concert in the Park: Make-A-Band, Sunday Streets Friendly, Food for Lane County box distribution, and Breakfast at the Bike Bridges.
Latino Leaders Focus Groups (August 2015)	Focus group for leaders in the Latino community. Nineteen people attended and provided comments.
Tabling targeted toward Latino community members (summer/fall 2015 and summer 2016)	The team staff tabled at three events targeted to Latino community members: • Centro Latino Americano bus pass distribution event • Casa de Luz in the Bethel neighborhood • Latino Family Fun Night
Neighborhood Association Meetings (May 2015 – May 2017)	Project information was provided as part of neighborhood association meetings with staff providing current project status and answering questions.
Business Leader Outreach (May 2015 – May 2017)	The project team presented to the Eugene Chamber of Commerce's Local Government Affairs Council (LGAC) and met with the transportation subcommittee. The Chamber hosted an expanded LGAC meeting at the Eugene Public Library to discuss and solicit feedback about the role of transit in improving the economy.

Table 4.4-1. Public and Stakeholder Events to Date

Events	Summary
Open Houses (September 14, 2015, and March 7, 2016)	Two open houses were held at the Eugene Public Library. Forty people attended the September 2015 open house and 75 people attended the March 2016 open house.
Virtual Open Houses (May 2015, September 2015, and March 2016)	Virtual open houses were held in the same timeframe as in-person open houses and workshops. Each virtual open house was provided on the project website and was available for about one month. Approximately 850 people visited the May 2015 virtual open house with 89 comment forms submitted. More than 1,000 people visited the September 2015 virtual open house with 372 comment forms submitted. One-hundred-six people submitted comment forms related to the March 2016 virtual open house.
Canvassing (February and March 2016)	Canvassers visited more than 500 homes and businesses along MovingAhead corridors, and had a face-to-face conversation with 273 people.
Community Group and standing committee presentations (May 2015 – May 2017)	LTD and City of Eugene staff presented to various community groups including the League of Women Voters, Bethel Lions Club, the LTD Accessible Transportation Committee, the City of Eugene Planning Commission, and the Airport Rotary.
LTD Board of Directors and City Council Joint Work Sessions (May 2015 and April 2016)	Eugene City Council and the LTD Board of Directors met in joint work sessions at two points prior to publication of the AA report.

[a] For workshops, open houses and online open houses, the project team collected optional demographic information. Of those who chose to report demographic information, most were Caucasian and over age 55.

4.5. Future Outreach

As the project continues to move forward additional outreach, will be conducted to inform the public on the project and continue to seek input. This is anticipated to include providing information on the results of the AA, which will be shared with both the community and decision makers through the various tools noted above.

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5. Affected Environment

5.1. Neighborhoods

Based on neighborhood association or organization boundaries, the City of Eugene has 23 recognized neighborhoods and another 3 named areas that are predominantly industrial. These are discussed by corridor and alternative below. Table 5.1-1 provides an overview of which neighborhoods would be served by each corridor. Five neighborhoods would not be served by the proposed alternatives and, therefore, are not listed in the table. Although not a recognized neighborhood, the University of Oregon is included on the table as a major destination that would be served.

Table 5.1-1. City of Eugene Neighborhoods

	Corridor				
Neighborhood	**Highway 99**	**River Road**	**30th Ave to LCC**	**Coburg**	**MLK, Jr. Blvd[a]**
Bethel	✓				
Amazon			✓		
Cal Young				✓	✓[a]
Downtown	✓	✓	✓	✓	✓[a]
Fairmount			✓		
Far West	✓	✓			
Friendly Area			✓		
Harlow				✓	✓[a]
Industrial Corridor	✓				
Jefferson Westside	✓	✓	✓	✓	✓[a]
Laurel Hill Valley			✓		
Northeast				✓	
River Road		✓			
Santa Clara		✓			
South University			✓		
Southeast			✓		
Trainsong	✓	✓			
University of Oregon Campus			✓	✓	
West Eugene	✓	✓			
West University	✓	✓	✓	✓	✓[a]
Whiteaker	✓	✓	✓	✓	✓[a]

Source: *Neighborhood Map, City of Eugene Neighborhood Associations 2015* (City of Eugene, 2017a).

MLK, Jr. Blvd = Martin Luther King, Jr. Boulevard

[a] Neighborhood only within the Enhanced Corridor Alternative.

5.1.1. Highway 99 Corridor

Figure 5.1-1 shows the relationship of the Highway 99 Corridor (both Enhanced Corridor and EmX Alternatives) and the neighborhoods.

5.1.1.1. Enhanced Corridor Alternative

The Highway 99 Corridor Enhanced Corridor Alternative would travel through or adjacent to the Downtown, Jefferson Westside, Whiteaker, West Eugene, Trainsong, and Bethel neighborhoods. In addition, the API also includes the West University, Far West, and Industrial Corridor neighborhoods.

The Downtown, Jefferson Westside, and Whiteaker neighborhoods are within the core of Eugene and, therefore, are somewhat urbanized communities of mixed uses, with areas of higher density than the rest of the city. These areas are also intermixed with office and commercial uses.

The West Eugene and Trainsong neighborhoods are predominantly industrial in nature with few community resource within the API. There is a large residential community within the Bethel neighborhood located west of Highway 99, but it is buffered from Highway 99 by commercial and industrial land uses.

5.1.1.2. EmX Alternative

While the API for the EmX Alternative is larger, it would travel through or adjacent to the same neighborhoods as the Enhanced Corridor Alternative described above. The API of the EmX Alternative would also include the River Road neighborhood. The Union Pacific Railroad yard, however, substantially divides this neighborhood from the Highway 99 Corridor EmX Alternative.

5.1.2. River Road Corridor

Figure 5.1-2 shows the relationship of the River Road Corridor and the neighborhoods.

5.1.2.1. Enhanced Corridor Alternative

The River Road Corridor Enhanced Corridor Alternative would travel through or adjacent to the Downtown, Whiteaker, Trainsong, River Road, and Santa Clara neighborhoods. The API also extends into the Jefferson Westside and West Eugene neighborhoods. This analysis does not include resources or neighborhoods east of the Willamette River that fall within the API (such as the Good Pasture Island Neighborhood) because the River serves as a barrier to accessing the alternative where the neighborhood occurs in the API.

The Enhanced Corridor Alternative passes by only a small area of the West Eugene Community and Trainsong neighborhoods, which are dominated by industrial uses and the rail yard. No known residential units are adjacent to the River Road Corridor in these neighborhoods.

The Whiteaker neighborhood is a downtown urbanized area, while the River Road and Santa Clara neighborhoods are more residential in nature. Fronting River Road are a mix of businesses (strip commercial, grocery, and small businesses) and residences. Around the Randy Papé Beltline (Highway 569) interchange with River Road, there are freeway-oriented commercial centers and North Eugene High School, which are surrounded by both high-density and low-density residential areas. Continuing north on River Road, the neighborhood becomes more residential with a few parks and churches fronting the arterial.

Figure 5.1-1. Highway 99 Corridor Enhanced Corridor and EmX Alternatives Neighborhood, Community, and Public Facilities

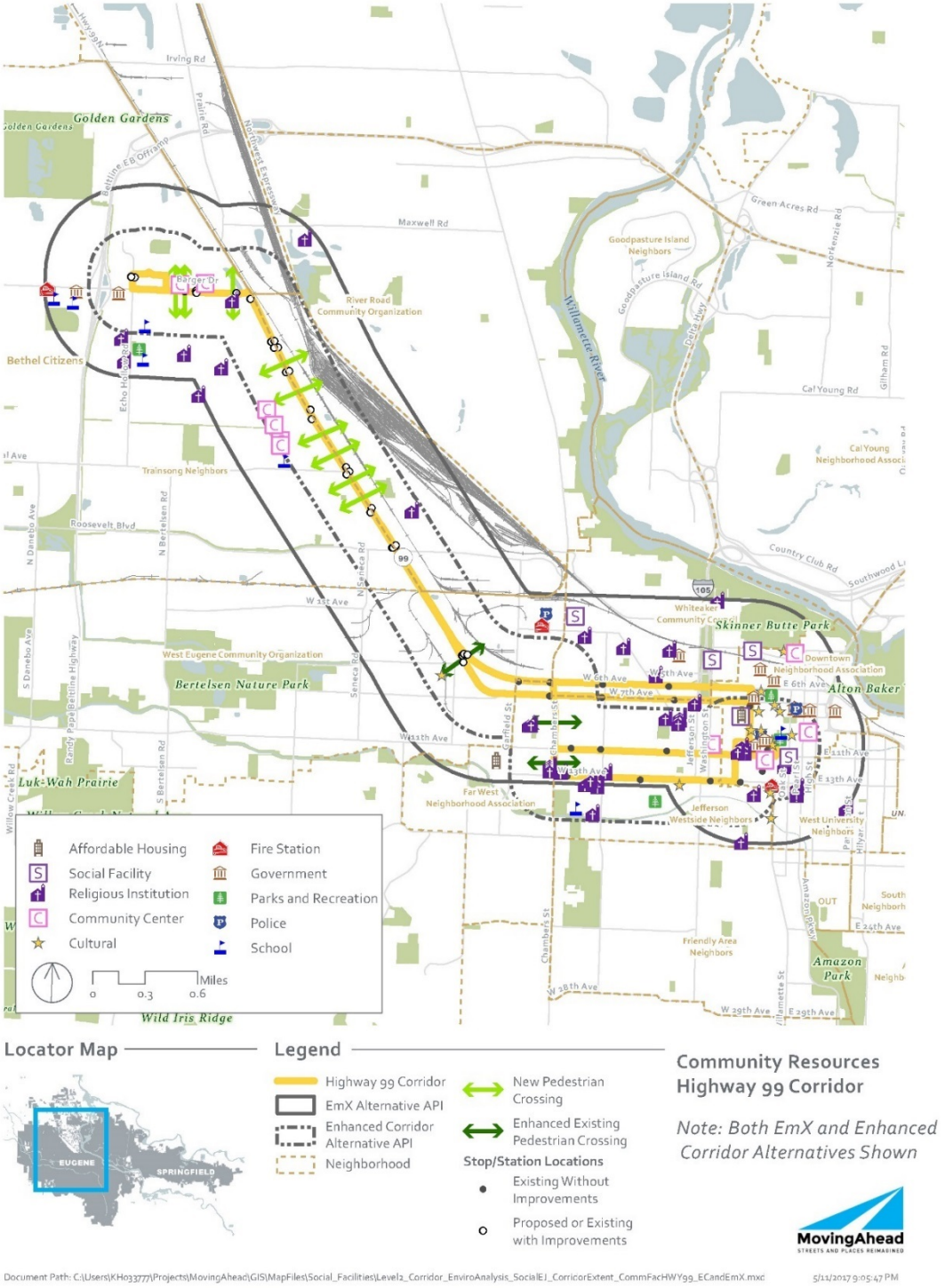
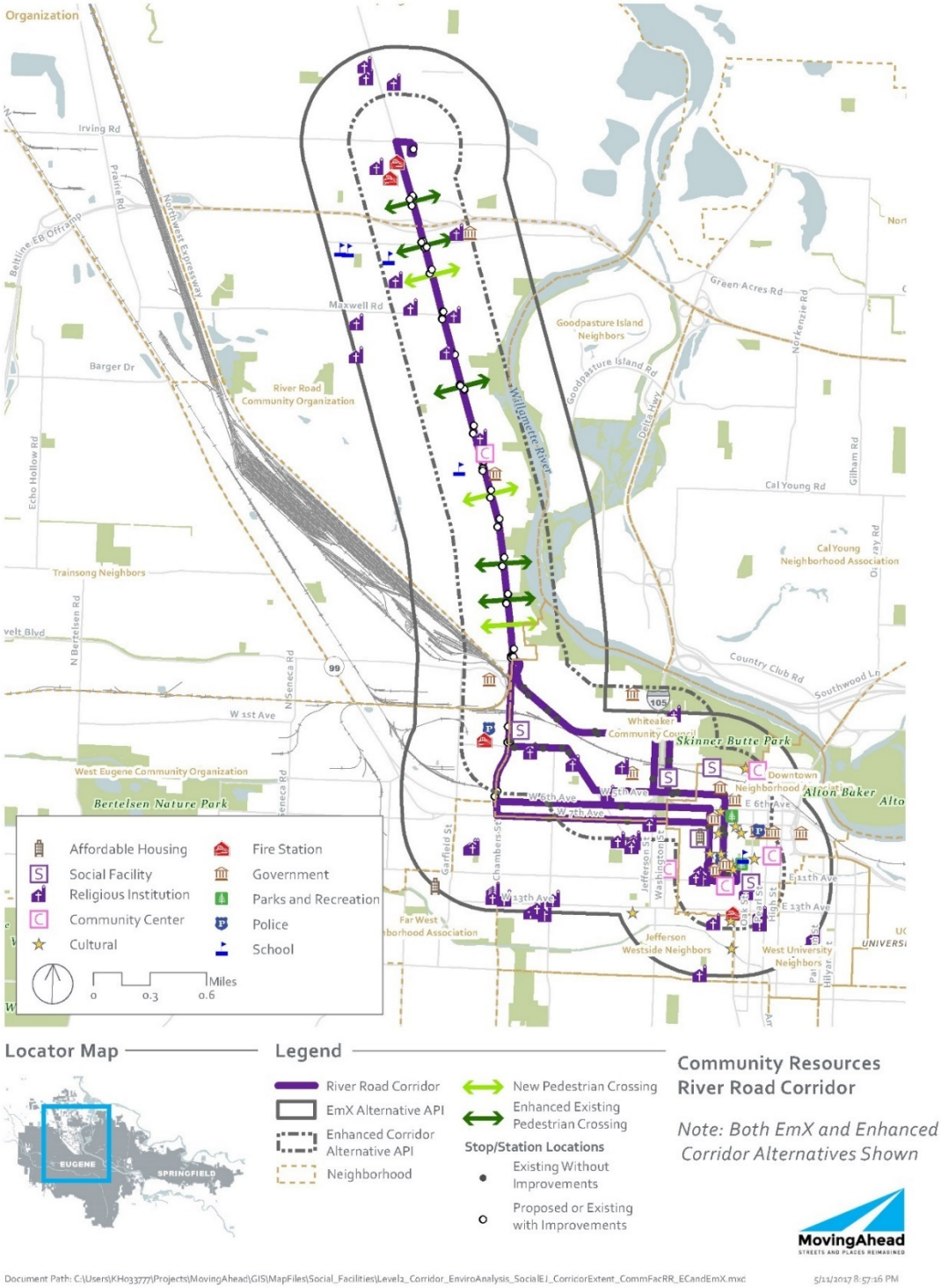


Figure 5.1-2 River Road Corridor Enhanced Corridor and EmX Alternatives Neighborhood, Community, and Public Facilities



5.1.2.2. EmX Alternative

The River Road Corridor EmX Alternative travels through or along the same neighborhoods as the Enhanced Corridor Alternative, as described above. It would also travel through the West University and Far West neighborhoods.

5.1.3. 30th Avenue to Lane Community College Corridor

Figure 5.1-3 shows the relationship of the 30th Avenue to LCC Corridor (both Enhanced Corridor and EmX Alternatives) and the neighborhoods.

5.1.3.1. Enhanced Corridor Alternative

The 30th Avenue to LCC Corridor travels through or adjacent to the Downtown, West University, Friendly Area, Amazon, Southeast, Fairmount and Laurel Hill Valley neighborhoods, before continuing into unincorporated Lane County. The Enhanced Corridor Alternative API also includes parts of the Jefferson Westside and South University neighborhoods.

The Downtown, West University, and South University neighborhoods offers a high diversity of land uses including residential, commercial, office, community services, and retail centers. South of 20th Avenue, land uses are dominated by parks, schools and residential areas. The 30th Avenue to LCC Corridor would pass by Amazon Park, a regional park resource that draws people from outside the neighborhood to visit. When the Corridor turns onto 30th Avenue, it is bordering Southeast and Fairmount Neighbors and Laurel Hill Valley Citizens. Aside from one grocery story, an elementary school and a church, the communities are residential and somewhat suburban in development style. The Laurelwood Golf Course to the north and large areas of open space dominate the landscape upon approaching the City of Eugene and Lane County border.

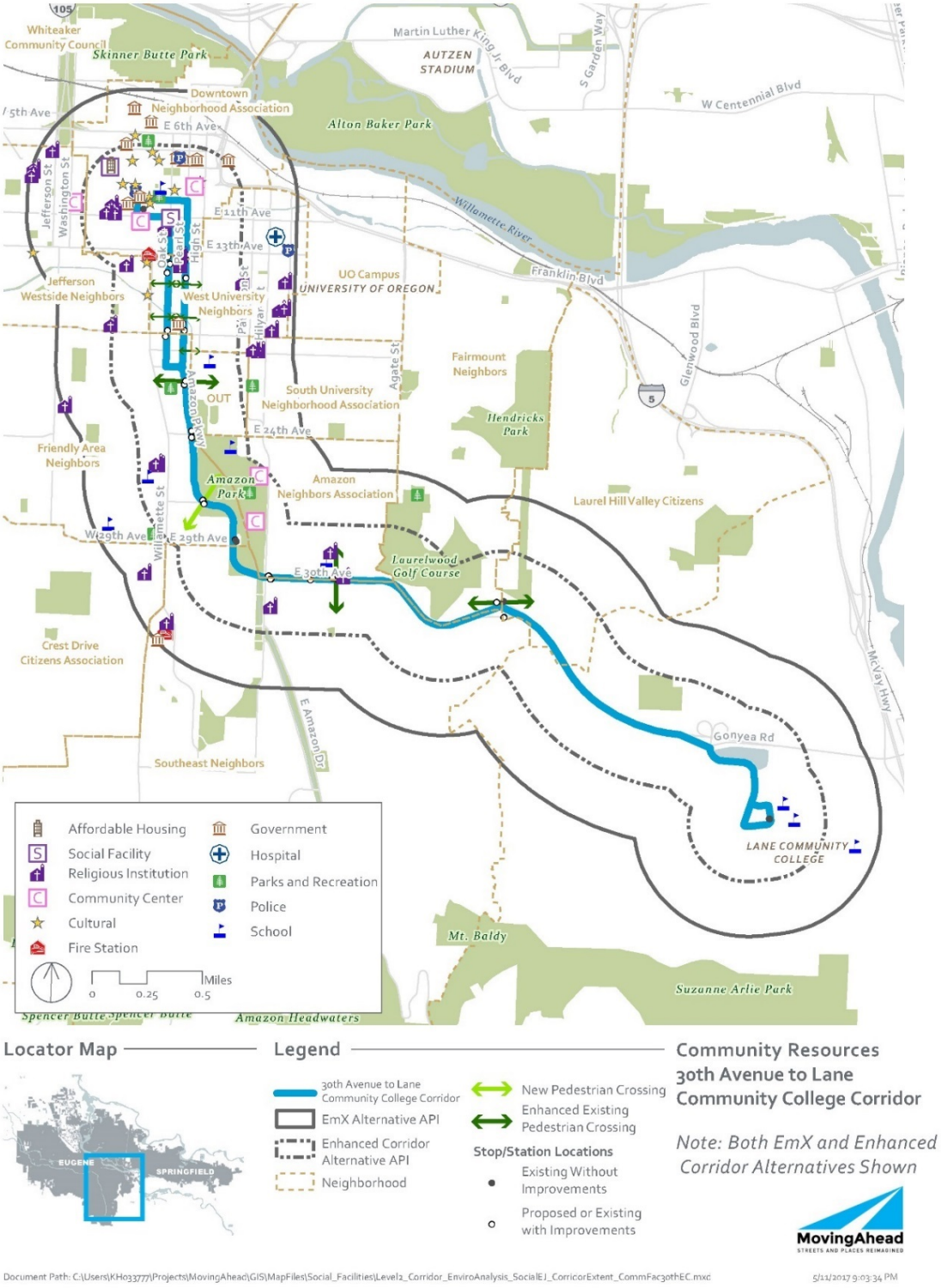
5.1.3.2. EmX Alternative

The 30th Avenue to LCC Corridor EmX Alternative travels through or along the same neighborhoods as the Enhanced Corridor Alternative, as described above. The EmX Alternative API would also include portions of the Whiteaker neighborhood and the University of Oregon Campus.

5.1.4. Coburg Road Corridor

Figure 5.1-4 shows the relationship of the Coburg Road Corridor (both Enhanced Corridor and EmX Alternatives) and the neighborhoods.

Figure 5.1-3. 30th Avenue to Lane Community College Corridor Enhanced Corridor and EmX Alternatives Neighborhood, Community, and Public Facilities



5.1.4.1. Enhanced Corridor Alternative

The Coburg Road Corridor Enhanced Corridor Alternative would travel through or adjacent to the Downtown, Cal Young, Harlow, and Northeast neighborhoods, before ending at the City of Springfield boundary where it would connect to existing transit service. The API also extends into the Jefferson Westside, Whiteaker, and West University neighborhoods, along with a small portion of the University of Oregon Campus.

The Coburg Road Corridor begins in the urbanized Downtown neighborhood but as it travels over the Willamette River, it connects with both the Skinner Butte and Alton Baker Parks, then travels north east into predominately suburban residential neighborhoods. North of the Willamette River, Coburg Road separates the Cal Young neighborhood from the Harlow neighborhood before extending through the Northeast neighborhood. Coburg Road intersects with I-105 (just after the river crossing), where the land uses closest to the freeway are dominated by commercial shopping centers. The corridor continues through mostly residential areas with a few community facilities fronting Coburg Road, such as churches and schools, until reaching the Willakenzie Road intersection where there is commercial, office, services, and multi-family residential land uses. These land use continues up to and over the Highway 569/Randy Papé Beltline interchange where the Enhanced Corridor Alternative turns east to provide service to the Veterans Affairs Medical Center along Chad Drive.

5.1.4.2. EmX Alternative

The Coburg Road Corridor EmX Alternative would travel through or adjacent to the same neighborhoods as described under the Enhanced Corridor Alternative, but the EmX Alternative API extends farther into these neighborhoods.

5.1.5. Martin Luther King, Jr. Boulevard Corridor

Figure 5.1-5 shows the relationship of the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative and the neighborhoods.

5.1.5.1. Enhanced Corridor Alternative

The Martin Luther King, Jr. Boulevard Corridor would travel through the Downtown and Harlow neighborhoods. The API also extends into the Jefferson Westside, Cal Young, Whiteaker, and West University neighborhoods. The corridor travels through commercial areas as well as traveling in front of Autzen and Emerald Stadiums, and the Lane County Juvenile Court. It then would travel through a high-density residential area and past the Oregon Medical Group Garden Way Medical Clinic.

Figure 5.1-4. Coburg Road Corridor Enhanced Corridor and EmX Alternatives Neighborhood, Community, and Public Facilities

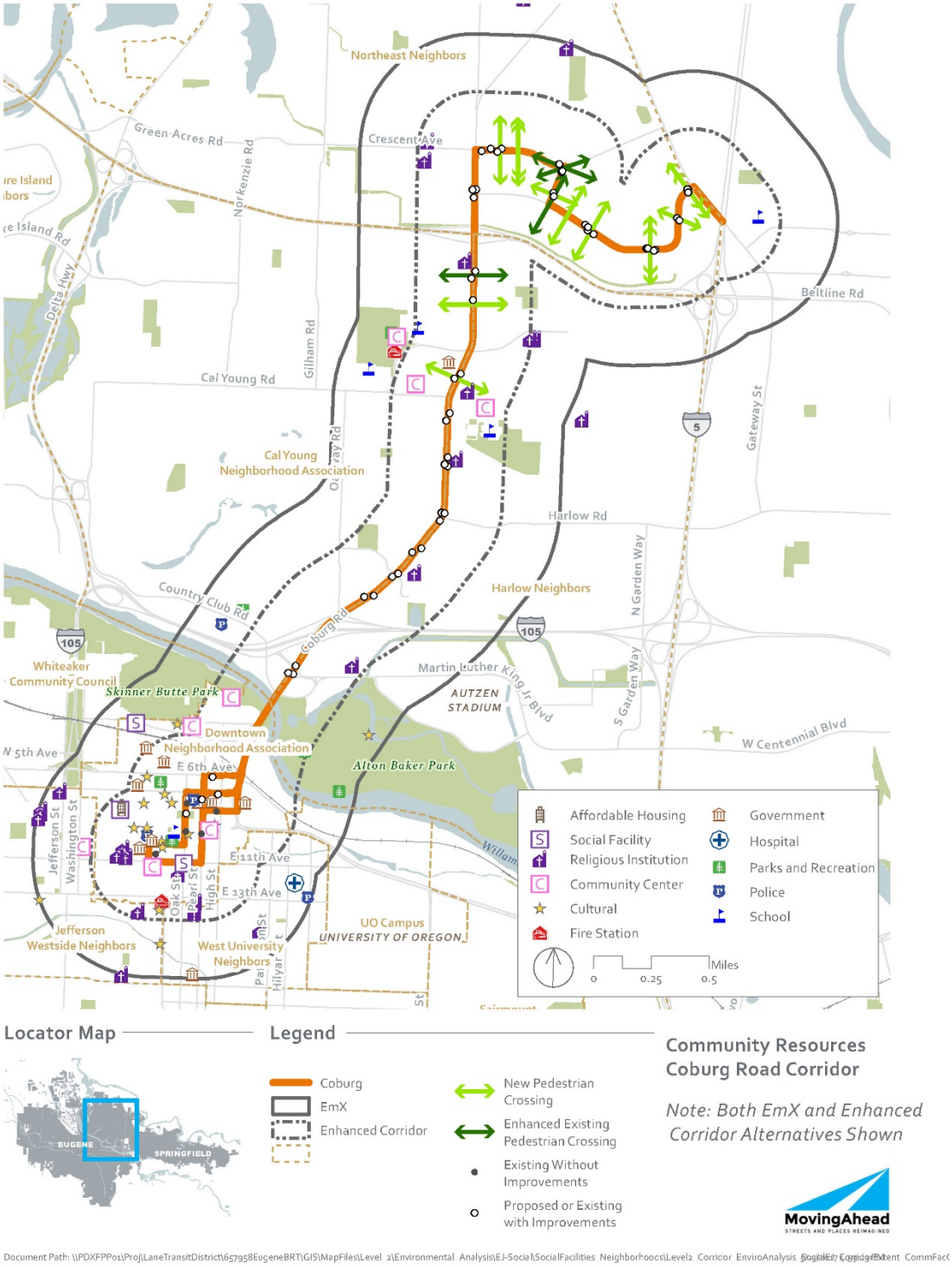
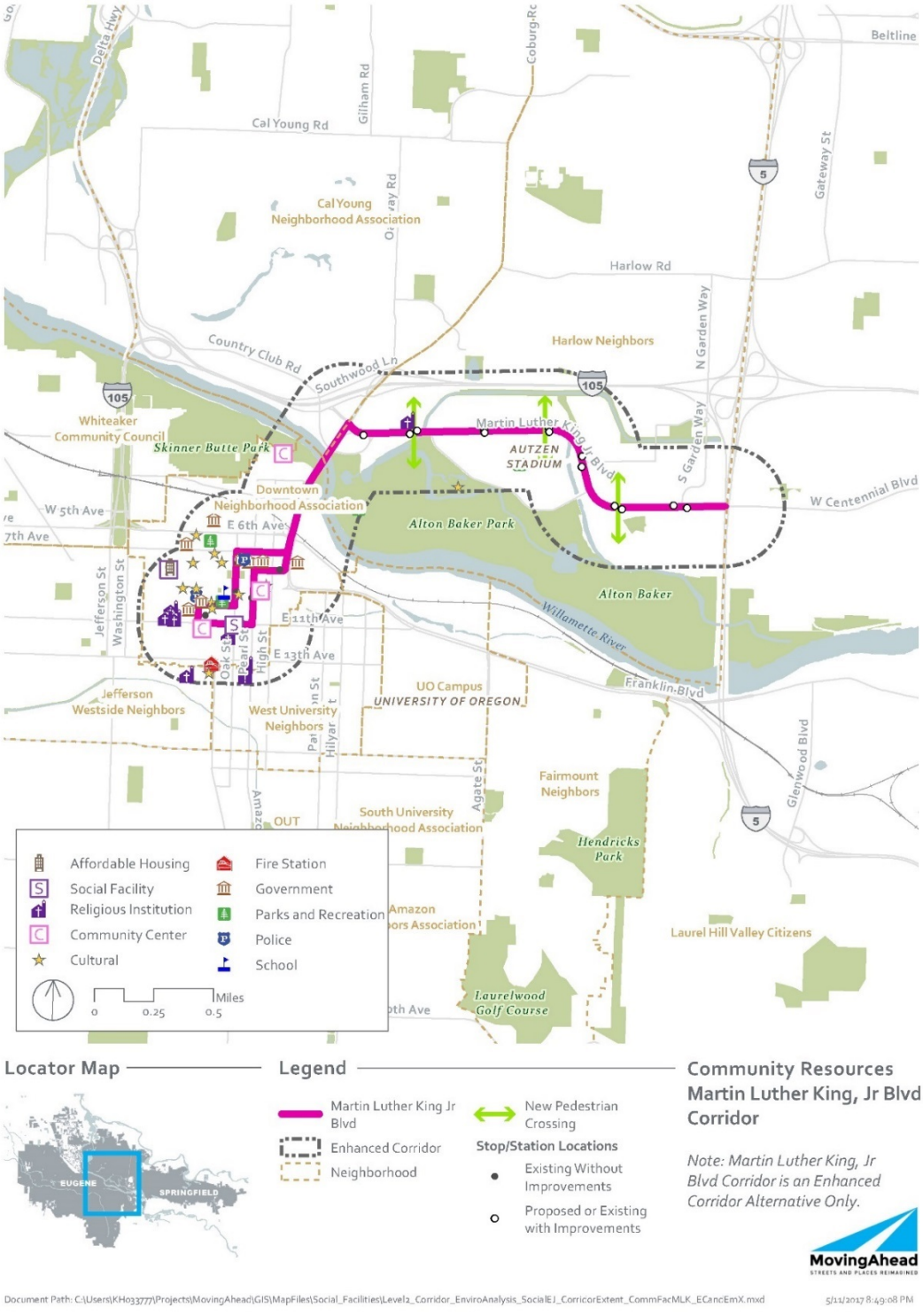


Figure 5.1-5. Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative Neighborhood, Community, and Public Facilities



5.2. Community Facilities and Public Services

5.2.1. Highway 99 Corridor

Figure 5.1-1 shows where these services and recreational resources are in proximity to the Highway 99 Corridor for both the Enhanced Corridor and EmX Alternatives.

5.2.1.1. Enhanced Corridor Alternative

The following community and public facilities are within 0.25 mile of the Enhanced Corridor Alternative:

- 26 churches
- 8 medical care and clinic facilities
- 2 police facilities
- 1 fire station
- 3 government buildings (Lane County Public Services Building, City of Eugene Permit and Information Center, and Lane County Courthouse)
- 2 libraries
- 3 school-related buildings
- 13 museum, art, and performing arts centers
- 4 shopping centers
- 10 retirement communities

Several social service organizations provide services to the minority and low-income populations within the API, including organizations that provide affordable housing and food. The Enhanced Corridor Alternative has one affordable housing facility (West Town), one food bank, and one shelter.

According to the *MovingAhead Parklands, Recreation Areas, and Section 6(f) Technical Report* (CH2M, 2017h), park impacts were only considered within 200 feet of a proposed corridor alternative. Three parks are within 200 feet of the Highway 99 Corridor (both alternatives): Washington Jefferson Park, McNail-Riley House, and Lincoln School Park.

5.2.1.2. EmX Alternative

The following community and public facilities are within 0.5 mile of the EmX Alternative:

- 40 churches
- 15 medical care and clinic facilities
- 4 police and correctional facilities
- 3 fire stations
- 4 local government buildings (Eugene City Hall, Lane County Public Services Building, City of Eugene Permit and Information Center, and Lane County Courthouse)
- 1 Federal Courthouse
- 1 post office
- 2 libraries
- 9 school-related buildings
- 18 museum, art, and performing arts centers
- 6 shopping centers
- 11 retirement communities

The EmX Alternative has two affordable housing facilities (West Town and Firwood Apartments), three shelter facilities, and one food bank (the Food for Lane County) in the API. It also contains the same recreational resources as the Enhanced Corridor Alternative: Washington Jefferson Park, McNail-Riley House, and Lincoln School Park.

5.2.2. River Road Corridor

The River Road Corridor excludes any services within the API that are located east of the Willamette River, across the river from the River Road Corridor, because the river serves as a barrier to accessing these facilities. The River Road Corridor alternatives would not influence these neighborhoods or services and, therefore, they are not included in this analysis.

Figure 5.1-2 shows where community and public facilities are in proximity to the River Road Corridor for both the Enhanced Corridor and EmX Alternatives.

5.2.2.1. Enhanced Corridor Alternative

The following community and public facilities are within 0.25 mile of the Enhanced Corridor Alternative:

- 22 churches
- 8 medical care and clinic facilities
- 4 police and correctional facilities
- 4 fire stations
- 4 local government buildings (Eugene Public Works Shop, Lane County Courthouse, Lane County Public Services Building, and City of Eugene Permit and Information Center)
- 1 post office
- 2 libraries
- 5 school-related buildings
- 13 museum, art, and performing arts centers
- 4 shopping centers
- 3 retirement communities
- 1 community center

Several social service organizations provide services to the minority and low-income populations within the API, including organizations that provide affordable housing and food. There is one affordable housing facility (West Town), three shelter facilities, and one food bank (the Food for Lane County) in the API of the Enhanced Corridor Alternative.

According to the *MovingAhead Parklands, Recreation Areas, and Section 6(f) Technical Report* (CH2M, 2017h), park impacts were only considered within 200 feet of the proposed alternative. Five parks are within 200 feet of the River Road Corridor (both alternatives): Washington Jefferson Park, Scobert Gardens, West Bank Park, Rasor Park, and the River Road Park Annex.

5.2.2.2. EmX Alternative

The following community and public facilities are within 0.5 mile of the EmX Alternative:

- 44 churches
- 16 medical care and clinic facilities
- 4 police and correctional facilities
- 4 fire stations

- 5 local government buildings (Eugene City Hall, Eugene Public Works Shop, Lane County Courthouse, Lane County Public Services Building, and City of Eugene Permit and Information Center)
- 2 post offices
- 1 Federal Courthouse
- 2 libraries
- 7 school-related buildings
- 17 museum, art, and performing arts centers
- 6 shopping centers
- 5 retirement communities
- 1 community center

The EmX Alternative covers the same social service organizations and recreational resources as the Enhanced Corridor Alternative, except the larger API includes one more affordable housing establishment (Firwood Apartments).

5.2.3. 30th Avenue to Lane Community College Corridor

Figure 5.1-3 shows where the listed social services and recreational resources are in proximity to both of the 30th Avenue to LCC Corridor alternatives.

5.2.3.1. Enhanced Corridor Alternative

The following community and public facilities are within 0.25 mile of the Enhanced Corridor Alternative:

- 14 churches
- 4 medical care and clinic facilities
- 2 police and correctional facilities
- 1 fire station
- 4 local government buildings (Eugene City Hall, Lane County Courthouse, Lane County Public Services Building, and City of Eugene Permit and Information Center)
- 1 post office
- 1 library
- 7 school-related buildings
- 14 art and performing arts centers
- 1 shopping center
- 2 retirement communities
- 2 community centers

A number of social service organizations provide services to the minority and low-income populations within the API, including organizations that provide affordable housing and food. There are two shelter facilities, one affordable housing facility (West Town), and one food bank (Food for Lane County) within the API of the Enhanced Corridor Alternative.

In addition, the Greyhound Eugene Terminal lies within 200 feet of the 30th Avenue to Lane Community College Corridor Enhanced Corridor Alternative.

According to the *MovingAhead Parklands, Recreation Areas, and Section 6(f) Technical Report* (CH2M, 2017h), park impacts were only considered within 200 feet of the proposed alternative. Three parks are within 200 feet of the 30th Avenue to LCC Corridor (both alternatives): the Proposed Civic Stadium Park (privately owned facility), Amazon Park, and Laurelwood Golf Course.

5.2.3.2. EmX Alternative

The following community and public facilities are within 0.5 mile of the EmX Alternative:

- 29 churches
- 18 medical care and clinic facilities, including one hospital (Sacred Heart Medical Center)
- 4 police and correctional facilities
- 2 fire stations
- 4 local government buildings (Eugene City Hall, Lane County Courthouse, Lane County Public Services Building, and City of Eugene Permit and Information Center)
- 1 Federal Courthouse
- 3 post offices
- 1 library
- 9 school-related buildings
- 16 museum, art and performing arts centers
- 3 shopping centers
- 3 retirement communities
- 2 community centers

No additional social service organizations provide services to the minority and low-income populations within the EmX Alternative API compared to the Enhanced Corridor Alternative API.

In addition, the Greyhound Eugene Terminal lies within 200 feet of the 30th Avenue to Lane Community College Corridor EmX Alternative.

5.2.4. Coburg Road Corridor

Figure 5.1-4 shows where these services and resources are in proximity to the Coburg Road Corridor for both the Enhanced Corridor and EmX Alternatives.

5.2.4.1. Enhanced Corridor Alternative

The following community and public facilities are within 0.25 mile of the Enhanced Corridor Alternative:

- 17 churches
- 9 medical care and clinic facilities
- 2 police facilities
- 1 fire station
- 4 local government buildings (Eugene City Hall, Lane County Courthouse, Lane County Public Services Building, and City of Eugene Permit and Information Center)
- 1 Federal Courthouse
- 2 libraries
- 1 post office
- 4 school-related buildings College
- 12 art and performing arts centers
- 4 shopping centers
- 5 retirement communities
- 1 community center

In addition, the Greyhound Eugene Terminal lies within 200 feet of the Coburg Road Corridor Enhanced Corridor Alternative.

A number of social service organizations provide services to the minority and low-income populations are within the API, including organizations that provide affordable housing and food. There is an affordable housing facility (West Town), two shelter facilities, and one food bank (Food for Lane County) in the Enhanced Corridor Alternative API.

According to the *MovingAhead Parklands, Recreation Areas, and Section 6(f) Technical Report,* (CH2M, 2017h), park impacts were only considered within 200 feet of the proposed alternative. Three parks are within 200 feet of the Coburg Road Corridor (both alternatives): Park Blocks, Skinner Butte Park, and Alton Baker Park.

5.2.4.2. EmX Alternative

The following community and public facilities are within 0.5 mile of the EmX Alternative:

- 27 churches
- 20 medical care and clinic facilities, including one hospital (Sacred Heart Medical Center)
- 5 police and correctional facilities
- 2 fire stations
- 4 local government buildings (Eugene City Hall, Lane County Courthouse, Lane County Public Services Building, and City of Eugene Permit and Information Center)
- 1 Federal Courthouse
- 2 libraries
- 2 post offices
- 5 school-related buildings
- 18 museum, art, and performing arts centers
- 5 shopping centers
- 6 retirement communities
- 2 community centers

The EmX Alternative has the same social services and recreational resources in the API as the Enhanced Corridor Alternative. In addition, the Greyhound Eugene Terminal lies within 200 feet of the Coburg Road Corridor EmX Alternative.

5.2.5. Martin Luther King, Jr. Boulevard Corridor

5.2.5.1. Enhanced Corridor Alternative

The following community and public facilities are within 0.25 mile of the Enhanced Corridor Alternative:

- 10 churches
- 4 medical care and clinic facilities
- 2 police and correctional facilities
- 1 fire station
- 4 local government buildings (Eugene City Hall, Lane County Courthouse, Lane County Public Services Building, and City of Eugene Permit and Information Center)
- 1 Federal Courthouse
- 1 library
- 1 post office
- 1 school-related building
- 13 museum, art, and performing arts centers

- 1 shopping center
- 2 retirement communities
- 1 community center

A number of social service organizations provide services to the minority and low-income populations within the API, including organizations that provide affordable housing and food. There is one affordable housing facility (West Town), two shelter facilities, and one food bank (Food for Lane County) within the API.

In addition, the Greyhound Eugene Terminal lies within 200 feet of the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative.

According to the *MovingAhead Parklands, Recreation Areas, and Section 6(f) Technical Report* (CH2M, 2017h), park impacts were only considered within 200 feet of the proposed Enhanced Corridor Alternative. Three parks are within 200 feet of the Martin Luther King, Jr. Boulevard Corridor: Park Blocks, Skinner Butte Park, and Alton Baker Park. Figure 5.1-5 shows where the social services and recreational resources are in proximity to the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative.

5.3. Demographic Characteristics

Eugene is the largest city in Lane County and accounts for about half of the county's population. As shown in Table 5.3-1, the City of Eugene is projected to grow at a faster rate than Lane County as a whole.

Table 5.3-1. Existing and Projected Populations

Area	2000	2010	2015	2035	Population Change, 2015–2035 (percent)	Average Annual Growth Rate, 2015–2035 (percent)
Eugene	160,894	177,332	184,192	224,712	22.0	1.1
Springfield	62,167	67,683	68,839	83,604	21.4	1.07
Lane County	322,959	351,715	361,540	428,816	18.6	0.93
Oregon	3,431,100	3,837,300	4,001,600	4,995,200	19.9	1.0

Source: Portland State University Population Research Center. (2015).

The following section provides information on the demographic characteristics for alternatives, as well as the larger regional populations for the City of Eugene and Lane County. In addition to U.S. Census Bureau data, the demographic characteristics include data from the *Lane County Equity and Opportunity Assessment (EOA)* (Lane Livability Consortium, 2014). The analysis used 2010 Census data at the census tract level. The EOA includes the cities of Eugene and Springfield, and unincorporated areas adjacent to the cities that together compose the Central Lane MPO.

Table 5.3-2 lists those populations that are most likely to be more transit dependent than other demographic groups. These are persons under 18, over 65 and persons with disabilities. Persons with disabilities may be also included in the under 18 and over 65 groups. In addition, this does not assume all persons are transit dependent, merely a higher likelihood as compared with others. As shown in Table 5.3-2, for all corridors except Coburg Road and Martin Luther King, Jr. Boulevard, a higher

percentage of the population under 18 is within the EmX Alternative API than within the Enhanced Corridor Alternative API because the EmX Alternative API is larger and captures more residential areas where families live. The converse is slightly true for the percentage of the population that is over 65 years of age, with the Enhanced Corridor Alternative, except the Highway 99 and Martin Luther King, Jr. Boulevard corridors.

Table 5.3-2. Demographic Characteristics (2015 Estimates)

Area	Total Population	Population Under 18 (percent)	Population Over 65 (percent)	Persons with Disabilities (percent)[b]
Corridors				
Highway 99 (Enhanced Corridor)	34,027	5.8	9.0	20.9
Highway 99 (EmX)	50,323	20.6	9.4	19.1
River Road (Enhanced Corridor)	34,986	5.3	7.7	18.8
River Road (EmX)	43,925	11.4	6.1	16.5
30th Avenue to LCC (Enhanced Corridor)	30,231	6.0	12.5	9.2
30th Avenue to LCC (EmX)	45,271	27.6	11.3	10.0
Coburg Road (Enhanced Corridor)	40,929	20.6	10.9	13.0
Coburg Road (EmX)	50,189	17.6	9.4	14.0
Martin Luther King, Jr. Boulevard (Enhanced Corridor)	26,459	2.4	24.6	11.4
City of Eugene	158,131	18.0	13.6	13.1
Lane County	354,764	19.4	16.2	15.6
Central Lane MPO	251,721	20.0	15.0[a]	14.7[c]

Sources: U.S. Census Bureau. (2015 and 2012). Lane Livability Consortium. (2014).

[a] Percentage represents population 65 and over.

[b] Percentage of persons with disabilities may include persons under 18 and over 65.

[c] Disability status information has not been published for the Springfield-Eugene Metropolitan Statistical Area since 2012.

As shown in Table 5.3-3, the percentage of those who rent within the APIs for the corridors is greater than in Eugene and Lane County. The high number of renters is likely due to the student population at the University of Oregon. The average household size for all corridors is lower than that in the City of Eugene and Lane County.

Households with no vehicle can often be considered transit dependent. In addition, persons under 18 year of age also tend to be dependent on modes other than personal vehicles. Persons under 18 are reported in Table 5.3-2 and not combined here. The percentage of households with no vehicle is greater within the Corridors' APIs than in the larger regions.

Table 5.3-3. Household Characteristics (2015 Estimates)

Area	Owner/Renter Occupied Housing (percent)	Average Household Size	Households with No Vehicle (percent)
Corridors			
Highway 99 (Enhanced Corridor)	34.5/65.5	1.9	20.5
Highway 99 (EmX)	33.4/66.7	1.9	18.9
River Road (Enhanced Corridor)	34.9/65.1	1.8	20.5
River Road (EmX)	32.7/67.3	1.8	19.6
30th Avenue to LCC (Enhanced Corridor)	32.5/67.5	1.8	17.5
30th Avenue to LCC (EmX)	31.6/68.4	1.7	18.8
Coburg Road (Enhanced Corridor)	35.8/64.2	1.8	17.1
Coburg Road (EmX)	33.6/66.4	1.7	17.9
Martin Luther King, Jr. Blvd (Enhanced Corridor)	25.2/74.8	1.6	20.8
City of Eugene	48.9/51.1	2.3	11.4
Lane County	59.3/40.7	2.4	8.4
Central Lane MPO	55.0/45.0	2.4	10.0

Sources: U.S. Census Bureau. (2015). Lane Livability Consortium. (2014).

As shown in Table 5.3-4, the minority populations of each corridor are similar to those of the City of Eugene, but higher than those of Lane County. The Highway 99 Corridor has the highest minority concentration and the Coburg Road Corridor the lowest. The highest minority concentrations are Hispanic/Latino,[1] with the highest concentrations in the Highway 99 Corridor, and Asian with the highest concentrations in the 30th Avenue to LCC, Coburg Road, and Martin Luther King, Jr. Boulevard corridors. Figures 5.3-1 and 5.3-2 illustrate the census block groups where minority and low-income populations are more highly concentrated. Note that some census blocks may have a relatively low overall population (e.g., within industrial zones) and may have small numbers of persons that qualify as low-income or minority, which can result in high percentages of minority or low-income populations.

[1] Hispanic / Latino is an ethnicity, not a race.

Table 5.3-4. Minority Populations and Limited English Proficiency (2015 Estimates)

Area	Non-Minority Population (percent)	Minority Population (percent)				LEP (percent)
	White Alone	Hispanic or Latino[a]	African American	Asian	Others[b]	
Corridors						
Highway 99 (Enhanced Corridor)	76.8	13.8	1.3	2.7	5.4	2.9
Highway 99 (EmX)	78.2	12.0	1.3	3.2	5.4	2.6
River Road (Enhanced Corridor)	79.5	9.9	1.5	2.8	6.4	3.3
River Road (EmX)	80.3	9.0	1.3	3.4	6.0	2.7
30th Avenue to LCC (Enhanced Corridor)	80.8	6.3	1.9	6.3	4.7	1.7
30th Avenue to LCC (EmX)	79.9	6.6	1.6	7.0	4.8	1.7
Coburg Road (Enhanced Corridor)	81.8	4.5	0.9	6.1	6.7	1.5
Coburg Road (EmX)	81.2	5.3	1.0	5.9	6.6	1.5
Martin Luther King, Jr. Boulevard (Enhanced Corridor)	79.0	6.0	1.5	8.0	5.6	1.8
Eugene	77.5	10.6	1.7	3.6	6.7	3.9
Lane County	82.6	8.5	1.2	2.3	3.8	3.0

Source: U.S. Census Bureau. (2015).

[a] Hispanic/Latino is defined as a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

[b] Others = a combination of American Indian or Alaskan Native, Hawaiian or Pacific Islander, some other race, and two or more races

LEP populations (those who do not speak English well or at all) are also presented in Table 5.3-4, because LEP might indicate the potential for minority populations. The study area has a lower percentage of the population with LEP than the City and Lane County as a whole. The primary language spoken at home other than English in the APIs is Spanish.

Figure 5.3-1. Enhanced Corridor Alternatives Minority Population by Block Group – All Corridors

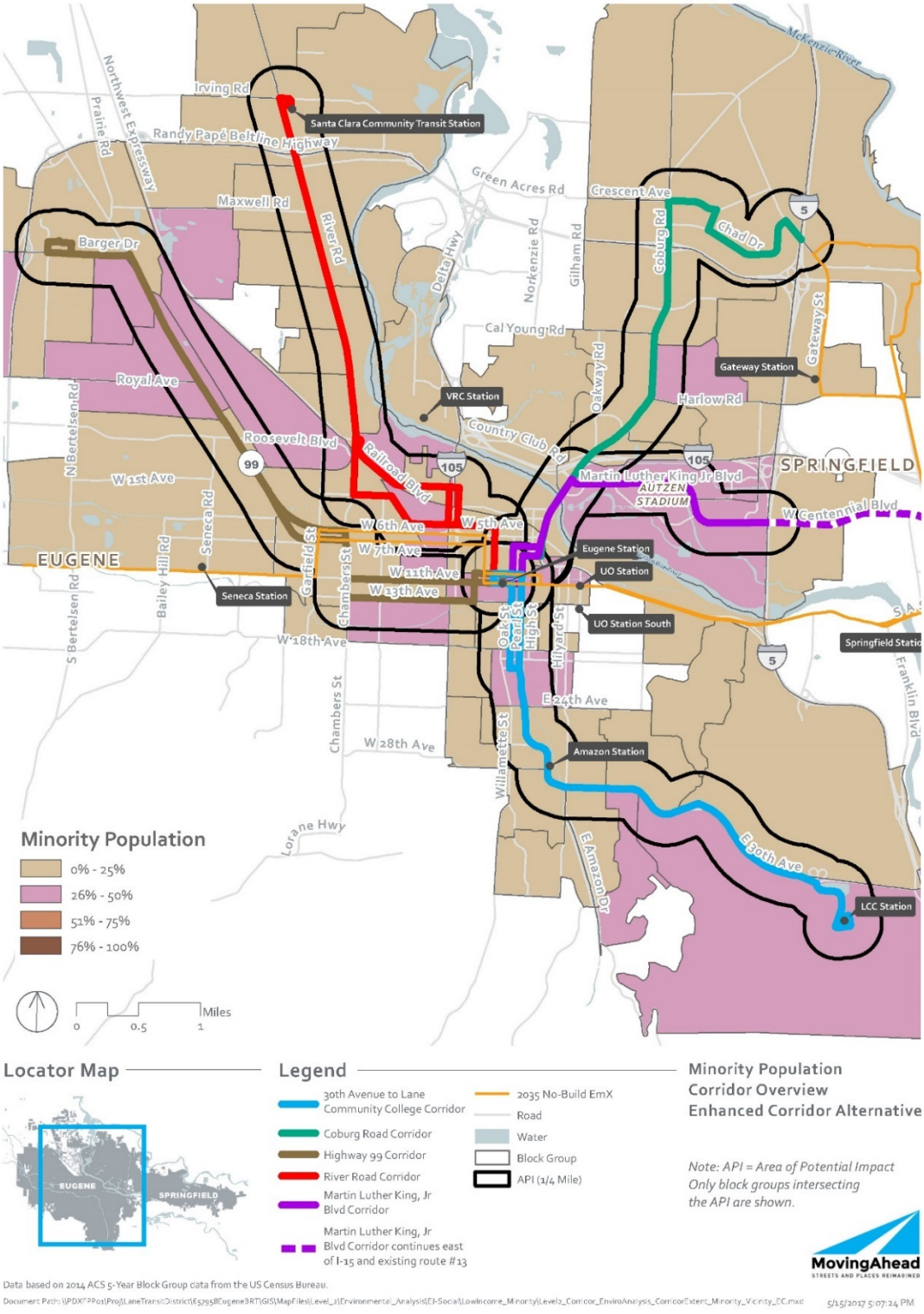


Figure 5.3-2. EmX Alternatives Minority Population by Block Group – All Corridors (except Martin Luther King, Jr. Boulevard Corridor)

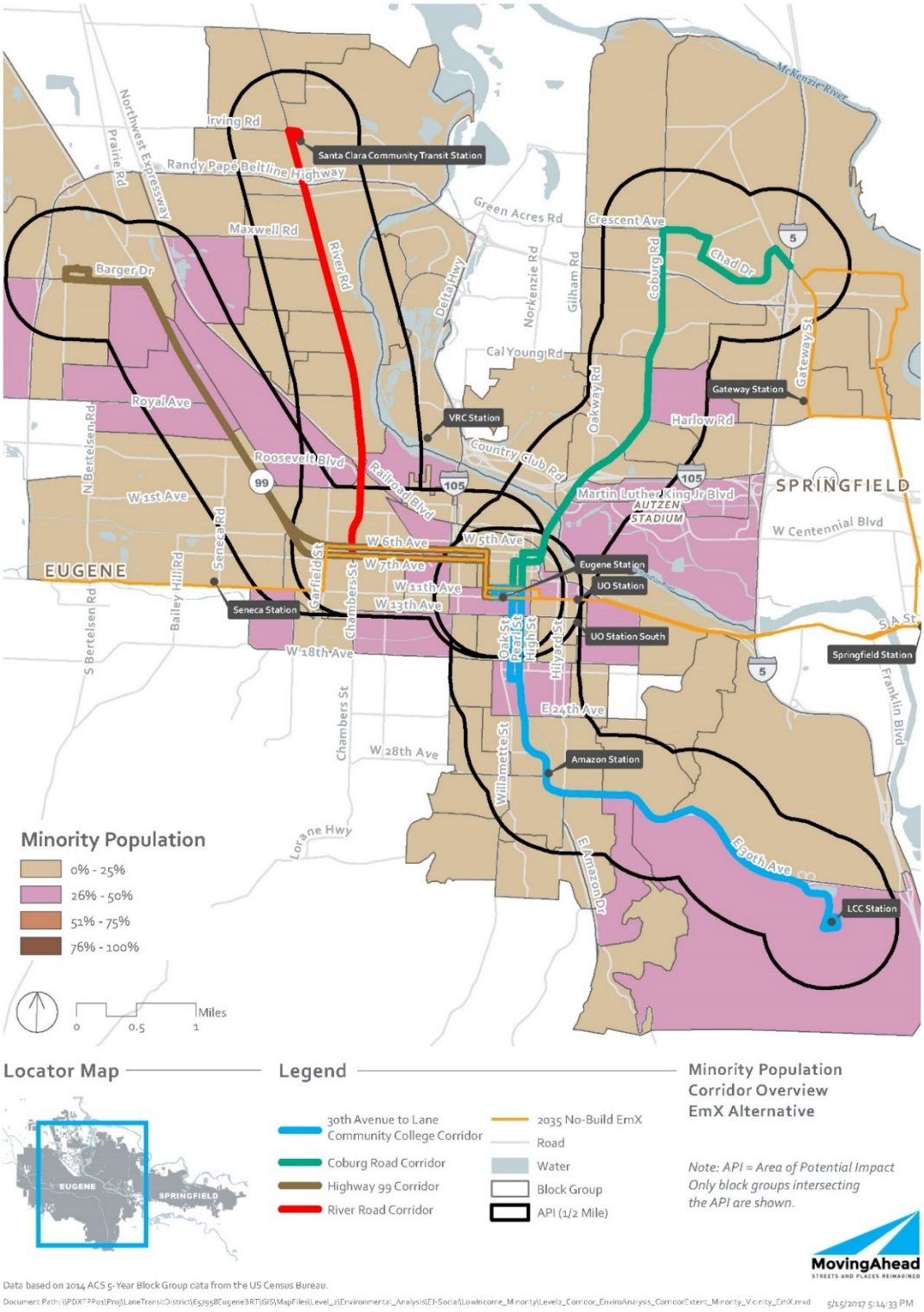


Table 5.3-5 provides information on income. All corridor APIs have low-income population concentrations that are greater than those for Eugene, Lane County, and the Central Lane MPO (Figures 5.3-3 and 5.3-4). The median household income is also lower.

The EOA analysis includes a calculation of the poverty rate (2009-2011), excluding college students. The calculation shows that, by removing the college students, the poverty rate decreases from 23.5 percent to 16.6 percent in the City of Eugene.

Table 5.3-5. Income Characteristics (2015 Estimates)

Area	Low-Income Population (percent)	Median Household Income ($)
Corridors		
Highway 99 (Enhanced Corridor)	34.6	$29,952
Highway 99 (EmX)	35.9	$29,827
River Road (Enhanced Corridor)	30.7	$33,911
River Road (EmX)	35.2	$31,153
30th Avenue to LCC (Enhanced Corridor)	39.9	$38,068
30th Avenue to LCC (EmX)	40.4	$35,659
Coburg Road (Enhanced Corridor)	31.5	$39,159
Coburg Road (EmX)	33.3	$35,860
Martin Luther King, Jr. Boulevard (Enhanced Corridor)	41.8	$28,540
City of Eugene	24.4	$42,715
Lane County	20.4	$43,685
Central Lane MPO	23.0	$40,400[a]

Sources: U.S. Census Bureau. (2015); Lane Livability Consortium. (2014).

[a] Median income was calculated by taking the average of the EOA median income levels for Lane County ($42,621), Eugene ($41,326), and Springfield ($37,255).

Figure 5.3-3. Enhanced Corridor Alternatives Low-Income Population by Block Group – All Corridors

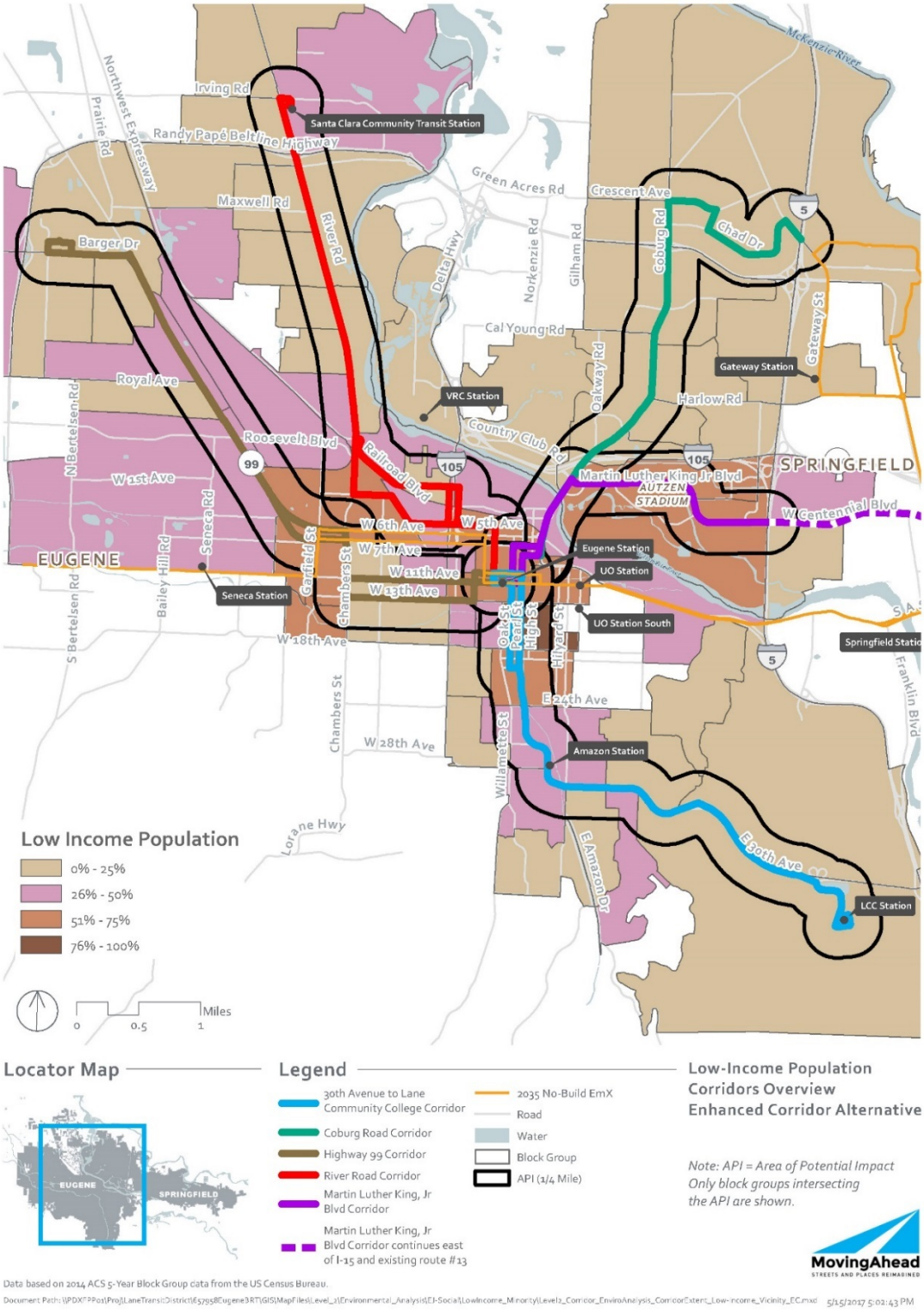
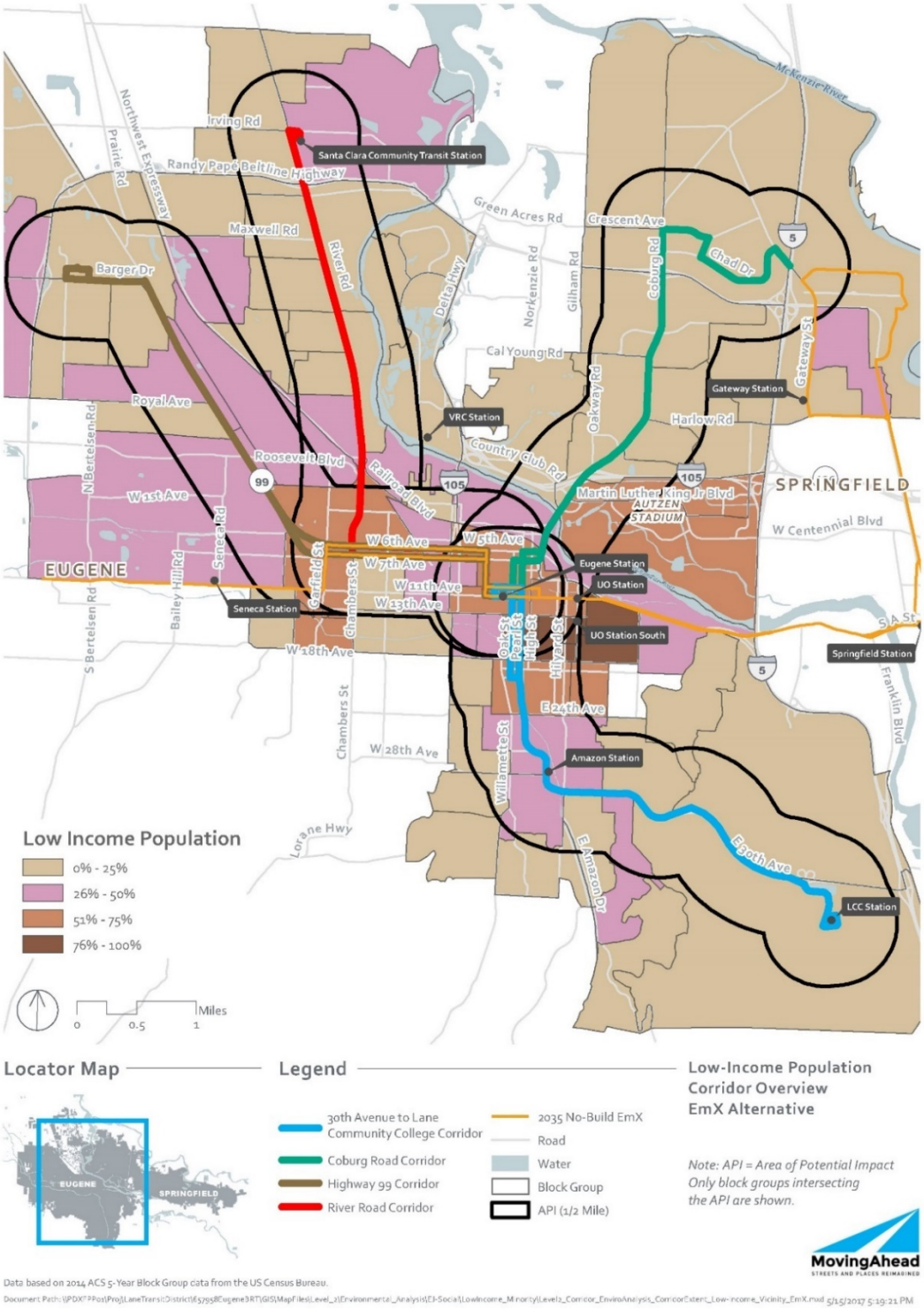


Figure 5.3-4. EmX Alternatives Low-Income Population by Block Group – All Corridors (except Martin Luther King, Jr. Boulevard Corridor)



5.4. Economics

The following section provides information on the economic characteristics for the larger regional geographies of the City of Eugene and Lane County.

5.4.1. Employment Centers

The study area includes major employment centers, tourist attractions, retail businesses, and colleges, which generate trips to and from the area. As shown in Table 5.4-1, government services, including public schools, the University of Oregon, and medical industries, are the top employers. The majority of top employers are within 0.5 mile of the project corridors.

Table 5.4-1. Eugene's Top Employers

Rank	Employer	Number of Employees	Corridors where this Employer is Located
1	Peacehealth Medical Group	5,500	All corridors[a]
2	The University of Oregon	5,406	Coburg Road, Martin Luther King, Jr. Boulevard
3	United States Government	1,575	30th Avenue to LCC, Coburg Road, Martin Luther King, Jr. Boulevard
4	City of Eugene	1,369	All corridors[a]
5	Springfield School District	1,283	None – outside of corridors
6	Lane County	1,279	All corridors[b]
7	State of Oregon	1,229	30th Avenue to LCC, Coburg Road, Martin Luther King, Jr. Boulevard
8	Eugene School District 4J	1,163	Schools are located along River Road, 30th Avenue to LCC, Coburg
9	Lane Community College	1,009	30th Avenue to LCC
10	McKenzie-Willamette Medical Center	895	None
	Total	**20,708**	

Source: *City of Eugene 2015 Comprehensive Annual Financial Report*. (City of Eugene, 2015).

[a] Main Office is within 1 block of Eugene Station where most of the corridors' alternatives would interface.

[b] Multiple Lane County facilities occur on all corridors. See Section 5.2 for specific facilities by alternative.

As shown in Table 5.4-2, industries with the largest share of total employees within Lane County are trade, transportation, and utilities; government (federal, state, and local); and education and health services. Total employment in Lane County is projected to increase by about 10 percent in the 10-year period from 2014 to 2024, with the greatest increase (about 16 percent) showing in education and health services.

Table 5.4-2. Lane County – Employment by Industry

Industry	2014	Projected 2024
Mining and Logging	2,300	2,600
Construction	5,600	6,500
Manufacturing	13,000	14,700
Trade, Transportation, and Utilities	28,400	30,900
Information	3,400	3,500
Financial Activities	7,200	7,900
Professional and Business Services	15,700	18,200
Education and Health Service	23,100	27,400
Leisure and Hospitality	15,500	17,600
Other Services	5,500	6,100
Government (federal, state, and local)	28,900	30,000
Self-employment	8,000	8,900
Total	**156,600**	**174,300**

Source: Oregon Employment Department. (2016).

Table 5.4.3 provides information on the labor force characteristics for the Eugene Metropolitan Statistical Area. Unemployment peaked in 2010 and has been declining since then. As of 2015, unemployment is close to the 2000 unemployment rate.

Table 5.4-3. Labor Force Characteristics

Labor	2000	2010	2015
Eugene – Metropolitan Statistical Area			
Civilian Labor Force	170,474	178,303	171,388
Employed	161,349	158,655	161,194
Unemployed	9,125	19,648	10,194
Unemployment Rate (percent)	5.4	11.0	5.9

Source: U.S. Department of Labor Bureau Labor Statistics. (2016).

5.4.2. Unemployment

As shown in Table 5.4-4, using data from the *American Community Survey 2010-2014 5-Year Estimates* (U.S. Census Bureau, 2015), all the corridors have unemployment rates that are higher than those of Eugene, Lane County, and the state of Oregon.

Table 5.4-4. Unemployment

Area	Population 16 Years and Over in Labor Force	Unemployment (percent)
Corridors		
Highway 99 (Enhanced Corridor)	17,617	13.2
Highway 99 (EmX)	25,967	13.5
River Road (Enhanced Corridor)	18,108	13.1
River Road (EmX)	22,525	12.8
30th Avenue to LCC (Enhanced Corridor)	16,119	8.9
30th Avenue to LCC (EmX)	22,713	9.7
Coburg Road (Enhanced Corridor)	19,558	11.1
Coburg Road (EmX)	24,092	9.7
Martin Luther King, Jr. Boulevard (Enhanced Corridor)	12,867	9.5
City of Eugene	80,413	6.0
Lane County	175,784	6.6
Oregon	1,961,375	6.6

Sources: U.S. Census Bureau. (2015). Lane Livability Consortium. (2014).

5.4.3. City of Eugene Tax Base

The primary funding source for City and Lane County functions is property taxes (60 percent of budget revenue for both). The tax rate per $1,000 of property value is made up of $1.94 for Lane County taxes and $8.13 for City taxes. School district taxes vary between $5.56 and $8.93, while other miscellaneous levies vary between $0 and $5.83. Therefore, property owners pay annual property taxes of between $10.06 and $24.83 per $1,000 of their home value. Owners of a home assessed at $100,000 would owe between $1,060 and $2,483 per year. Another nearly 20 percent of the City's revenue budget comes from Beginning Working Capital, which is the re-appropriation of funds from the prior fiscal year for contracts, program initiatives, or projects that were started but not completed in that fiscal year (City of Eugene, 2016, June 27). The other approximately 20 percent of City revenue comes from licenses, permits, intergovernmental funds, rental of City facilities, charges for services, fines, and interfund transfers.

Another revenue source is parking meters. As noted above, the revenues from parking meters are within the "charges for services" revenue item and do not result in substantial revenue for the City (compared with property taxes). For example, capital costs to supply the meters and labor costs to track the meters reduce the overall revenues received. Parking meters are primarily a method of managing parking accessibility within the business district areas to allow access for more patrons. Parking meters are rare in residential areas, where parking management is typically conducted through parking permits or not managed at all. City parking meters operate from 7:00 a.m. to 6:00 p.m., Monday through Saturday and are free after 6:00 p.m. and on Sundays (including holidays). The rates are $1.20 per hour (City of Eugene, 2017c). Estimates of revenues from parking meters assumes that approximately 2 weeks of the year are holidays; therefore, there are approximately 50 weeks per year of six days per week where meters are collecting funds for eleven hours a day – if they are 100 percent utilized – equals maximum

3,300 hours can be charged at $1.20 per hour per meter. Parking surveys were conducted in Corridor APIs to determine utilization rate.

Oregon does not collect sales tax, so the only other funding source is the state income tax, which varies between 7 percent and 9.9 percent (depending on the household's income). A small portion of the income tax revenue is distributed to cities as intergovernmental funds, including the City of Eugene.

The planned overall City of Eugene budget for July 1, 2016, through June 30, 2017, is $337.9 million. Within this budget, 9.7 percent supports culture and recreation services, 26.5 percent is for central business functions, 29.9 percent is for public safety, and 33.9 percent is for infrastructure and planning services (City of Eugene, 2017b).

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6. Highway 99 Corridor Environmental Consequences

6.1. Long-term Direct Impacts

6.1.1. Neighborhoods

Transportation projects have the potential to affect the neighborhoods they travel through by adding or changing travel patterns, affecting accessibility to services, and sometimes disrupting community cohesion. People who work and live in a neighborhood can also be affected by changes in noise levels, views, or physical changes, and changes in their walking environment. This section reviews how each Highway 99 Corridor alternative would impact the neighborhood environment. This analysis groups impacts by physical impacts (property acquisition and barriers); changes in community character (removal of trees and visual effects); transportation and accessibility; and noise and vibration.

6.1.1.1. No-Build Alternative

The No-Build Alternative would not result in property acquisition, removal of trees, or visual impacts. It would not improve accessibility, connectivity, or reliability. No enhanced pedestrian and bicycle crossings would benefit the communities and travelers. There would be no noise or vibration impacts. In addition, construction would not interfere with community and neighborhood activities.

6.1.1.2. Enhanced Corridor Alternative

Property acquisition/physical impacts. As discussed in the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the Highway 99 Corridor Enhanced Corridor Alternative would not result in the full acquisition of any properties or displacement of any residences or businesses. The only required property acquisitions would be minor; these acquisitions would allow the existing land use to remain, would not affect the overall neighborhood, and would not impact community facilities or public services. Property acquisition would include partial acquisition of 44 parcels (an estimated 1.3 acres of land). The proposed improvements would not require extensive additions to the existing right of way beyond minor areas around stops. The physical changes for the Enhanced Corridor Alternative would not create barriers to interaction.

Community character (removal of trees and visual effects). According to the *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) and the *MovingAhead Visual and Aesthetic Resources Technical Report* (CH2M, 2017l), the Highway 99 Corridor Enhanced Corridor Alternative potentially would remove up to 14 medium-to-large street trees that line either side of the roadway. Compatible younger trees would replace those that would be removed. Replacement trees would require over 15 years to reach similar maturation. The removal of trees might change the experience of the environment in the short-term for less than 3 percent of the corridor where there would be a high probability of potential impact to medium and large trees. However, because the trees would be replaced, no adverse impacts are anticipated on community character. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Transportation and accessibility. As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), this Enhanced Corridor Alternative would increase transit accessibility and

reliability to residents within the neighborhoods. The presence of 20 new or enhanced stops (of 31 total stops) would not change the overall visual setting of any neighborhoods because the Highway 99 Corridor Enhanced Corridor Alternative is located on main arterials within an urban setting that already includes bus service. The improved reliability of the service might make transit service more attractive for users.

Nine new and two improved **pedestrian and bicycle crossings**, as well as over 1.25 miles of new or improved sidewalks, would provide corridor users safer access to the neighborhood parks and other destinations. This would provide an indirect benefit that might attract more persons to walk and ride bicycles. A variety of people could increase their potential for healthier lifestyles and improve the quality of their lives. This indirect effect is discussed in Chapter 12 of this technical report. A major improvement for the community would be the new pedestrian and bicycle bridge over the railroad tracks to connect the greater community with Trainsong Park.

Noise and vibration. According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the Enhanced Corridor Alternative could have noise impacts on up to seven properties, but it is expected that these could be mitigated. No vibration impacts are anticipated.

Conclusion. The Highway 99 Corridor Enhanced Corridor Alternative would not result in negative changes in neighborhood quality, cause barriers to social interaction, or adversely affect community facilities or public services because the project would be located primarily within the existing roadway right of way, would maintain building access (including enhanced access to community facilities and parks), and would improve pedestrian and bicycle facilities. In addition, the project would increase connectivity to other transit connections in the downtown area, including the WEEE.

6.1.1.3. EmX Alternative

Property acquisition/physical impacts. As discussed in the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the Highway 99 Corridor EmX Alternative would not result in the full acquisition or displacement of any residential or business properties. One parcel would have potential impacts on its drive-through circulation. This parcel is currently vacant and therefore is not counted as a displacement, but would be considered a potential displacement if it were to become occupied before the project is constructed. Working with potential property owners to identify this property impact in advance of purchase and mitigate as appropriate would reduce the risk of a potential displacement in this location. The only required property acquisitions would be minor; these acquisitions would allow the existing land uses to remain, would not affect the overall neighborhood, and would not impact community facilities or public services. Property acquisition would include partial acquisitions of 38 parcels (an estimated 1.6 acres of land). The enhanced pedestrian and bike lanes would not require extensive additions to the existing right of way beyond minor areas of station locations. Therefore, barriers to interaction would not be created.

Community character (removal of trees and visual effects). According to the *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) and the *MovingAhead Visual and Aesthetic Resources Technical Report* (CH2M, 2017l), the Highway 99 Corridor EmX Alternative potentially would remove up to 31 street trees that line either side of the roadway and up to 9 landscape trees. All trees would be replaced with compatible younger trees. Replacement trees would require over 15 years to reach similar maturation. The removal of trees might change the experience of the environment in the short-term for less than 3 percent of the corridor where there would be a high probability of potential impact to medium and large trees. However, because the trees would be replaced, no adverse impacts are anticipated on community character. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum*

(CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Transportation and accessibility. As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the improvements associated with the EmX Alternative would increase transit accessibility and reliability to residents within the neighborhoods. The presence of 14 new or enhanced stations (of 24 total stations) would not change the overall visual setting of any neighborhoods because the Highway 99 Corridor EmX Alternative is located on main arterials within an urban setting that already includes bus service. The improved reliability and reduced headways would make this service more attractive to potential riders.

The EmX Alternative would use existing roadways and place bike lanes behind some of the stations to avoid conflicts and improve safety among transportation modes. This alternative would not create barriers within the roadway. Nine new and two improved **pedestrian and bicycle crossings**, over 1.36 miles of new or improved sidewalks, and almost 4 miles of improved bike facilities would provide safer access for users of the corridor to the neighborhood parks and other destinations. This would provide an indirect benefit that might attract more persons to walk and ride bicycles. A variety of people could increase their potential for healthier lifestyles and improve the quality of their lives. This indirect effect is discussed in Chapter 12 of this technical report. A major improvement for the community would be the new pedestrian and bicycle bridge over the railroad tracks to connect the greater community with Trainsong Park.

Noise and vibration. According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the EmX Alternative could have noise impacts on up to 19 properties, but it is expected these could be mitigated. No vibration impacts are expected.

Conclusion. The Highway 99 Corridor EmX Alternative would not result in negative changes in neighborhood quality, cause barriers to social interaction, or adversely affect community facilities because the project would be located primarily within the existing roadway right of way, would maintain building access (including enhanced access to community facilities and parks), and would improve pedestrian and bicycle facilities. In addition, the project would increase connectivity to other transit connections in the downtown area, including the WEEE.

6.1.2. Community Facilities and Public Services

In general, transit projects are beneficial because they enhance accessibility to and from community facilities and public services. Emergency services could benefit from improved transportation circulation and, when needed, they could take advantage of the dedicated transit lanes to drive around congested areas. In general, adverse impacts would be limited to property acquisitions or changes in access. In some cases, transit improvements could increase congestion at intersections. See the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b) for more information about intersection impacts.

6.1.2.1. No-Build Alternative

The No-Build Alternative would not result in adverse impacts on community or public facilities, would not improve accessibility and reliability to these services, and would not improve transportation safety that could reduce the number of potential conflicts among pedestrians, bicycles, and motorized vehicles.

6.1.2.2. Enhanced Corridor Alternative

Community facilities. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the Highway 99 Corridor Enhanced Corridor Alternative would result in minor partial acquisition of the Alpine Cottages retirement center and the Alpine Meadows Retirement Community Center. It would also require partial acquisition of Trainsong Park for the pedestrian railroad overcrossing. None of this property acquisition would affect the functions and values of these facilities. In addition, these community and recreational uses would benefit from improved accessibility.

According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the operation of the Enhanced Corridor Alternative after mitigation would not result in noise and vibration impacts on sensitive receptors such as residences, churches, concert halls, or other sensitive community facilities.

Emergency services. Emergency service providers did not foresee major issues of concern related to expanded transit services or the proposed improvements (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). Transit operators would need to yield to police sirens because police are not able to pre-empt traffic signals (as fire engine vehicles can). Improved pedestrian and bicycle facilities that provide refuge would improve safety.

Emergency service providers would have an opportunity to review more detailed designs and would work with LTD to address issues in the future (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). The Enhanced Corridor Alternative would not provide the dedicated transit lane advantages of the EmX Alternative. In general, compared to general purpose lanes, emergency service providers have fewer minor collisions when transit-only lanes are implemented.

6.1.2.3. EmX Alternative

Community facilities. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the Highway 99 Corridor EmX Alternative would result in minor partial acquisition of the Alpine Cottages retirement center and the Alpine Meadows Retirement Community Center. It would also require partial acquisition of Trainsong Park for the pedestrian railroad overcrossing. None of this property acquisition would affect the functions and values of these facilities. In addition, these community and recreational uses would benefit from improved accessibility.

According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the operation of the EmX Alternative after mitigation would not result in noise and vibration impacts on sensitive receptors such as residences, churches, concert halls, or other sensitive community facilities.

Emergency services. Emergency service providers did not foresee major issues of concern related to expanded transit services or the proposed improvements (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). Transit operators would need to yield to police sirens because police are not able to pre-empt traffic signals (as fire engine vehicles can). Improved pedestrian and bicycle facilities that provide refuge would improve safety.

Emergency service providers would have an opportunity to review more detailed designs and would work with LTD to address issues in the future (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). The EmX Alternative would provide dedicated transit lanes that would provide emergency services

advantages in responding to emergencies. And, compared to general purpose lanes, emergency service providers have fewer minor collisions when transit-only lanes are implemented.

6.1.3. Economics

Transportation projects can change access, travel patterns, property conditions, jobs, and the tax base, all of which can affect the local and regional economies.

6.1.3.1. No-Build Alternative

The No-Build Alternative would not result in economic impacts. Residents, employees, and visitors would not benefit from the interconnected transportation network that the Highway 99 Corridor transit improvements would provide.

6.1.3.2. Enhanced Corridor Alternative

Property acquisition. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), the Highway 99 Corridor Enhanced Corridor Alternative would not displace any businesses. As described in Section 6.1.1, this alternative would require 1.3 acres of land for partial acquisitions. The 44 affected parcels would consist of 38 commercial and industrial parcels, 1 public and institutional parcel, 4 residential parcels, and 1 vacant parcel.[2] The majority of these impacts would be less than 0.1 acre and would not affect the existing land uses.

Property taxes. As described under Affected Environment (Section 5.4.3, City of Eugene Tax Base), property owners pay annual property taxes of between $10.06 and $24.83 per $1,000 of their property value. Assuming a land value of $100,000 per acre, converting 1.3 acres to transportation-related use might reduce tax collection by $1,310 to $3,227 in 2016 fiscal year dollars.

Circulation, access, and parking effects on businesses. As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the Highway 99 Corridor Enhanced Corridor Alternative would result in a loss of 46 off-street parking stalls at 5 properties and would require left-hand turn restrictions at 14 locations. These changes would cause some increase in traffic delays as traffic would disperse among adjacent roadways. However, they would not adversely affect travel through and across the neighborhoods or materially impair business access. No other changes to transportation, access, or parking would affect businesses or revenues to the City. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Employment and employees. The Enhanced Corridor Alternative would improve accessibility to employment locations along the Highway 99 Corridor's neighborhoods and the downtown business district for both current and prospective employees. The estimated capital cost of the Highway 99 Corridor Enhanced Corridor Alternative would be $38 million. This would create construction jobs that would result in other expenditures in the corridor, increasing tax revenue during construction.

[2] All other resource-related analyses evaluated a more conservative footprint to account for the full range of impacts, while property acquisitions narrowed the footprint to realize minimization efforts in design.

Development potential. Development potential is an importance economic indicator; however, this effect is considered an indirect impact and therefore is discussed under Chapter 12.

6.1.3.3. EmX Alternative

Property acquisition. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), the Highway 99 Corridor EmX Alternative would not displace any businesses. One parcel would have potential impacts on its drive-through circulation. This parcel is currently vacant and therefore is not counted as a displacement, but would be considered a potential displacement if it were to become occupied before the project is constructed. Working with potential property owners to identify this property impact in advance of purchase and mitigate as appropriate would reduce the risk of a potential displacement in this location. The EmX Alternative would result in partial acquisitions of 38 parcels (an estimated 1.6 acres of land). The 38 affected parcels would consist of 34 commercial and industrial parcels, 1 public and institutional parcel, and 3 residential parcels.[3] The Highway 99 Corridor EmX Alternative would impact six fewer parcels than the Enhanced Corridor Alternative.

Property taxes. As described under Affected Environment (Section 5.4.3, City of Eugene Tax Base), property owners pay annual property taxes of between $10.06 and $24.83 per $1,000 of their property value. Assuming a land value of $100,000 per acre, converting 1.6 acres to transportation-related use might reduce tax collection by $1,610 to $3,973 in 2016 fiscal year dollars.

Circulation, access, and parking effects on businesses. According to the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the Highway 99 Corridor EmX Alternative would result in a loss of 53 off-street parking stalls at 6 properties and would require left-hand turn restrictions at 14 locations. These changes would cause some increase in traffic delays as traffic would disperse among adjacent roadways. However, they would not adversely affect travel through and across the neighborhoods or materially impair business access. No other changes to transportation, access, or parking would affect businesses or revenues to the City. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Employment and employees. The EmX Alternative would enhance accessibility to employment locations along the Highway 99 Corridor's neighborhoods and the downtown business district for both current and prospective employees. The estimated capital cost of a new Highway 99 Corridor EmX Alternative would be $67 million. This would create construction jobs that would result in other expenditures in the corridor, increasing tax revenue during construction. This alternative would create more construction jobs than the Enhanced Corridor Alternative and could increase expenditures in the corridor.

Development potential. Development potential is an importance economic indicator; however this effect is considered an indirect impact and therefore is discussed under Chapter 12.

[3] All other resource-related analyses evaluated a more conservative footprint to account for the full range of impacts, while property acquisitions narrowed the footprint to realize minimization efforts in design.

6.2. Environmental Justice

This section analyzes whether any of the environmental impacts during operation and construction of the Highway 99 Corridor alternatives would result in adverse impacts on minority or low-income populations. This section also determines whether those impacts would disproportionately affect minority and low-income populations. U.S. Department of Transportation (USDOT) Order 5610.2(a) (USDOT, 2012, May 10) and Circular FTA C 4703.1 (FTA, 2012, August 15) provide guidance on how to evaluate and address environmental justice impacts on minority and low-income populations. Both documents require that the assessment of "disproportionate impacts" consider (a) impacts, (b) mitigation, and (c) any offsetting benefits that might also result from the project. For this analysis, impacts are listed. However, the determination of whether those impacts would disproportionately affect minority and low-income populations was considered assuming that mitigation measures would be applied. In addition, project benefits were considered when determining the potential for disproportionate impacts on minority and low-income populations.

Project impacts fall into one or more of the following categories: (1) project impacts would be positive; (2) no project impacts are anticipated or impacts would be minor (measurable, but not perceptible and/or localized); or (3) project impacts would be more than minor, but with the implementation of mitigation, minority and low-income populations would not experience impacts that would materially differ from the impacts on those who are members of non-minority and non-low-income populations.

Technical reports for each environmental element prepared for the MovingAhead Project were reviewed to determine the types and severity of impacts before and after mitigation on the Highway 99 Corridor build alternatives (Enhanced Corridor and EmX Alternatives). The environmental resources that found no, or only negligible, environmental justice-associated impacts include air quality, geology, hazardous materials, utilities, water quality, ecosystems, and cultural resources. The following technical reports provide supporting documentation for these conclusions:

- MovingAhead Air Quality Technical Report (MMA and CH2M, 2017a)
- MovingAhead Geology and Seismic Technical Report (CH2M, 2017e)
- MovingAhead Hazardous Materials Technical Report (CH2M, 2017f)
- MovingAhead Utilities Technical Report (CH2M, 2017k)
- MovingAhead Water Quality, Floodplain, and Hydrology Technical Report (CH2M, 2017m)
- *MovingAhead Ecosystems Technical Report* (Environmental Science & Assessment, LLC and CH2M, 2017)
- MovingAhead Cultural Resources Technical Report (Heritage Research Associates and CH2M, 2017)

6.2.1. No-Build Alternative

The No-Build Alternative would not result in adverse environmental justice impacts. However, it would not improve accessibility, provide enhanced connectivity, or increase reliability. It would not have the benefits associated with pedestrian and bicycle improvements, including no new crossing of the railroad corridor.

6.2.2. Enhanced Corridor Alternative

Figures 6.2-1 and 6.2-2 illustrate minority and low-income populations, respectively, for the Highway 99 Corridor Enhanced Corridor Alternative. With this alternative, for most of the environmental elements there would be either no impacts or the impacts would be minor during construction and operation and would not result in substantial adverse impacts.

Figure 6.2-1. Highway 99 Corridor Enhanced Corridor Alternative Minority Population by Block Group

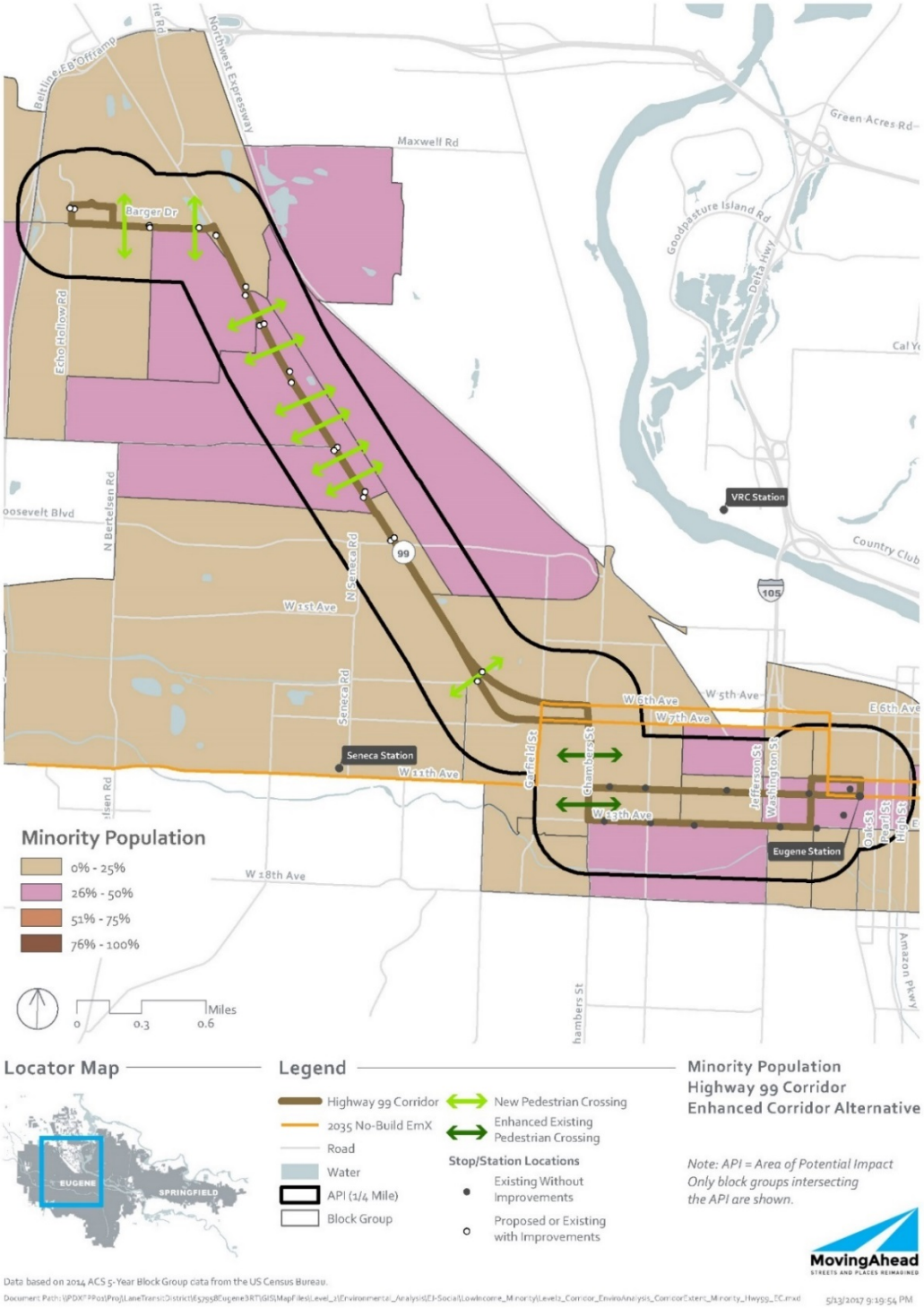
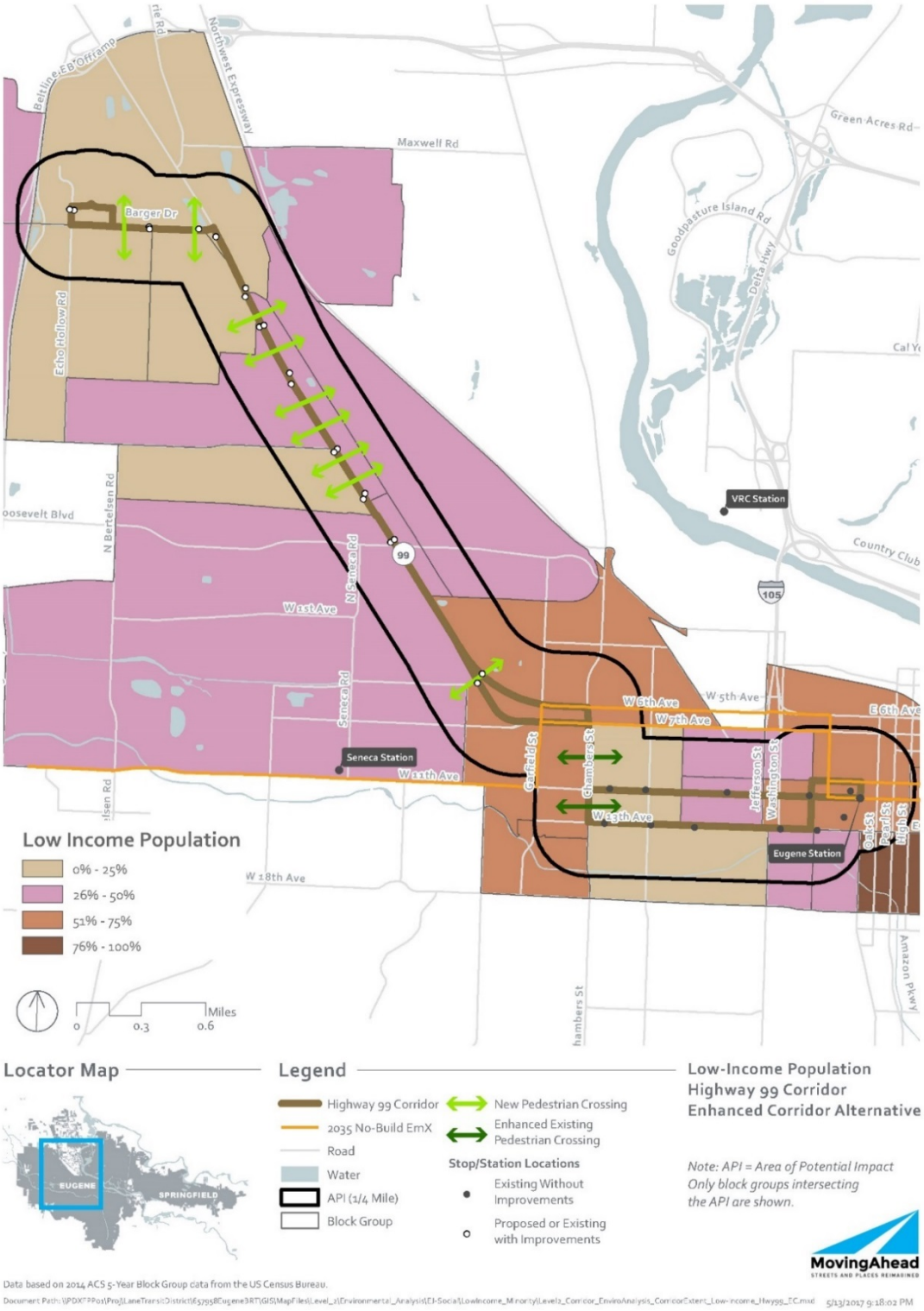


Figure 6.2-2. Highway 99 Corridor Enhanced Corridor Alternative Low-Income Population by Block Group



As stated above, environmental resource analysts concluded that no, or only negligible, impacts would result from the Enhanced Corridor Alternative related to air quality, geology, hazardous materials, utilities, water quality, ecosystems, cultural and resources. The remainder of this analysis discusses topics where impacts could occur from the Enhanced Corridor Alternative.

6.2.2.1. Project Impacts Before and After Mitigation

For the following environmental elements, more than minor impacts before implementation of mitigation could affect minority and/or low-income populations.

- **Noise –** According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the Highway 99 Corridor Enhanced Corridor Alternative could have noise impacts on up to 7 properties. There would not be vibration impacts. Because it is expected that noise impacts could be mitigated, no adverse impacts are anticipated.
- **Property Acquisitions/Land Use** – According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), only minor property acquisition would be associated with the Enhanced Corridor Alternative. Such minor property acquisitions would not result in residential or business displacements. This alternative would affect 44 properties, and an estimated 1.3 acres of land would be acquired and converted to a transportation-related use. Affected property owners would be compensated under the Uniform Relocation and Real Property Act of 1970, and no adverse impacts are anticipated.
- **Social/Economics** – As determined in Section 6.1 of this technical report, the Highway 99 Corridor Enhanced Corridor Alternative would not bisect any neighborhoods or displace any community facilities. This alternative would not displace any businesses or employees. According to the *MovingAhead Parklands, Recreation Areas, and Section 6(f) Technical Report* (CH2M, 2017h), the Enhanced Corridor Alternative would result in minor impacts on one park (Trainsong Park), but would not impact the function or value of the park.
  As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), there would be no on-street parking impacts. However, the Highway 99 Corridor Enhanced Corridor Alternative would impact 46 off-street parking stalls that would affect 5 commercial businesses and would require left-hand turn restrictions at 14 locations. None of the affected businesses provides services that are unique to minority or low-income populations. LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation. Turning restrictions that would change access to properties would not result in any adverse impacts because alternate access is available.
  The *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g) supports that development in stop areas could include new employment opportunities. Although this would be beneficial, new development or redevelopment in stop areas could increase property values, raising rents or real estate property taxes, which could affect low-income populations. The City of Eugene has affordable housing policies that could minimize this potential negative effect.
- **Visual/Street Trees** – The *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) reports that the Highway 99 Corridor Enhanced Corridor Alternative potentially would remove up to 14 large and medium street trees. Compatible younger trees would replace those that were removed. The loss of mature trees would be visible but would not affect the overall character of the neighborhood. Although the replacement trees would require over 15 years to reach similar

maturation, because the trees would be replaced, no adverse impacts are anticipated on community character (*MovingAhead Visual and Aesthetic Resources Technical Report* [CH2M, 2017l]).

Given the nature of the Highway 99 Corridor, impacts would be more directly experienced by commercial and industrial land uses. Most project impacts would occur during construction. Populations living and working in the area might experience noise, dust, and detours for relatively short periods. These short-term impacts, after mitigation, would not be great enough to negatively affect the businesses and adjacent uses. To address construction impacts, LTD would implement mitigation measures and construction-related best management practices (see Chapter 11 of this report). These short-term construction impacts would not lead to long-term substantial impacts. Minority and low-income populations would not experience impacts that would materially differ from those that non-minority and non-low-income populations would experience.

Construction would also provide temporary economic benefits, including the creation of construction jobs and other expenditures related to construction spending.

While all populations would experience slight changes, none of the impacts would be predominantly borne by a minority or low-income population; the identified impacts would not be greater in magnitude than the impacts that the non-minority and non-low-income populations within the API would experience; and the Highway 99 Corridor Enhanced Corridor Alternative would not adversely impact community facilities especially important to minority and low-income populations.

6.2.2.2. Project Benefits

The Highway 99 Corridor Enhanced Corridor Alternative would provide enhanced accessibility to an area with one of the highest proportions of low-income populations within Eugene. Enhanced accessibility would provide low-income and minority populations reliable and affordable connections with the business district, where transit connections would also link them to several other communities and employment centers.

The Highway 99 Corridor Enhanced Corridor Alternative would benefit transit-dependent persons and persons with disabilities more than others. This alternative would generate several transportation benefits for the traveling public as a whole (including minority and low-income populations). These benefits would include the following:

- Improving transit accessibility and reliability. This alternative would improve transit travel times and increase accessibility and reliability to 72 community facilities within the corridor. It would also provide connections with the WEEE and other transit services within downtown Eugene to reach the Central Business District and other regional employment centers.
- Providing better access and improving safety on the local roadway system around the study area from a variety of local roadway modifications.
- Supplying pedestrian improvements, including new sidewalks, improved sidewalks, and new or upgraded crossings. Improvements would meet Americans with Disability Act (ADA) standards.
- Providing bicycle improvements, including new and/or improved bicycle facilities.

In addition to the benefits associated with enhanced accessibility and with pedestrian and bicycle infrastructure improvements (as noted above), the Highway 99 Corridor Enhanced Corridor Alternative includes a new pedestrian bridge over the railroad providing a new pedestrian and bicycle connection to Trainsong Park. This access has not been available in a safe manner and it would expand the neighborhood's recreational resources.

6.2.2.3. Environmental Justice Conclusion

Because the Highway 99 Corridor Enhanced Corridor Alternative would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate impacts on minority or low-income populations are anticipated.

6.2.3. EmX Alternative

Figures 6.2-3 and 6.2-4 illustrate the minority and low-income populations, respectively, for the Highway 99 Corridor EmX Alternative. With this alternative, for most of the environmental elements, there would be either no impacts or the impacts would be minor during construction and operation and would not result in substantial adverse impacts. As stated above, environmental resource analysts concluded that, except for hazardous materials, no, or only negligible, impacts would result from the EmX Alternative related to air quality, geology, utilities, water quality, ecosystems, and cultural resources. The remainder of this analysis discusses topics where impacts could occur from the EmX Alternative.

6.2.3.1. Project Impacts Before and After Mitigation

For the following environmental elements, more than minor impacts before implementation of mitigation could affect minority and/or low-income populations.

- **Noise** – According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the Highway 99 Corridor EmX Alternative could have noise impacts on up to 19 properties. There would not be vibration impacts. Because it is expected that noise impacts could be mitigated, no adverse impacts are anticipated.
- **Property Acquisitions/Land Use** – According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), minor property acquisitions on private and publicly owned property would be associated with the EmX Alternative. Such minor property acquisitions would not result in residential or business displacements. There would be 38 properties affected and an estimated 1.6 acres of land would be acquired and converted to a transportation-related use. Affected property owners would be compensated under the Uniform Relocation and Real Property Act of 1970, and no adverse impacts are anticipated.
- **Social/Economics** – As determined in Section 6.1 of this technical report, the Highway 99 Corridor EmX Alternative would not bisect any neighborhoods or displace any community facilities. According to the *MovingAhead Parklands, Recreation Areas, and Section 6(f) Technical Report* (CH2M, 2017h), the EmX Alternative would potentially affect one park (Trainsong Park), but would not impact the functions or values of the park.
  Neither businesses nor employees would be displaced according to the MovingAhead Acquisitions and Displacements Technical Report (CH2M, 2017a). The MovingAhead Transportation Technical Report (DKS and CH2M, 2017b) and the Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum (CH2M, 2017n) indicate that there would be no on-street parking impacts. However, the Highway 99 Corridor EmX Alternative would result in a loss of 53 off-street parking stalls at 6 businesses and would require left-hand turn restrictions at 14 locations. These changes would cause some increase in traffic delays as traffic disperses among adjacent roadways. LTD has prepared an Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties.

Figure 6.2-3. Highway 99 Corridor EmX Alternative Minority Population by Block Group

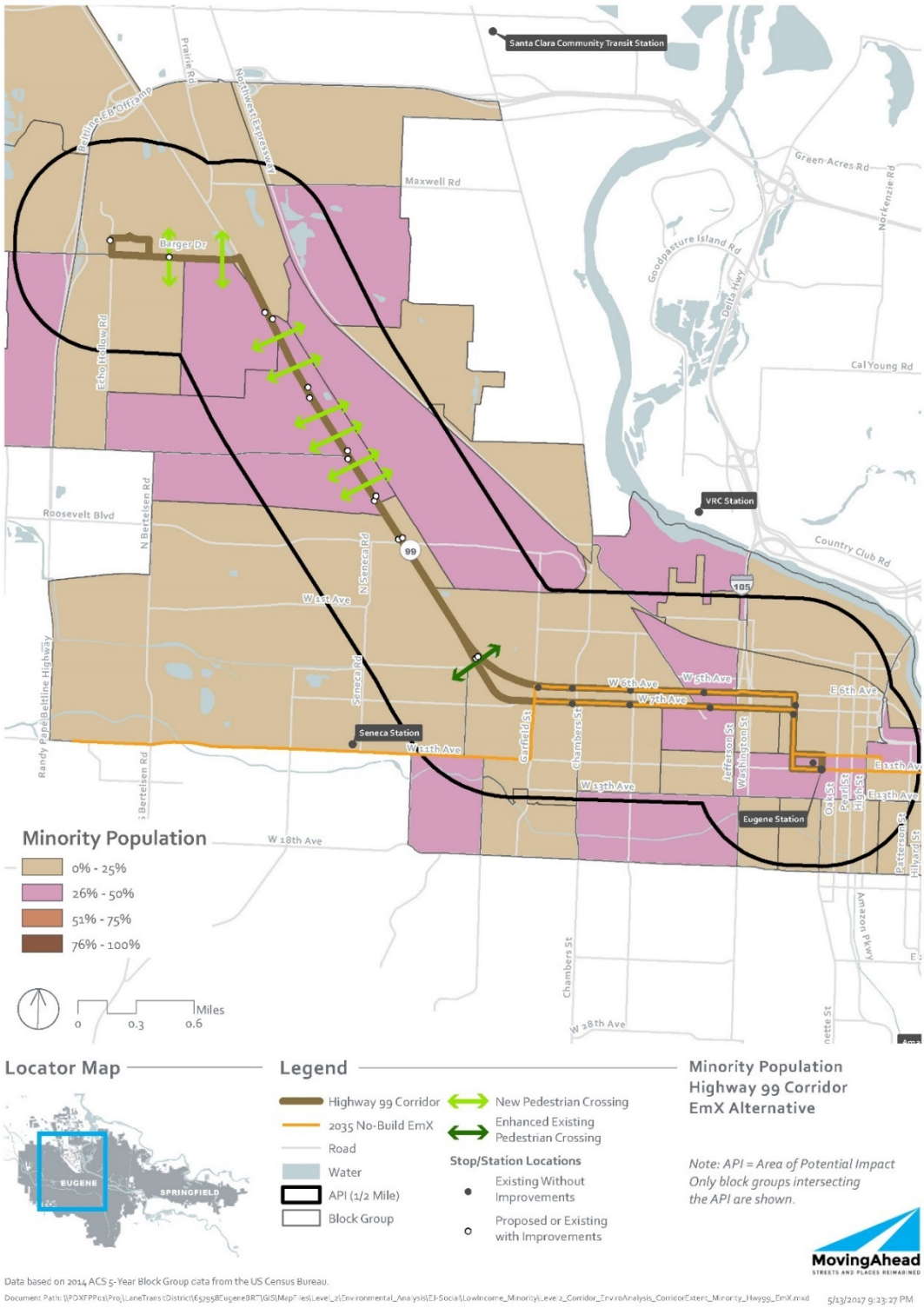
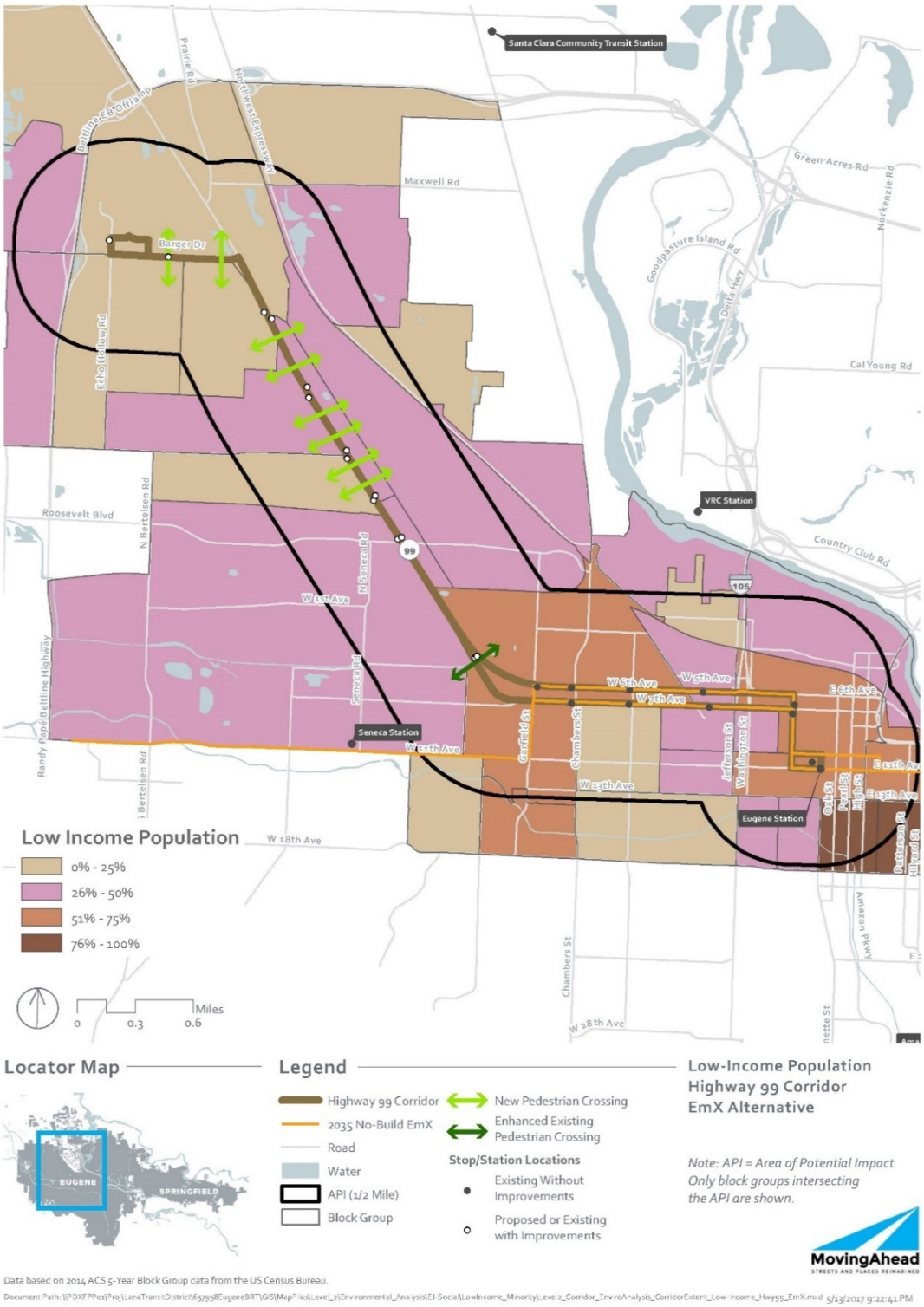


Figure 6.2-4. Highway 99 Corridor EmX Alternative Low-Income Population by Block Group



Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation. Because adequate parking would remain, no adverse impacts are anticipated. Turning restrictions that would change access to properties would not result in any adverse impacts because alternate access would be maintained.
Development in station areas could include new employment opportunities that would be beneficial (*MovingAhead Land Use and Prime Farmlands Technical Report* [CH2M, 2017g]). However, such development could increase property values, raising rents or real estate property taxes, which could affect low-income populations. The City of Eugene has affordable housing policies that could minimize this potential negative effect.

- **Visual/Street Trees** – As described in the *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) and the *MovingAhead Visual and Aesthetic Resources Technical Report* (CH2M, 2017l), the Highway 99 Corridor EmX Alternative potentially would remove up to 31 medium and large street trees and up to 9 landscape trees (up to 40 total trees). Compatible younger trees would replace those removed. Although the replacement trees would require over 15 years to reach similar maturation, because the trees would be replaced, no adverse impacts are anticipated on community character.
- **Hazardous Materials** – The *MovingAhead Hazardous Materials Technical Report* (CH2M, 2017f) identifies two hazardous materials sites that pose a high risk (potential to require additional hazardous material clean-up) due to the nature of the contaminants. However, with the implementation of best management practices and mitigation, no adverse impacts are anticipated.

Most Highway 99 Corridor EmX Alternative adverse impacts would occur during construction. They would be the same as, although more intense than, those with the Enhanced Corridor Alternative. These impacts would be limited in duration. Implementing the proposed mitigation measures would further reduce these impacts, and no adverse impacts would result. Given the nature of the Highway 99 Corridor, impacts would be more directly experienced by commercial and industrial land uses. Most EmX Alternative impacts would occur during construction.

Populations living and working in the area might experience noise, dust, and detours for relatively short periods. These short-term impacts, after mitigation, would not be great enough to negatively affect the businesses and adjacent uses. To address construction impacts, LTD would implement mitigation measures and construction-related best management practices (see Chapter 11 of this report). Construction impacts would be short-term in nature and would not result in long-term substantial impacts. Minority and low-income populations would not experience impacts that would materially differ from those non-minority and non-low-income populations would experience.

Construction would also provide temporary economic benefits, including the creation of construction jobs and other expenditures related to construction spending.

While all populations would experience slight changes, none of the impacts would be predominantly borne by a minority or low-income population; the identified impacts would not be greater in magnitude than the impacts that the non-minority and non-low-income populations within the API would experience; and this alternative would not adversely impact community facilities especially important to minority and low-income populations.

6.2.3.2. Project Benefits

The Highway 99 Corridor EmX Alternative would yield the same benefits as those listed for the Enhanced Corridor Alternative, including the new pedestrian bridge over the railroad providing a new pedestrian and bicycle connection to Trainsong Park. This access has not been available in a safe manner and it would expand the neighborhood's recreational resources. Other pedestrian and bicycle improvements,

including buffered bicycle lanes and increased crossing opportunities, would enhance safety. The BAT lanes in segments of the alternative would also improve vehicle safety.

Compared to the Enhanced Corridor Alternative, the EmX Alternative would provide additional reliability and frequency of service. In addition, it would improve local traffic operations at one intersection. Due to the nature of the EmX Alternative transit service, the frequency and reliability would attract persons from a broader distance – of up to 0.5 mile versus 0.25 mile. The Highway 99 Corridor has one of the highest proportions of low-income populations within Eugene. Accessibility would be improved to 118 community facilities within the corridor and to employment centers of the Central Business District. With transit connections (such as the WEEE and other planned transit investments), minority and low-income persons would receive enhanced accessibility to multiple regional employment centers.

6.2.3.3. Environmental Justice Conclusion

Because the Highway 99 Corridor EmX Alternative would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate impacts on minority or low-income populations are anticipated.

7. River Road Corridor Environmental Consequences

7.1. Long-term Direct Impacts

7.1.1. Neighborhoods

Transportation projects have the potential to affect the communities they travel through by adding or changing travel patterns, affecting accessibility to services, and sometimes disrupting community cohesion. People who work and live in a neighborhood can also be affected by changes in noise levels, views, or physical changes, and changes in their walking environment. This section reviews how each River Road Corridor alternative (Enhanced Corridor and EmX Alternatives) would impact the neighborhood environment. This analysis groups impacts by physical impacts (property acquisition and barriers); change in character (removal of trees and visual effects); transportation and accessibility; and noise and vibration.

7.1.1.1. No-Build Alternative

The No-Build Alternative would not result in property acquisition, removal of trees, or visual impacts. It would not improve accessibility, connectivity, or reliability. There would be no enhanced pedestrian and bicycle crossings to benefit the communities and travelers. There would be no noise or vibration impacts. In addition, construction would not interfere with community and neighborhood activities.

7.1.1.2. Enhanced Corridor Alternative

Property acquisition/physical impacts. As discussed in the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the River Road Corridor Enhanced Corridor Alternative would not result in the full acquisition or displacement of any residential properties or the displacement of any residences. It could require full acquisition of up to two commercial properties. Up to four businesses could be displaced from these full acquisitions and one partial acquisition due to impacts on drive-through circulation from the right of way needed for this alternative. Most property acquisitions would be minor; these acquisitions would allow the existing land uses to remain, would not affect the overall neighborhood, and would not impact community facilities or public services. Property acquisitions would include partial acquisitions of two parcels and full acquisitions of three parcels (an estimated 1.3 acres of land). The enhanced pedestrian and bike lanes would not require extensive additions to the existing right of way beyond minor areas around stops. The physical changes for the Enhanced Corridor Alternative would not create barriers to interaction.

Community character (removal of trees and visual effects). According to the *MovingAhead Street and Landscape Trees Technical Report* (CH2M 2017j), the River Road Corridor Enhanced Corridor Alternative potentially would remove up to 13 medium and large street trees. Compatible younger trees would replace those that would be removed. Replacement trees would require over 15 years to reach similar maturation. The removal of trees might change the experience of the environment in the short-term for less than 10 percent of the corridor where there would be a high probability of impacts to trees. However, because the trees would be replaced, no adverse impacts are anticipated on community character. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Transportation and accessibility. As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), this Enhanced Corridor Alternative would increase transit accessibility and reliability to residents within the neighborhoods. It would also increase accessibility for persons going to and from the Veterans Administration Center. The presence of 28 new or enhanced stops (of 53 total stops) would not change the overall visual setting of any neighborhoods because the River Road Corridor Enhanced Corridor Alternative is located on main arterials within an urban setting that already includes bus service. The improved reliability of the service might make transit service more attractive for users.

Five new and three improved **pedestrian and bicycle crossings,** as well as over 0.75 mile of new or improved sidewalks, would provide corridor users safer access to the neighborhood parks and other destinations. This would provide an indirect benefit that might attract more persons to walk and ride bicycles. A variety of people could increase their potential for healthier lifestyles and improve the quality of their lives. This indirect effect is discussed in Chapter 12 of this technical report.

Noise and vibration. According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the Enhanced Corridor Alternative is not expected to result in any noise or vibration impacts on residential or community facilities (using FTA criteria).

Conclusion. The River Road Corridor Enhanced Corridor Alternative would not result in negative changes in neighborhood quality, cause barriers to social interaction, or adversely affect community facilities because the project would be located within the existing roadway right of way, would maintain building access (including enhanced access to community facilities and parks), and would improve pedestrian and bicycle facilities. In addition, the project would increase connectivity to other transit connections in the downtown area, including the WEEE.

7.1.1.3. EmX Alternative

Property acquisition/physical impacts. As discussed in the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the River Road Corridor EmX Alternative would not result in the full acquisition of any residential properties or displacement of any residences. This alternative could require full acquisition of up to three commercial properties, and could displace up to six businesses due to impacts on drive-through circulation from the right of way needed for the project. Most required property acquisitions would be minor; these acquisitions would allow the existing land uses to remain, would not affect the overall neighborhood, and would not impact community facilities or public services. Property acquisition would include partial acquisitions of 37 parcels and full acquisitions of up to 3 parcels (an estimated 2.2 acres of land). The enhanced pedestrian and bike lanes would not require extensive additions to the existing right of way beyond minor areas of station locations. Therefore, barriers to interaction would not be created.

Community character (removal of trees and visual effects). According to the *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) and the *MovingAhead Visual and Aesthetic Resources Technical Report* (CH2M, 2017l), the River Road Corridor EmX Alternative potentially would remove up to 132 medium and large street trees. All trees would be replaced with compatible younger trees. Replacement trees would require over 15 years to reach similar maturation. The removal of trees might change the experience of the environment in the short-term for up to 11 percent of the corridor where there would be a high probability of impacts to trees. However, because the trees would be replaced, no adverse impacts are anticipated on community character. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Transportation and accessibility. As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the improvements associated with the EmX Alternative would increase transit accessibility and reliability to residents within the neighborhoods and increase accessibility for persons going to and from the Veterans Administration Center. The presence of 21 new or enhanced stations (of 28 total stations) would not change the overall visual setting of any neighborhoods because the River Road Corridor EmX Alternative is located on main arterials within an urban setting that already includes bus service. The improved reliability and reduced headways would make this service more attractive to potential riders. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

The EmX Alternative would use existing roadways and place bike lanes behind some of the stations to avoid conflicts and improve safety among transportation modes. This alternative would not create barriers within the roadway. Five new and one improved **pedestrian and bicycle crossings**, over 1.26 miles of new or improved sidewalks, and 5.09 miles of improved bicycles facilities would provide corridor users with safer access to the neighborhood parks. This would provide an indirect benefit that might attract more persons to walk and ride bicycles. A variety of people would increase their potential for healthier lifestyles and improve the quality of their lives. This indirect effect is discussed in Chapter 12 of this technical report.

Noise and vibration. According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the EmX Alternative could have noise impacts on up to two properties, but it is expected these could be mitigated. No vibration impacts are expected.

Conclusion. The River Road Corridor EmX Alternative would not result in negative changes in neighborhood quality, cause barriers to social interaction, or adversely affect community facilities because the project would be located primarily within the existing roadway right of way, would maintain building access (including enhanced access to community facilities and parks), and would improve pedestrian and bicycle facilities. In addition, the project would increase connectivity to other transit connections in the downtown area, including the WEEE.

7.1.2. Community Facilities and Public Services

In general, transit projects are beneficial because they enhance accessibility to and from community facilities and public services. Emergency services can benefit from improved transportation circulation and, when needed, they can take advantage of the dedicated transit lanes to drive around congested areas. In general, adverse impacts would be limited to property acquisitions or changes in ingress and egress. In some cases, transit could increase congestion at intersections. See the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b) for more information about intersection impacts.

7.1.2.1. No-Build Alternative

The No-Build Alternative would not result in adverse impacts on community or public facilities, would not improve accessibility and reliability to these services, and would not improve transportation safety that could reduce the number of potential conflicts among pedestrians, bicycles, and motorized vehicles.

7.1.2.2. Enhanced Corridor Alternative

Community Facilities. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the River Road Corridor Enhanced Corridor Alternative would result in minor partial

acquisition of the River Road Annex Community Center. It could also require partial acquisition of West Bank Park for transit way and station improvements. None of these property impacts would affect the functions and values of these properties. In addition, these community facilities (including the Veterans Administration Clinic) and recreational uses would benefit from improved accessibility.

According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the operation of the Enhanced Corridor Alternative after mitigation would not result in noise or vibration impacts on sensitive receptors such as residences, churches, concert halls, or other sensitive community facilities.

Emergency services. Emergency service providers did not foresee major issues of concern related to expanded transit services or the proposed improvements (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). Transit operators would need to yield to police sirens because police are not able to pre-empt traffic signals (as fire engine vehicles can). Improved pedestrian and bicycle facilities that provide refuge would improve safety.

Emergency service providers would have an opportunity to review more detailed designs and would work with Lane Transit District to address issues in the future (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). The Enhanced Corridor Alternative would not provide the dedicated transit lane advantages of the EmX Alternative. In general, compared to general purpose lanes, emergency service providers have fewer minor collisions when transit-only lanes are implemented.

7.1.2.3. EmX Alternative

Community Facilities. According to the MovingAhead Acquisitions and Displacements Technical Report (CH2M, 2017a), the River Road Corridor EmX Alternative would result in minor partial acquisition of the River Road Annex Community Center and two churches, and both West Bank and Rasor Parks. Majority of these impacts could be avoided through further design, but would otherwise not affect the function of these resources. It could also require partial acquisition of West Bank Park for transit way and station improvements. None of these property impacts would affect the functions and values of these properties. In addition, these community facilities (including the Veterans Administration Clinic) and recreational uses would benefit from improved accessibility.

According to the MovingAhead Noise and Vibration Technical Report (MMA and CH2M, 2017b), the operation of the EmX Alternative after mitigation would not result in noise or vibration impacts on sensitive receptors such as residences, churches, concert halls, or other sensitive community facilities.

Emergency services. Emergency service providers did not foresee major issues of concern related to expanded transit services or the proposed improvements (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). Transit operators would need to yield to police sirens because police are not able to pre-empt traffic signals (as fire engine vehicles can). Improved pedestrian and bicycle facilities that provide refuge would improve safety.

Emergency service providers would have an opportunity to review more detailed designs and would work with Lane Transit District to address issues in the future (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). The EmX Alternative would provide dedicated transit lanes that would provide emergency services advantages in responding to emergencies. And, compared to general purpose lanes, emergency service providers have fewer minor collisions when transit-only lanes are implemented.

7.1.3. Economics

Transportation projects can change access, travel patterns, property conditions, jobs, and the tax base, all of which can affect the local and regional economies.

7.1.3.1. No-Build Alternative

The No-Build Alternative would not result in economic impacts. Residents, employees, and visitors would not benefit from the interconnected transportation network that the River Road Corridor transit improvements would provide.

7.1.3.2. Enhanced Corridor Alternative

Property acquisition. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), up to four businesses could be displaced with this alternative due to impacts to their drive-through circulation. As described in Section 7.1.1, Neighborhoods, the River Road Corridor Enhanced Corridor Alternative would result in partial acquisitions of two commercial and industrial parcels and full acquisition of three commercial parcels (an estimated 1.3 acres of land). This alternative would impact 35 fewer parcels than the River Road Corridor EmX Alternative, and it would result in the lowest number of property acquisitions and total land acquired for all the build alternatives.

Property taxes. As described under Affected Environment (Section 5.4.3, City of Eugene Tax Base), property owners pay annual property taxes of between $10.06 and $24.83 per $1,000 of their property value. Assuming a land value of $100,000 per acre, converting 1.3 acres to transportation-related use might reduce tax collection by $1,310 to $3,227 in 2016 fiscal year dollars.

Circulation, access, and parking effects on businesses. As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the River Road Corridor Enhanced Corridor Alternative would restrict left-hand turns at twelve locations. These changes would cause some increase in traffic delays as traffic would disperse among adjacent roadways. However, they would not adversely affect travel through and across the neighborhoods or materially impair business access. The loss of two off-street parking stalls would impact one business, but the reduction would not impede accessibility to this business. The Enhanced Corridor Alternative would have potential business circulation impacts on four businesses. These would potentially require full acquisition of the parcels and displacement of the businesses. No other changes to transportation, access, or parking would affect businesses or revenues to the City. No other impacts on parking or circulation would result from the River Road Corridor Enhanced Corridor Alternative. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Employment and employees. The Enhanced Corridor Alternative would enhance accessibility to employment locations along the River Road Corridor's neighborhoods and the downtown business district for both current and prospective employees. The estimated capital cost of the River Road Corridor Enhanced Corridor Alternative would be $20 million. This would create construction jobs that would result in other expenditures in the corridor, increasing tax revenue during construction.

Development potential. Development potential is an importance economic indicator; however, this effect is considered an indirect impact and therefore is discussed under Chapter 12.

7.1.3.3. EmX Alternative

Property acquisition. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), the River Road Corridor EmX Alternative might displace up to six businesses due to impacts to their drive-through circulation. The EmX Alternative would result in partial acquisitions of 37 parcels (consisting of 23 commercial and industrial parcels and 14 residential parcels) and full acquisitions of up to 3 commercial parcels (an estimated 2.2 acres of land).

Property taxes. As described under Affected Environment (Section 5.4.3, City of Eugene Tax Base), property owners pay annual property taxes of between $10.06 and $24.83 per $1,000 of their property value. Assuming a land value of $100,000 per acre, converting 2.2 acre to transportation-related use might reduce tax collection by $2,213 to $5,463 in 2016 fiscal year dollars.

Circulation, access, and parking effects on businesses. According to the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b) the River Road Corridor EmX Alternative would require left-hand turning restrictions at seven locations. These changes would cause some increase in traffic delays as traffic would disperse among adjacent roadways. However, they would not adversely affect travel through and across the neighborhoods or materially impair business access. The loss of 31 off-street parking stalls would impact 7 businesses, but the reduction would not impede accessibility to these businesses. There would be new left-hand turning restrictions to seven driveways. The EmX Alterative would have potential business circulation impacts to six businesses. These would potentially require full acquisition of the parcels and displacement of the businesses. No other changes to transportation, access, or parking would affect businesses or revenues to the City. No other impacts on parking or circulation would result from the River Road Corridor EmX Alternative. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, acquisitions, and tree impacts mitigation.

Employment and employees. The EmX Alternative would enhance accessibility to employment locations along the River Road Corridor's neighborhoods and the downtown business district for both current and prospective employees. The estimated capital cost of the River Road Corridor EmX Alternative would be $72 million. This would create construction jobs that would result in other expenditures in the corridor, increasing tax revenue during construction. This alternative would create more construction jobs than the Enhanced Corridor Alternative and could increase expenditures in the corridor.

Development potential. Development potential is an importance economic indicator; however, this effect is considered an indirect impact and therefore is discussed under Chapter 12.

7.2. Environmental Justice

This section analyzes whether any of the environmental impacts during operation and construction of the River Road Corridor alternatives would result in adverse impacts on minority or low-income populations. This section also determines whether those impacts would disproportionately affect minority and low-income populations. USDOT Order 5610.2(a) (USDOT, 2012, May 10) and Circular FTA C 4703.1 (FTA, 2012, August 15) provide guidance on how to evaluate and address environmental justice impacts on minority and low-income populations. Both documents require that the assessment of "disproportionate impacts" consider (a) impacts, (b) mitigation, and (c) any offsetting benefits that might also result from the project. For this analysis, impacts are listed. However, the determination of whether those impacts would disproportionately affect minority and low-income populations was considered assuming that mitigation

measures would be applied. In addition, project benefits were considered when determining the potential for disproportionate impacts on minority and low-income populations.

Project impacts fall into one or more of the following categories: (1) project impacts would be positive; (2) no project impacts are anticipated or impacts would be minor (measurable, but not perceptible and/or localized); (3) project impacts would be more than minor, but with the implementation of mitigation, minority and low-income populations would not experience impacts that would materially differ from the impacts on those who are members of non-minority and non-low-income populations.

Technical reports for each environmental element prepared for the MovingAhead Project were reviewed to determine the types and severity of impacts before and after mitigation on the River Road Corridor build alternatives (Enhanced Corridor and EmX Alternatives). Those environmental resources that found no, or only negligible, environmental justice-associated impacts include noise and vibration, air quality, geology, hazardous materials, utilities, water quality, ecosystems, and cultural resources. The following technical reports provide supporting documentation for these conclusions:

- MovingAhead Noise and Vibration Technical Report (MMA and CH2M, 2017b)
- MovingAhead Air Quality Technical Report (MMA and CH2M, 2017a)
- MovingAhead Geology and Seismic Technical Report (CH2M, 2017e)
- MovingAhead Hazardous Materials Technical Report (CH2M, 2017f)
- MovingAhead Utilities Technical Report (CH2M, 2017k)
- MovingAhead Water Quality, Floodplain, and Hydrology Technical Report (CH2M, 2017m)
- *MovingAhead Ecosystems Technical Report* (Environmental Science & Assessment, LLC and CH2M, 2017)
- MovingAhead Cultural Resources Technical Report (Heritage Research Associates and CH2M, 2017)

7.2.1. No-Build Alternative

The No-Build Alternative would not result in adverse impacts. However, it would not improve accessibility, provide enhanced connectivity, or increase reliability. It would not have the benefits associated with pedestrian and bicycle improvements.

7.2.2. Enhanced Corridor Alternative

Figures 7.2-1 and 7.2-2 illustrate the minority and low-income populations, respectively, for the River Road Corridor Enhanced Corridor Alternative. With this alternative, for most of the environmental elements there would be either no impacts or the impacts would be minor during construction and operation and would not result in substantial adverse impacts. As stated above, environmental resource analysts concluded that no, or only negligible, impacts would result from the Enhanced Corridor Alternative related to noise and vibration, air quality, geology, hazardous materials, utilities, water quality, ecosystems, cultural resources, and land use. The remainder of this analysis discusses topics where impacts could occur from the Enhanced Corridor Alternative.

Figure 7.2-1. River Road Corridor Enhanced Corridor Alternative Minority Population by Block Group

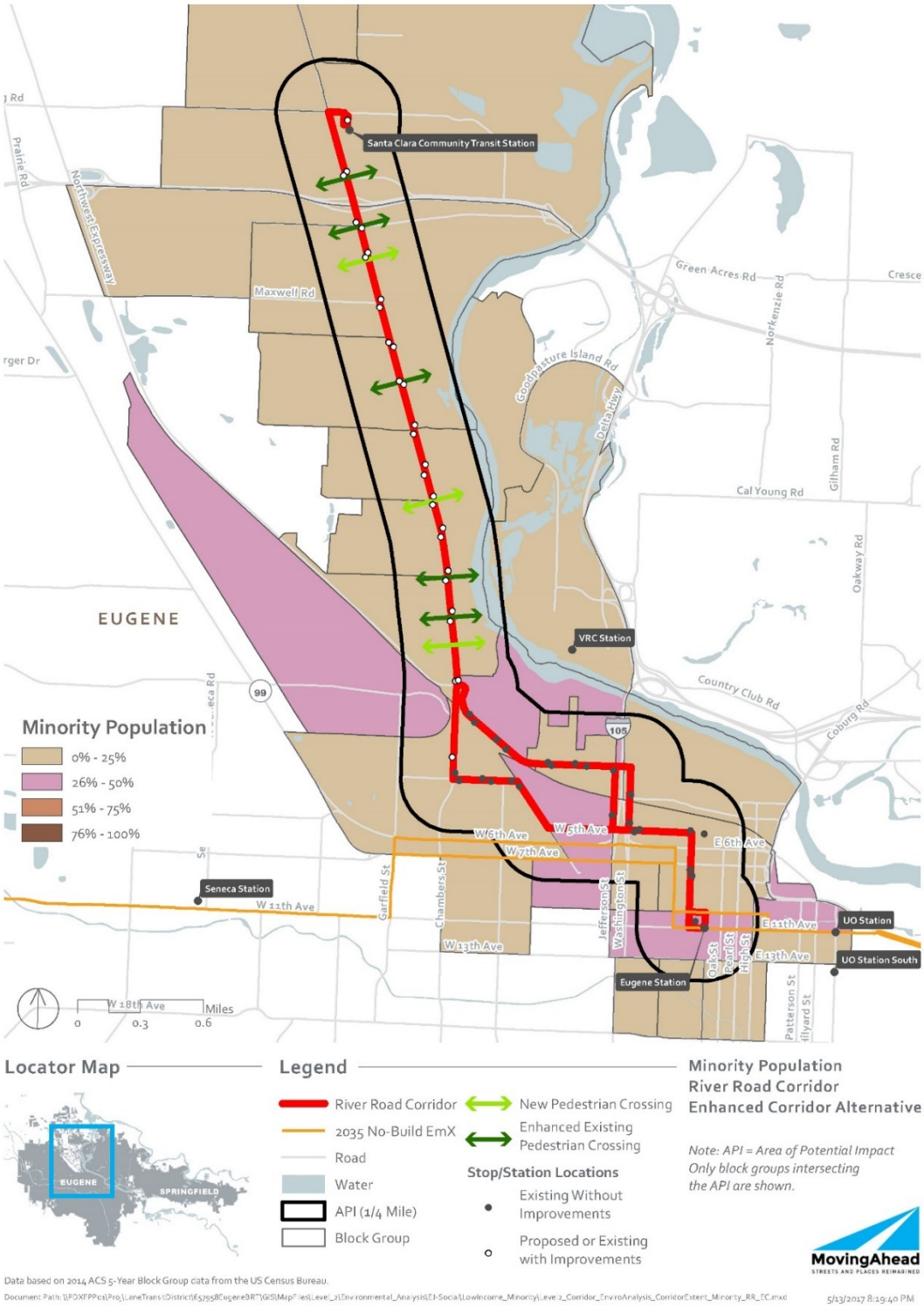
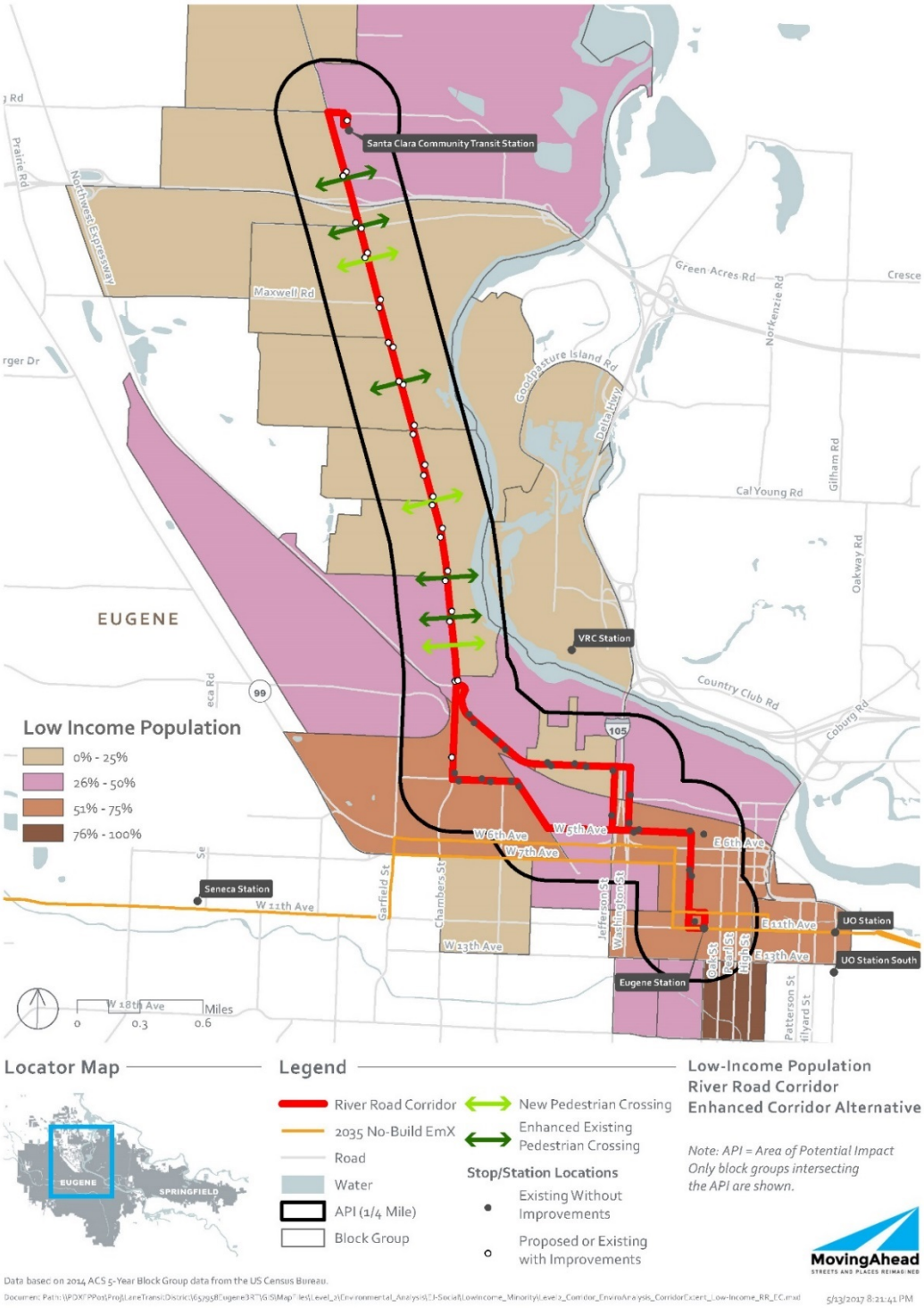


Figure 7.2-2. River Road Corridor Enhanced Corridor Alternative Low-Income Population by Block Group



7.2.2.1. Project Impacts Before and After Mitigation

For the following environmental elements, more than minor impacts before implementation of mitigation could affect minority and/or low-income populations:

- **Property Acquisitions/Land Use** – According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), mostly minor property acquisitions would be associated with the Enhanced Corridor Alternative, and no residences would be displaced. Up to four businesses could be displaced. There are five properties affected and an estimated 1.3 acres of land would be acquired and converted to a transportation-related use. Affected property owners would be compensated under the Uniform Relocation and Real Property Act of 1970, and no adverse impacts are anticipated.
- **Social/Economics** – As determined in Section 7.1 of this technical report, the Enhanced Corridor Alternative would not bisect any neighborhoods or displace any community facilities. Property acquisitions would potential affect one park (West Bank Park), but would not impact the park's functions.
  According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), up to four businesses could be displaced. They are not businesses that provide unique services to low-income or minority populations.
  According to the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), this alternative would not impact on-street parking. Although the loss of two off-street parking stalls would impact one business, this would not impede accessibility to this business. The affected business does not provide services that are unique to minority or low-income populations. Because adequate parking would remain, no adverse impacts are anticipated. Turning restrictions that would change access to properties would not result in any adverse impacts because alternate access would be maintained.
  The *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g) supports that development in stop areas could include new employment opportunities. Although this would be beneficial, new development or redevelopment in stop areas could increase property values, raising rents or real estate property taxes, which could affect low-income populations. The City of Eugene has affordable housing policies that could minimize this potential negative effect.
- **Visual/Street Trees** – The *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) reports that the River Road Corridor Enhanced Corridor Alternative potentially would remove up 13 medium and large street trees. Compatible younger trees would replace those that were removed. The loss of mature trees would be visible but would not affect the overall character of the neighborhood. Although the replacement trees would require over 15 years to reach similar maturation, because the trees would be replaced, no adverse impacts are anticipated on community character (*MovingAhead Visual and Aesthetic Resources Technical Report* [CH2M, 2017l]).

Populations living and working in the area might experience noise, dust, and detours for relatively short periods. These short-term impacts, after mitigation, would not be great enough to negatively affect the businesses and adjacent uses. To address construction impacts, LTD would implement mitigation measures and construction-related best management practices (see Chapter 11 of this report). These short-term construction impacts would not result lead to long-term substantial impacts. Minority and low-income populations would not experience impacts that would materially differ from those that non-minority and non-low-income populations would experience.

Construction would also provide temporary economic benefits, including the creation of construction jobs and other expenditures related to construction spending.

While all populations would experience slight changes, none of the impacts would be predominantly borne by a minority or low-income population; the identified impacts would not be greater in magnitude than the impacts that the non-minority and non-low-income populations within the API would experience; and the River Road Corridor Enhanced Corridor Alternative would not adversely impact community facilities especially important to minority and low-income populations.

7.2.2.2. Project Benefits

The River Road Corridor Enhanced Corridor Alternative would provide more frequent, reliable transit service to this area, which has the highest proportion of low-income and minority populations in the City of Eugene. Enhanced accessibility would provide low-income and minority populations reliable and affordable connections with the business district, where transit connections would also link them to several other communities and employment centers.

The Enhanced Corridor Alternative would benefit transit-dependent persons and persons with disabilities more than others. This alternative would provide three new and five enhanced pedestrian crossings and improvements to bicycle and pedestrian mobility that would help the mobility opportunities for all populations.

The Enhanced Corridor Alternative would generate several transportation benefits for the traveling public as a whole, including minority and low-income populations. These benefits would include the following:

- Improving transit accessibility and reliability. This alternative would improve transit travel times and increase accessibility and reliability to 76 community facilities within the corridor. It would also provide connections with the WEEE and other transit services within downtown Eugene to reach the Central Business District and other regional employment centers.
- Providing better access and improving safety on the local roadway system around the study area from a variety of local roadway modifications.
- Supplying pedestrian improvements, including new sidewalks, improved sidewalks, and new or upgraded crossings. Improvements would meet ADA standards.
- Providing bicycle improvements, including new and/or improved bicycle facilities.

7.2.2.3. Environmental Justice Conclusion

Because the River Road Corridor Enhanced Corridor Alternative would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate impacts on minority or low-income populations are anticipated.

7.2.3. EmX Alternative

Figures 7.2-3 and 7.2-4 illustrate the minority and low-income populations, respectively, for the River Road Corridor EmX Alternative. With this alternative, for most of the environmental elements, there would be either no impacts or the impacts would be minor during construction and operation and would not result in substantial adverse impacts. As stated above, environmental resource analysts concluded that no, or only negligible, impacts would result from the EmX Alternative related to air quality, geology, utilities, water quality, ecosystems, cultural resources, and land use. The remainder of this analysis discusses topics where impacts could occur from the EmX Alternative.

Figure 7.2-3. River Road Corridor EmX Alternative Minority Population by Block Group

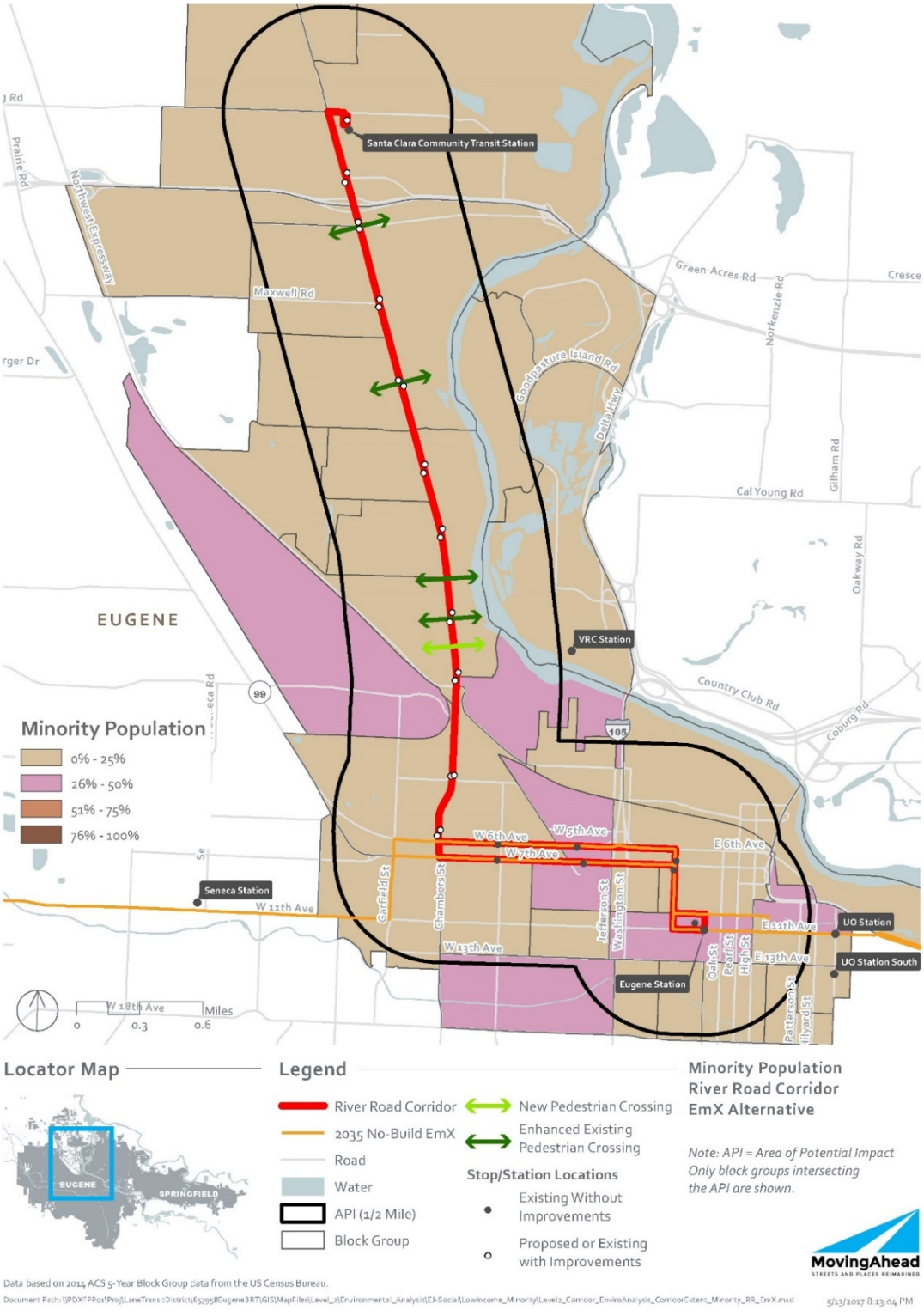
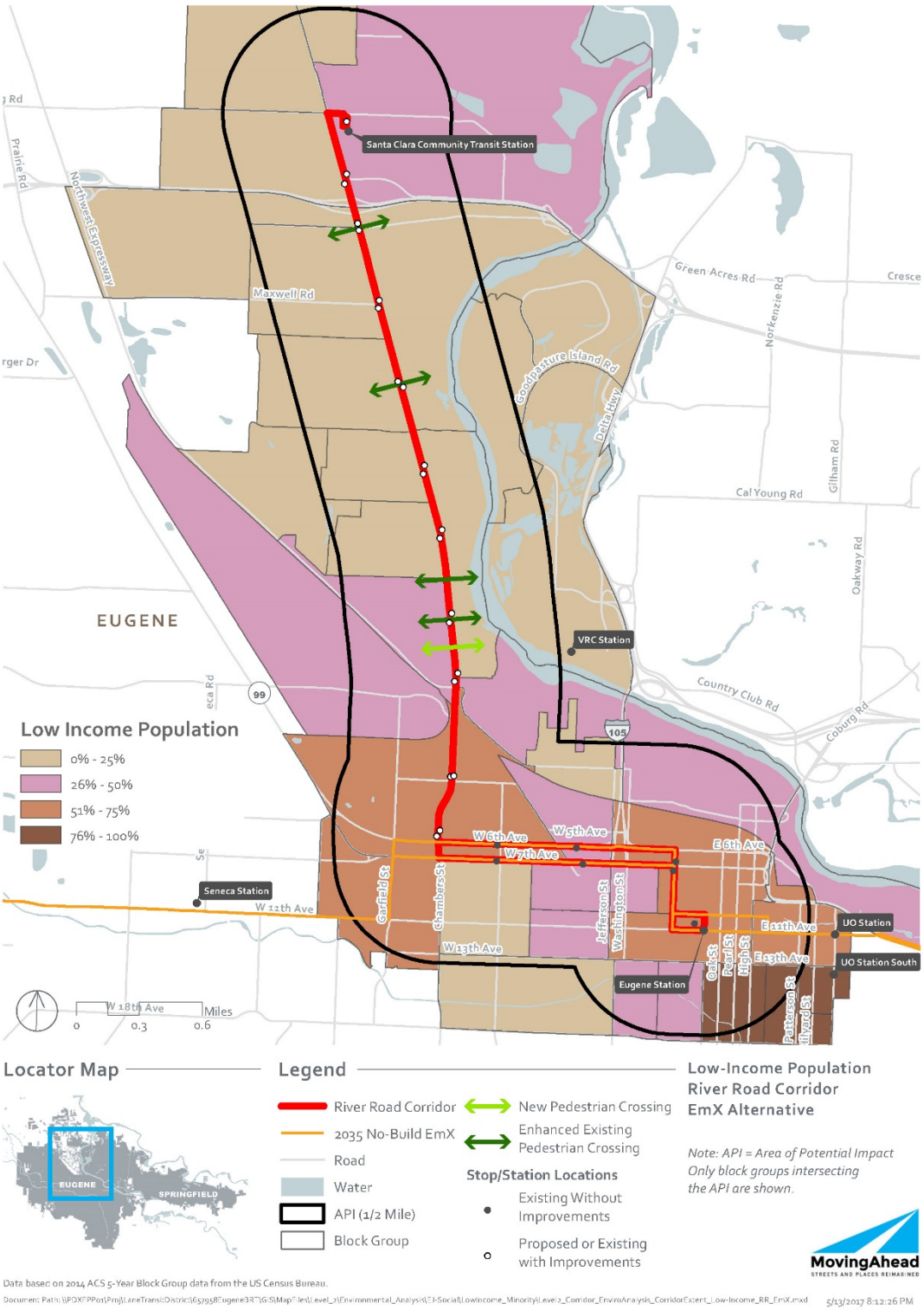


Figure 7.2-4. River Road Corridor EmX Alternative Low-Income Population by Block Group



7.2.3.1. Project Impacts Before and After Mitigation

For the following environmental elements, more than minor impacts before implementation of mitigation and could affect minority and/or low-income populations.

- **Noise –** According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the River Road Corridor EmX Alternative could have noise impacts on up to two properties. There would be no vibration impacts. Because it is expected that noise impacts could be mitigated, no adverse impacts are anticipated.
- **Property Acquisitions/Land Use** – According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), mostly minor property acquisitions would be associated with the EmX Alternative, and no residences would be displaced. This alternative would displace up to six businesses. Forty properties would be affected and an estimated 2.2 acres of land would be acquired and converted to a transportation-related use. Affected property owners would be compensated under the Uniform Relocation and Real Property Act of 1970, and no adverse impacts are anticipated.
- **Social/Economics** – As determined in Section 7.1 of this technical report, the River Road Corridor EmX Alternative would not bisection any neighborhoods or displace any community facilities. According to the *MovingAhead Parklands, Recreation Areas, and Section 6(f) Technical Report* (CH2M, 2017h), the EmX Alternative would potentially acquire property from one park (West Bank Park), but would not impact the park's value or recreational functions.
  According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), up to six businesses could be displaced. They are not businesses that provide unique services to low-income or minority populations. According to the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the EmX Alternative would have no permanent impacts to on-street parking. However, the loss of 31 off-street parking spaces would impact 7 businesses. This reduction would not impede accessibility to these businesses. LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation. None of the affected businesses provides services that are unique to minority or low-income populations. Because there is adequate parking remaining, no adverse impacts are anticipated. Turning restrictions would not result in any adverse impacts to businesses because alternate access would be maintained.
  Development in station areas could include new employment opportunities, which would be beneficial, but could also result in increases in rent or real estate property taxes that could affect low-income populations. Additionally, new development or redevelopment in station areas could have a negative effect on residents, especially those who rent, if property values increase and rents rise. The City of Eugene has affordable housing policies that could minimize this potential negative effect.
- **Visual/Street Trees** - *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) reports that the River Road Corridor EmX Alternative potentially would remove 132 street trees. Compatible younger trees would replace those removed. Although the replacement trees would require over 15 years to reach similar maturation as the existing trees, because the trees would be replaced, no adverse impacts are anticipated on community character (*MovingAhead Visual and Aesthetic Resources Technical Report* [CH2M, 2017l]).
- **Hazardous Materials** – The *MovingAhead Hazardous Materials Technical Report* (CH2M. 2017f) identifies one hazardous material site that poses a high risk (potential to require additional

hazardous material clean-up) due to the nature of the contaminants. However, with the implementation of best management practices and mitigation, no adverse impacts are anticipated.

Most River Road Corridor EmX Alternative adverse impacts would occur during construction. They would be the same as, although slightly more intense than, those with the Enhanced Corridor Alternative. These impacts would be limited in duration. Implementing the proposed mitigation measures would further reduce these impacts, and no adverse impacts would result.

To address construction impacts, LTD would implement mitigation measures and construction-related best management practices (see Chapter 11 of this report). Construction impacts would be short-term in nature and would not result in long-term substantial impacts. Minority and low-income populations would not experience impacts that would materially differ from those non-minority and non-low-income populations would experience.

Construction would also provide temporary economic benefits, including the creation of construction jobs and other expenditures related to construction spending.

While all populations would experience slight changes, none of the impacts would be predominantly borne by a minority or low-income population; the identified impacts would not be greater in magnitude than the impacts that the non-minority and non-low-income populations within the API would experience; and this alternative would not adversely impact community facilities especially important to minority and low-income populations.

7.2.3.2. Project Benefits

The River Road Corridor EmX Alternative would yield the same benefits as those listed for the Enhanced Corridor Alternative. In addition, it would incorporate the EmX Alternative pedestrian and bicycle improvements (including buffered bicycle lanes and increased crossing opportunities) and would improve safety. The BAT lanes would also improve vehicle safety.

Compared the Enhanced Corridor Alternative, the EmX Alternative would provide additional reliability and frequency of service to 119 community facilities within the corridor and employment centers of the Central Business District. With transit connections (such as the WEEE and other planned transit investments), minority and low-income persons would receive enhanced accessibility to multiple regional employment centers. However, the stations would be farther apart and would have fewer pedestrian crossing improvements than with the Enhanced Corridor Alternative. The EmX Alternative would travel along W. 6th and W. 7th Avenues, which are roads with higher proportions of low-income and minority populations compared to the route that the Enhanced Corridor Alternative would follow in downtown Eugene.

7.2.3.3. Environmental Justice Conclusion

Because the River Road Corridor EmX Alternative would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate impacts on minority or low-income populations are anticipated.

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8. 30th Avenue to Lane Community College Corridor Environmental Consequences

8.1. Long-term Direct Impacts

8.1.1. Neighborhoods

Transportation projects have the potential to affect the communities they travel through by adding or changing travel patterns, affecting accessibility to services, and sometimes disrupting community cohesion. People who work and live in a neighborhood can also be affected by changes in noise levels, views, or physical changes, and changes in their walking environment. This section reviews how each 30th Avenue to LCC Corridor alternative would impact the neighborhood environment. This analysis groups impacts by physical impacts (property acquisition and barriers); changes in community character (removal of trees and visual effects); transportation and accessibility; and noise and vibration.

8.1.1.1. No-Build Alternative

The No-Build Alternative would not result in property acquisition, removal of trees, or visual impacts. It would not improve accessibility, connectivity, or reliability. There would be no enhanced pedestrian and bicycle crossings to benefit the communities and travelers. There would be no noise or vibration impact. In addition, construction would not interfere with community and neighborhood activities.

8.1.1.2. Enhanced Corridor Alternative

Property acquisition/physical impacts. As discussed in the *MovingAhead Acquisitions and Displacements Technical Repor*t (CH2M, 2017a), the 30th Avenue to LCC Corridor Enhanced Corridor Alternative would not result in the full acquisition of any properties or the displacement of any residences or businesses. The only required property acquisitions would be minor; these acquisitions would allow the existing land use to remain, would not affect the overall neighborhood, and would not impact community facilities or public services. Property acquisition would include partial acquisitions of 14 parcels (an estimated 0.4 acre of land). The enhanced pedestrian and bike lanes would not require extensive additions to the existing right of way beyond minor areas around stops. The physical changes for the Enhanced Corridor Alternative would not create barriers to interaction.

Community character (removal of trees and visual effects). According to the *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j), the 30th Avenue to LCC Corridor Enhanced Corridor Alternative potentially would remove up to 54 medium and large street trees and 2 to 4 landscape trees. Compatible younger trees would replace those that would be removed. Replacement trees would require over 15 years to reach similar maturation. The removal of trees might change the experience of the environment in the short-term for up to 11 percent of the corridor where there is a high probability of impacts to medium and large trees. However, because the trees would be replaced, no adverse impacts are anticipated on community character. The pedestrian bridge on Amazon Parkway located 650 feet south of E. 19th Avenue would be removed, eliminating an overhead visual barrier and opening views to the community. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Transportation and accessibility. As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the improvements associated with the Enhanced Corridor Alternative would increase transit accessibility and reliability to residents within the neighborhoods. The presence of 16 new or enhanced stops (of 20 total stops) would not change the overall visual setting of any neighborhoods because the 30th Avenue to LCC Corridor Enhanced Corridor Alternative is located on main arterials within an urban setting that already includes bus service. The improved reliability of the service might make transit service more attractive for users.

Two new and one upgraded **pedestrian and bicycle crossings,** as well as over 0.67 mile of new or improved sidewalks and almost 1.38 miles of improved bike facilities would provide corridor users safer access to the neighborhood parks and other destinations. This would provide an indirect benefit that might attract more persons to walk and ride bicycles. a variety of people could increase their potential for healthier lifestyles and improve the quality of their lives. These improvements also include removing a pedestrian bridge on Amazon Parkway located 650 feet south of E. 19th Avenue that does not comply with the ADA.

Noise and vibration. According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the Enhanced Corridor Alternative is not expected to have any noise or vibration impacts on residential or community facilities (using FTA criteria).

Conclusion. The 30th Avenue to LCC Corridor Enhanced Corridor Alternative would not result in negative changes in neighborhood quality, cause barriers to social interaction, or adversely affect community facilities because the project would be located within the existing roadway right of way, would maintain building access (including enhanced access to community facilities and parks), and would improve pedestrian and bicycle facilities. In addition, the project would increase connectivity to other transit connections in the downtown area, including the WEEE.

8.1.1.3. EmX Alternative

Property acquisition/physical impacts. As discussed in the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the 30th Avenue to LCC Corridor EmX Alternative would not result in the full acquisition of any properties or displacement of any residences or businesses. The only required property acquisitions would be minor. This would allow the existing land uses to remain, would not affect the overall neighborhood, and would not impact community facilities or public services. Property acquisition would include partial acquisitions of 20 parcels (an estimated 0.6 acre of land). The enhanced pedestrian and bike lanes would not require extensive additions to the existing right of way beyond minor areas of station locations. Therefore, barriers to interaction would not be created.

Community character (removal of trees and visual effects). According to the *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) and the *MovingAhead Visual and Aesthetic Resources Technical Report* (CH2M, 2017l), the 30th Avenue to LCC Corridor EmX Alternative potentially would remove 102 landscape trees. All trees would be replaced with compatible younger trees. Replacement trees would require over 15 years to reach similar maturation. The removal of trees might change the experience of the environment in the short-term for under 17 percent of the corridor where there is a high probability of impacts to medium and large trees. However, because the trees would be replaced, no adverse impacts are anticipated on community character. The pedestrian bridge on Amazon Parkway located 650 feet south of E. 19th Avenue would be removed, eliminating an overhead visual barrier and opening views to the community. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this

addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Transportation and accessibility. As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the improvements associated with the EmX Alternative would increase transit accessibility and reliability to residents within the neighborhoods. The presence of 20 new or enhanced stations (of 22 total stations) would not change the overall visual setting of any neighborhoods because the 30th Avenue to LCC Corridor EmX Alternative is located on main arterials within an urban setting that already includes bus service. The improved reliability and reduced headways, and the permanence and identity branding of the service would reduce the need for users to worry about schedules and lengthy waiting periods at stations (concerns often associated with less frequent transit service). The result would be a more predictable, reliable system that would be stress-free. This would attract strong ridership.

The EmX Alternative would use existing roadways and place bike lanes behind some of the stations to avoid conflicts and improve safety among transportation modes. This alternative would not create barriers within the roadway. Ten new and one upgraded **pedestrian and bicycle crossings**, over 0.55 mile of new or improved sidewalks, and almost 1.38 miles of improved bike facilities would provide corridor users with safer access to the neighborhood parks and other destinations. This would provide an indirect benefit that might attract more persons to walk and ride bicycles. A variety of people would increase their potential for healthier lifestyles and improve the quality of their lives. These indirect impacts are discussed in Chapter 12 of this technical report. These improvements would also include removing a pedestrian bridge on Amazon Parkway located 650 feet south of E. 19th Avenue that does not comply with the ADA.

Noise and vibration. According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the EmX Alternative could have noise impacts on up to nine properties, but it is expected these could be mitigated. No vibration impacts are expected.

Conclusion. The 30th Avenue to LCC Corridor EmX Alternative would not result in negative changes in neighborhood quality, cause barriers to social interaction, or adversely affect community facilities because the project would be located primarily within the existing roadway right of way, would maintain building access (including enhanced access to community facilities and parks), and would improve pedestrian and bicycle facilities. In addition, the project would increase connectivity to other transit connections in the downtown area, including the WEEE.

8.1.2. Community Facilities and Public Services

In general, transit projects are beneficial because they enhance accessibility to and from community facilities and public services. Emergency services can benefit from improved transportation circulation and, when, needed, they can advantage of the dedicated transit lanes to drive around congested areas. In general, adverse impacts are limited to property acquisitions or changes in ingress and egress. In some cases, transit could impact intersection operations. See the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b) for more information about intersection impacts.

8.1.2.1. No-Build Alternative

The No-Build Alternative would not result in adverse impacts on community or public facilities, would not improve accessibility and reliability to these services, and would not improve transportation safety that could reduce the number of potential conflicts among pedestrians, bicycles, and motorized vehicles.

8.1.2.2. Enhanced Corridor Alternative

Community Facilities. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the 30th Avenue to LCC Corridor Enhanced Corridor Alternative would result in minor partial acquisition of the South Eugene High School, Lane Community College, the Early College and Career Options, the Amazon Community Center, the Hilyard Community Center, and a post office. It would require partial acquisition of the Proposed Civic Stadium Park (privately owned facility) and Amazon Park. None of these property impacts would affect the functions and values of these properties. The Enhanced Corridor Alternative would decrease transit service frequency in this corridor, which would reduce accessibility to community facilities for their patrons.

According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the operation of the Enhanced Corridor Alternative after mitigation would not result in noise and vibration impacts on sensitive receptors such as residences, churches, concert halls, or other sensitive community facilities.

Emergency services. Emergency service providers did not foresee major issues of concern related to expanded transit services or the proposed improvements (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). Transit operators would need to yield to police sirens because police are not able to pre-empt traffic signals (as fire engine vehicles can). Improved pedestrian and bicycle facilities that provide refuge would improve safety.

Emergency service providers would have an opportunity to review more detailed designs and would work with Lane Transit District to address issues in the future (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). The Enhanced Corridor Alternative would not provide the dedicated transit lane advantages of the EmX Alternative. In general, compared to general purpose lanes, emergency service providers have fewer minor collisions when transit-only lanes are implemented.

8.1.2.3. EmX Alternative

Community Facilities. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the 30th Avenue to LCC Corridor EmX Alternative would result in minor partial acquisition from the Camas Ridge Elementary School in addition to acquiring property from South Eugene High School, Lane Community College, the Early College and Career Options, the Amazon Community Center, Hilyard Community Center, and a post office. It would require partial acquisition of the Proposed Civic Stadium Park (privately owned facility) and Amazon Park. None of these property impacts would affect the functions and values of these properties. In addition, these community and recreational uses would benefit from improved accessibility.

According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the operation of the EmX Alternative, after mitigation, would not result in noise and vibration impacts on sensitive receptors such as residences, churches, concert halls, or other sensitive community facilities.

Emergency services. Emergency service providers did not foresee major issues of concern related to expanded transit services or the proposed improvements (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). Transit operators would need to yield to police sirens because police are not able to pre-empt traffic signals (as fire engine vehicles can). Improved pedestrian and bicycle facilities that provide refuge would improve safety.

Emergency service providers would have an opportunity to review more detailed designs and would work with Lane Transit District to address issues in the future (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). The EmX Alternative would provide dedicated transit lanes that would provide emergency services advantages in responding to emergencies. And, compared to general purpose lanes, emergency service providers have fewer minor collisions when transit-only lanes are implemented.

8.1.3. Economics

Transportation projects can change access, travel patterns, property conditions, jobs, and the tax base, all of which could affect the local and regional economies.

8.1.3.1. No-Build Alternative

The No-Build Alternative would not result in economic impacts. Residents, employees, and visitors would not benefit from the interconnected transportation network that the 30th Avenue to LCC Corridor transit improvements would provide.

8.1.3.2. Enhanced Corridor Alternative

Property acquisition. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), there would be no direct impacts with regard to economics because no businesses would be displaced. As described in Section 8.1.1, the 30th Avenue to LCC Corridor Enhanced Corridor Alternative would result in partial acquisitions of 14 parcels (an estimated 0.4 acre of land). This alternative would impact six fewer parcels than the 30th Avenue to LCC Corridor EmX Alternative. This total represents six commercial and industrial parcels, six public and institutional parcels, one residential parcel, and one vacant parcel.

Property taxes. As described under Affected Environment (Section 5.4.3, City of Eugene Tax Base), property owners pay annual property taxes of between $10.06 and $24.83 per $1,000 of their property value. Assuming a land value of $100,000 per acre, converting 0.4 acre to transportation-related use might reduce tax collection by $402 to $993 in 2016 fiscal year dollars.

Circulation, access, and parking effects on businesses. The Enhanced Corridor Alternative would decrease transit service frequency in this corridor, which could negatively affect businesses by making access less convenient for customers. This change might reduce ridership and overall accessibility to businesses. According to the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the 30th Avenue to LCC Corridor Enhanced Corridor Alternative would not impact off-street parking, access, or circulation. The net loss of 40 on-street parking stalls on Oak Street and on Pearl Street would affect businesses on these streets. However, a survey found the parking utilization rate for the 127 existing stalls on these streets was approximately 50 percent on an average weekday. This indicates that some parking loss would not overly affect parking needs. The revenue loss from these stalls would result in a loss of revenue of approximately $79,200 dollars per year, given that meters in this area average approximately 50 percent utilization rate. No other impacts on parking or circulation would result from the 30th Avenue to LCC Corridor Enhanced Corridor Alternative. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Employment and employees. The Enhanced Corridor Alternative would enhance accessibility to employment locations along the 30th Avenue to LCC Corridor's neighborhoods and the downtown business district for both current and prospective employees. In addition, the estimated capital cost of the 30th Avenue to LCC Corridor Enhanced Corridor Alternative would be $21 million. This would create construction jobs that would result in other expenditures in the corridor, increasing tax revenue during construction.

Development potential. Development potential is an importance economic indicator; however, this effect is considered an indirect impact and therefore is discussed under Chapter 12.

8.1.3.3. EmX Alternative

Property acquisition. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), there would be no direct impacts to economics because no businesses would be displaced. The 30th Avenue to LCC Corridor EmX Alternative would result in partial acquisitions of 20 parcels (an estimated 0.6 acre of land). This alternative would impact six more parcels than the 30th Avenue to LCC Corridor Enhanced Corridor Alternative. Of the 20 affected parcels, 10 would be commercial and industrial parcels, 7 would be public and institutional parcels, 2 would be residential parcels, and 1 would be a vacant parcel.

Property taxes. As described under Affected Environment (Section 5.4.3, City of Eugene Tax Base), property owners pay annual property taxes of between $10.06 and $24.83 per $1,000 of their property value. Assuming a land value of $100,000 per acre, converting 0.6 acre to transportation-related use might reduce tax collection by $603 to $1,489 in 2016 fiscal year dollars.

Circulation, access, and parking effects on businesses. According to the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the 30th Avenue to LCC Corridor EmX Alternative would also require changes or restrictions to three business driveways and two residential driveways. These modifications would be evaluated and potentially avoided during future phases of design development. The net loss of 51 on-street parking stalls on Oak Street and on Pearl Street would affect businesses on these streets. However, a survey found the parking utilization rate for the 127 existing stalls on these streets was approximately 50 percent on an average weekday, indicating that some parking loss would not overly affect parking needs. The revenue loss from these stalls would result in a loss of revenue of approximately $100,980 dollars per year of potential revenue, at the current utilization rate of approximately 50 percent. No other impacts on parking or circulation would result from the 30th Avenue to LCC Corridor EmX Alternative. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Employment and employees. The EmX Alternative would enhance accessibility to employment locations along the 30th Avenue to LCC Corridor's neighborhoods and the downtown business district for both current and prospective employees. The estimated capital cost of the 30th Avenue to LCC Corridor EmX Alternative would be $53 million. This would create construction jobs that would result in other expenditures in the corridor, increasing tax revenue during construction. This alternative would create more construction jobs than the Enhanced Corridor Alternative.

Development potential. Development potential is an importance economic indicator; however, this effect is considered an indirect impact and therefore is discussed under Chapter 12.

8.2. Environmental Justice

This section analyzes whether any of the environmental impacts during operation and construction of the 30th Avenue to LCC Corridor alternatives would result in adverse impacts on minority or low-income populations. This section also determines whether those impacts would disproportionately affect minority and low-income populations. USDOT Order 5610.2(a) (USDOT, 2012, May 10) and Circular FTA C 4703.1 (FTA, 2012, August 15) provide guidance on how to evaluate and address environmental justice impacts on minority and low-income populations. Both documents require that the assessment of "disproportionate impacts" consider (a) impacts, (b) mitigation, and (c) any offsetting benefits that might also result from the project. For this analysis, impacts are listed. However, the determination of whether those impacts would disproportionately affect minority and low-income populations was considered assuming that mitigation measures would be applied. In addition, project benefits were considered when determining the potential for disproportionate impacts on minority and low-income populations.

Project impacts fall into one or more of the following categories: (1) project impacts would be positive; (2) no project impacts are anticipated or impacts would be minor (measurable, but not perceptible and/or localized); (3) project impacts would be more than minor, but with the implementation of mitigation, minority and low-income populations would not experience impacts that would materially differ from the impacts on those who are members of non-minority and non-low-income populations.

Technical reports for each environmental element prepared for the MovingAhead Project were reviewed to determine the types and the severity of impacts before and after mitigation on the 30th Avenue to LCC Corridor build alternatives (Enhanced Corridor and EmX Alternatives). Those environmental resources that found no, or only negligible, environmental justice-associated impacts include air quality, geology, hazardous materials, utilities, water quality, ecosystems, and cultural resources. The following technical reports provide supporting documentation for these conclusions:

- MovingAhead Air Quality Technical Report (MMA and CH2M, 2017a)
- MovingAhead Geology and Seismic Technical Report (CH2M, 2017e)
- MovingAhead Hazardous Materials Technical Report (CH2M, 2017f)
- MovingAhead Utilities Technical Report (CH2M, 2017k)
- MovingAhead Water Quality, Floodplain, and Hydrology Technical Report (CH2M, 2017m)
- *MovingAhead Ecosystems Technical Report* (Environmental Science & Assessment, LLC and CH2M, 2017)
- MovingAhead Cultural Resources Technical Report (Heritage Research Associates and CH2M, 2017)

8.2.1. No-Build Alternative

The No-Build Alternative would not result in adverse impacts. However, it would not improve accessibility, provide enhanced connectivity, or increase reliability. It would not have the benefits associated with pedestrian and bicycle improvements (including no new crossing of the railroad corridor).

8.2.2. Enhanced Corridor Alternative

Figures 8.2-1 and 8.2-2 illustrate the minority and low-income populations, respectively, for the 30th Avenue to LCC Corridor Enhanced Corridor Alternative. With this alternative, for most of the environmental elements there would be either no impacts or the impacts would be minor during construction and operation and would not result in substantial adverse impacts. As stated above,

environmental resource analysts concluded that no, or only negligible, impacts would result from the Enhanced Corridor Alternative related to noise and vibration, air quality, geology, hazardous materials, utilities, water quality, ecosystems, and cultural resources. The remainder of this analysis discusses topics where impacts could occur from the Enhanced Corridor Alternative.

8.2.2.1. Project Impacts Before and After Mitigation

For the following environmental elements, more than minor impacts before implementation of mitigation could affect minority and/or low-income populations:

- **Property Acquisitions/Land Use** – According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), only minor property acquisitions would be associated with the Enhanced Corridor Alternative, and no residences or businesses would be displaced. This alternative could affect 14 properties and an estimated 0.4 acre of land would be acquired and converted to a transportation-related use. Affected property owners would be compensated under the Uniform Relocation and Real Property Act of 1970, and no adverse impacts are anticipated.
- **Social/Economics** – As determined in Section 8.1 of this technical report, the Enhanced Corridor Alternative would not bisect any neighborhoods or displace any community facilities. Property acquisitions would potentially affect one park (Amazon Park), but would not affect the park's value or recreational functions.
  The Enhanced Corridor Alternative would not displace businesses or employees (*MovingAhead Acquisitions and Displacements Technical Report* [CH2M, 2017a]). The *MovingAhead Transportation Technical Report (*DKS and CH2M, 2017b) indicates that, with this alternative, a net of 40 on-street parking spaces on two streets (Oak Street and Pearl Street) would be lost, and impacts could affect adjacent businesses.
  This would occur within a census block group with less than 25-percent minority population, but over 50-percent and, in some areas, over 75-percent low-income populations. However, on average presently, 50 percent of the on-street parking on the two streets is available at any given time. Because adequate parking would remain, no adverse impacts on businesses are anticipated. Turning restrictions that would change access to properties would not result in any adverse impacts because alternate access would be maintained. The change in transportation along Oak and Pearl Streets might require some adjustments to routines and expectations for ease of parking. However, the long-term benefits from increased transit service are anticipated to compensate for and enhance overall accessibility for this community.
  The *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g) supports that development in stop areas could include new employment opportunities. Although this would be beneficial, new development or redevelopment in stop areas could increase property values, raising rents or real estate property taxes, which could affect low-income populations. The City of Eugene has affordable housing policies that could minimize this potential negative effect.
- **Visual/Street Trees** – The *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) reports that the 30th Avenue to LCC Corridor Enhanced Corridor Alternative potentially would remove up to 54 street trees and 2 to 4 landscape trees (up to 58 total trees). Compatible younger trees would replace those that were removed. The loss of mature trees would be visible but would not affect the overall character of the neighborhood. Although the replacement trees would require over 15 years to reach similar maturation, because the trees would be replaced, no adverse impacts are anticipated on community character (*MovingAhead Visual and Aesthetic Resources Technical Report* [CH2M, 2017l]).

Figure 8.2-1. 30th Avenue to Lane Community College Corridor Enhanced Corridor Alternative Minority Population by Block Group

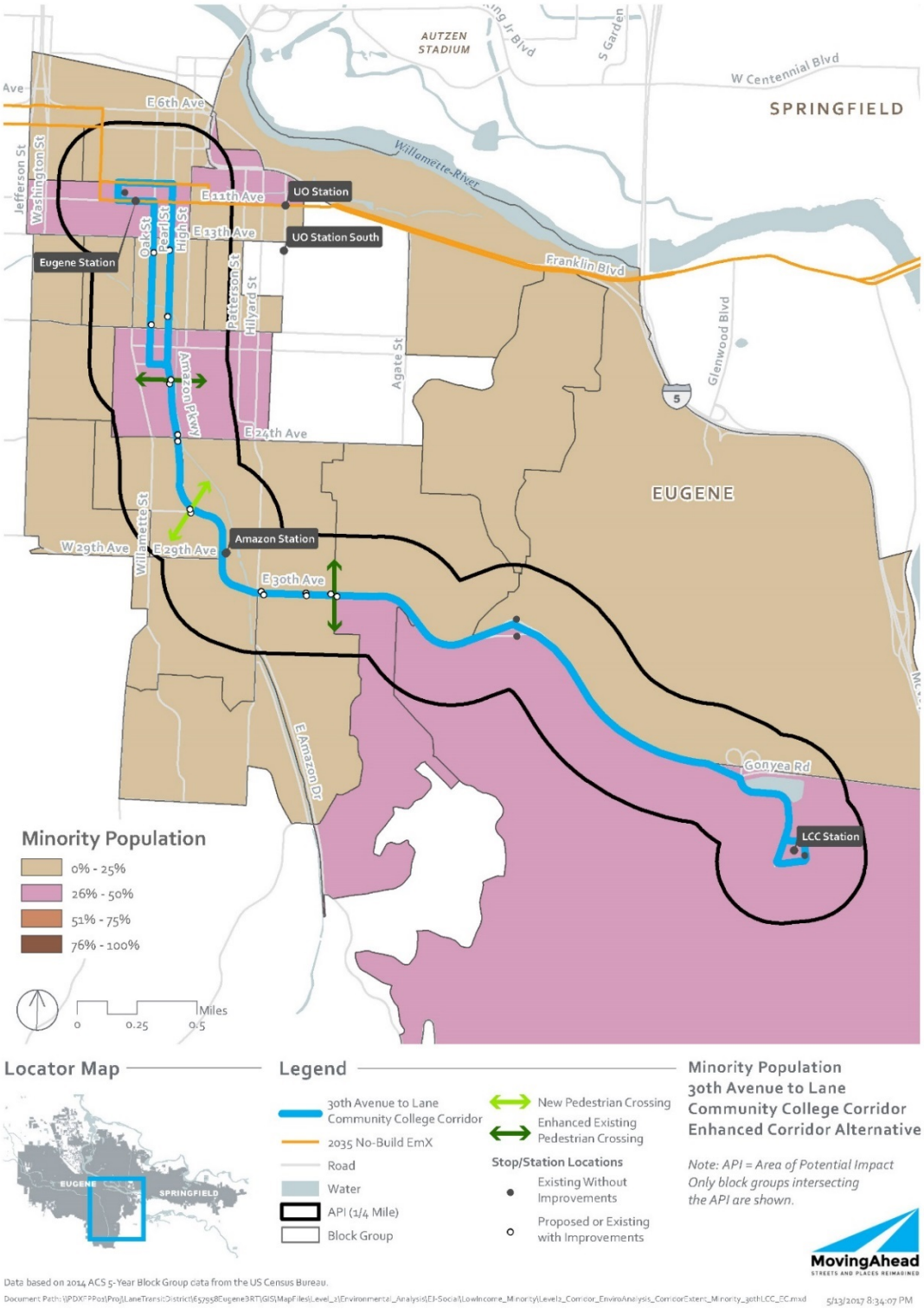
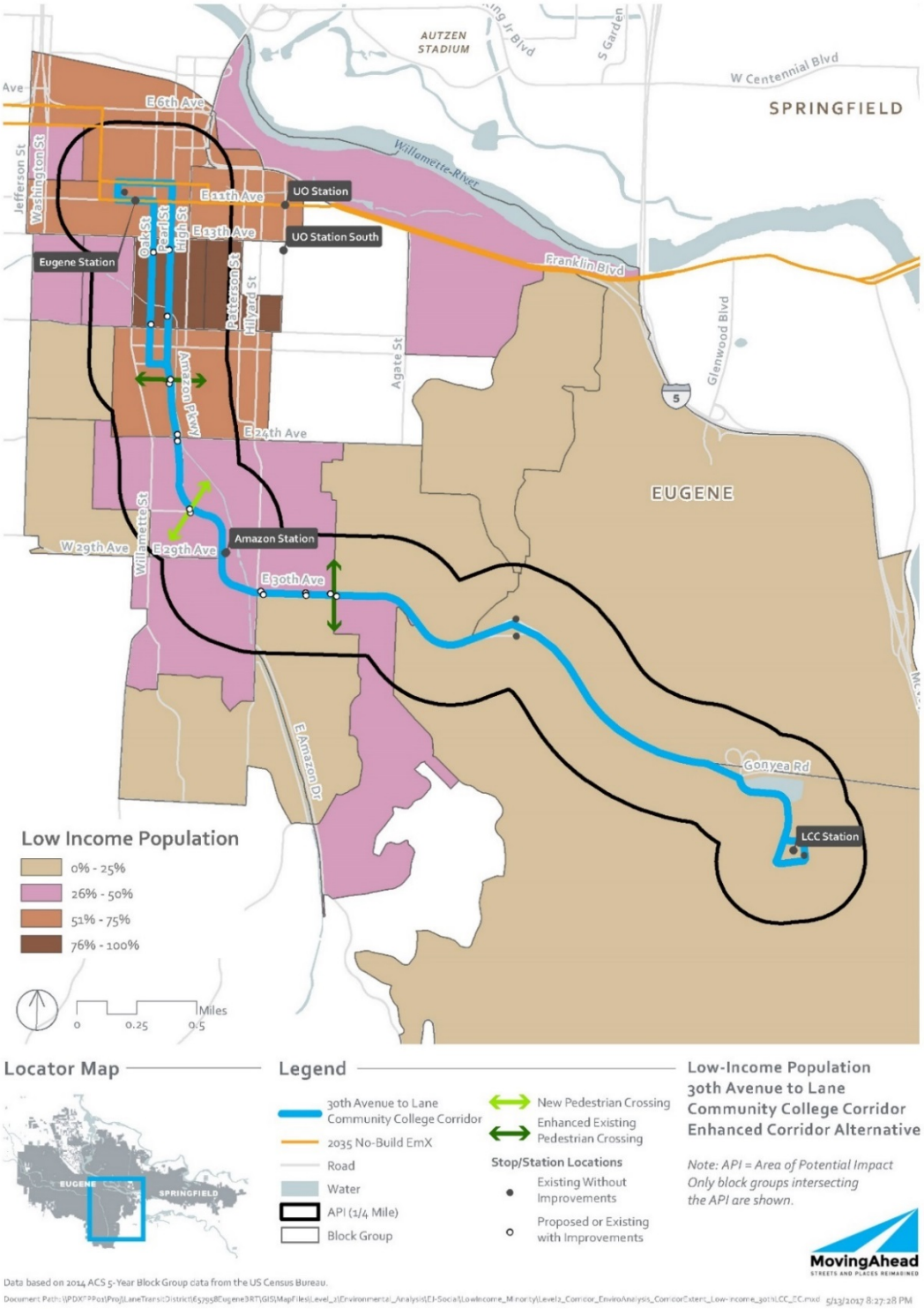


Figure 8.2-2. 30th Avenue to Lane Community College Corridor Enhanced Corridor Alternative Low-Income Population by Block Group



Other than the long-term reduction of on-street parking in an area where upwards of 50 percent to over 76 percent of the census block groups are low-income, most Enhanced Corridor Alternative impacts would occur during construction. Populations living and working in the area might experience noise, dust, and detours for relatively short periods. These short-term impacts, after mitigation, would not be great enough to negatively affect the businesses and adjacent uses. To address construction impacts, LTD would implement mitigation measures and construction-related best management practices (see Chapter 11 of this report). These short-term construction impacts would not lead to long-term substantial impacts. Minority and low-income populations would not experience impacts that would materially differ from those that non-minority and non-low-income populations would experience.

Construction would also provide temporary economic benefits, including the creation of construction jobs and other expenditures related to construction spending.

While all populations would experience slight changes, none of the impacts would be predominantly borne by a minority or low-income population; the identified impacts would not be greater in magnitude than the impacts that the non-minority and non-low-income populations within the API would experience; and the 30th Avenue to LCC Corridor Enhanced Corridor Alternative would not adversely impact community facilities especially important to minority and low-income populations.

8.2.2.2. Project Benefits

While all populations would experience slight changes from the 30th Avenue to LCC Corridor Enhanced Corridor Alternative, it is not anticipated that impacts would be predominantly borne by a minority or low-income population; the identified impacts would not be greater in magnitude than the impacts that would be experienced by the non-minority and non-low-income populations within the API; and this alternative would not result in adverse impacts on community facilities especially important to minority and low-income populations.

The Enhanced Corridor Alternative would benefit transit-dependent persons and persons with disabilities more than others. This alternative would generate several transportation benefits for the traveling public as a whole (including minority and low-income populations). These benefits would include the following:

- Improving transit accessibility and reliability. This alternative would improve transit travel times and increase accessibility and reliability to 56 community facilities within the corridor. It would also provide connections with the WEEE and other transit services within downtown Eugene to reach the Central Business District and other regional employment centers.
- Providing better access and improving safety on the local roadway system around the study area from a variety of local roadway modifications.
- Pedestrian improvements including new sidewalks, improved sidewalks, and new or upgraded crossings. Improvements would meet ADA standards.
- Bicycle improvements include new and/or improved bicycle facilities. In addition, buffered bicycle lanes and one new and two enhanced crossing opportunities would improve safety.

8.2.2.3. Environmental Justice Conclusion

Because the 30th Avenue to LCC Corridor Enhanced Corridor Alternative would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate impacts on minority or low-income populations are anticipated.

8.2.3. EmX Alternative

Figures 8.2-3 and 8.2-4 illustrate the minority and low-income populations, respectively, for the 30th Avenue to LCC Corridor EmX Alternative. With this alternative, for most of the environmental elements, there would be either no impacts or the impacts would be minor during construction and operation and would not result in substantial adverse impacts. As stated above, environmental resource analysts concluded that no, or only negligible, impacts would result from the EmX Alternative related to air quality, geology, utilities, water quality, ecosystems, and cultural resources. The remainder of this analysis discusses topics where impacts could occur from the EmX Alternative.

8.2.3.1. Project Impacts Before and After Mitigation

For the following environmental elements, more than minor impacts before implementation of mitigation could affect minority and/or low-income populations.

- **Noise –** According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the 30th Avenue to LCC Corridor EmX Alternative could have noise impacts on up to nine properties. There would not be vibration impacts. Because it is expected that noise impacts could be mitigated, no adverse impacts are anticipated.
- **Property Acquisitions/Land Use** – According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), only minor property acquisitions would be associated with the EmX Alternative, and no residences or businesses would be displaced. With this alternative, 20 properties would be affected and an estimated 0.6 acre of land would be acquired and converted to a transportation-related use. Affected property owners would be compensated under the Uniform Relocation and Real Property Act of 1970, and no adverse impacts are anticipated.
- **Social/Economics** – As determined in Section 8.1 of this technical report, the EmX Alternative would not bisect any neighborhoods or displace any community facilities. According to the *MovingAhead Parklands, Recreation Areas, and Section 6(f) Technical Report* (CH2M, 2017h), the EmX Alternative would result in minor impacts on one park (West Bank Park), but would not impact the value of the park or its recreational functions.
  Neither businesses nor employees would be displaced according to the MovingAhead Acquisitions and Displacements Technical Report (CH2M, 2017a). The MovingAhead Transportation Technical Report (DKS and CH2M, 2017b) and the Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum (CH2M, 2017n) indicate that, with the 30th Avenue to LCC Corridor EmX Alternative, a net of 51 on-street parking spaces on two streets (Oak Street and Pearl Street) would be lost, and impacts could affect adjacent businesses. This would occur within a census block group with less than 25-percent minority population, but over 50-percent and, in some areas, over 75-percent low-income populations. However, on average presently, 50 percent of the on-street parking on the two streets is available at any given time. Because adequate parking would remain, no adverse impacts on businesses are anticipated. Turning restrictions that would change access to properties would not result in any adverse impacts because alternate access would be maintained.

Figure 8.2-3. 30th Avenue to Lane Community College Corridor EmX Alternative Minority Population by Block Group

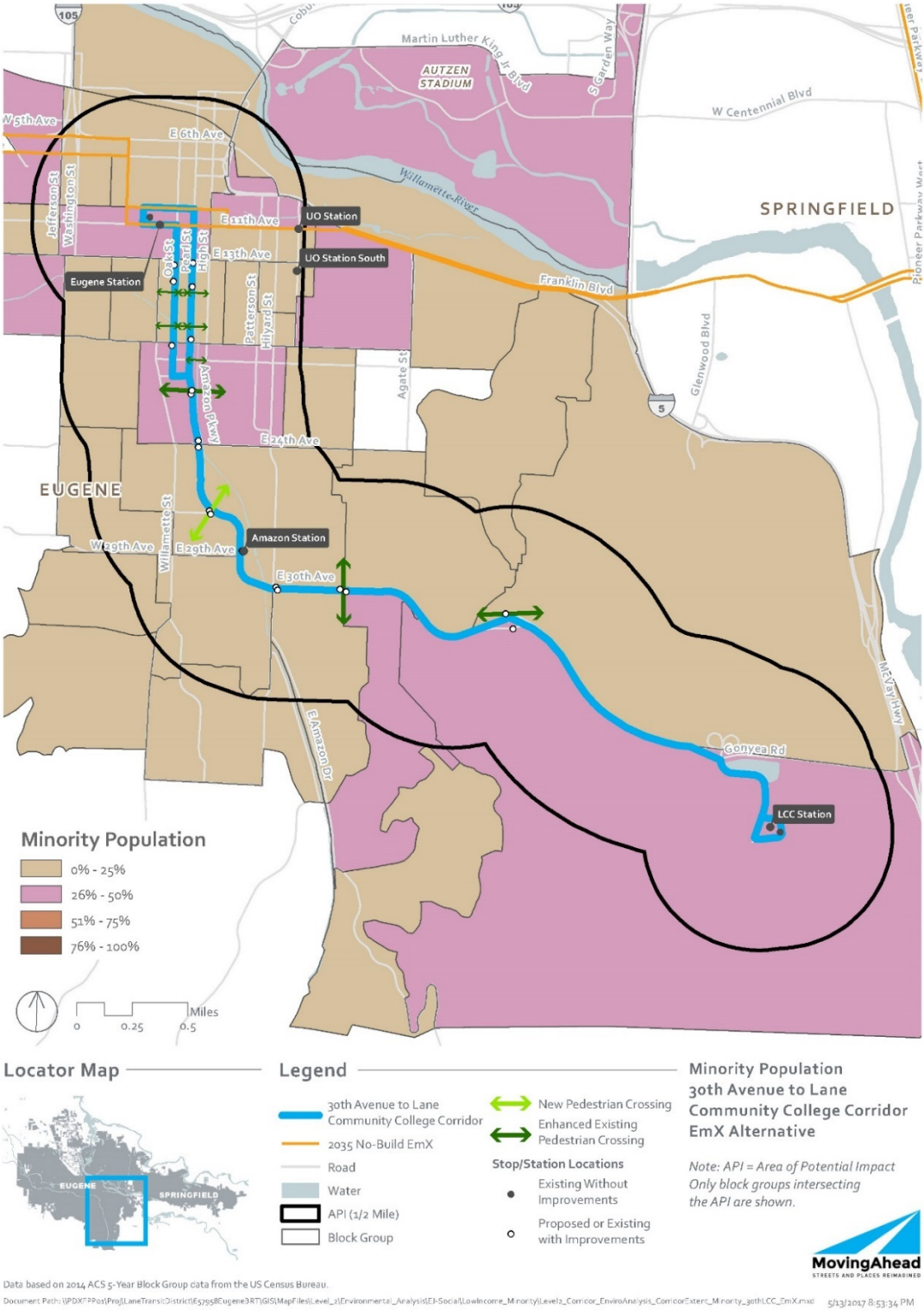
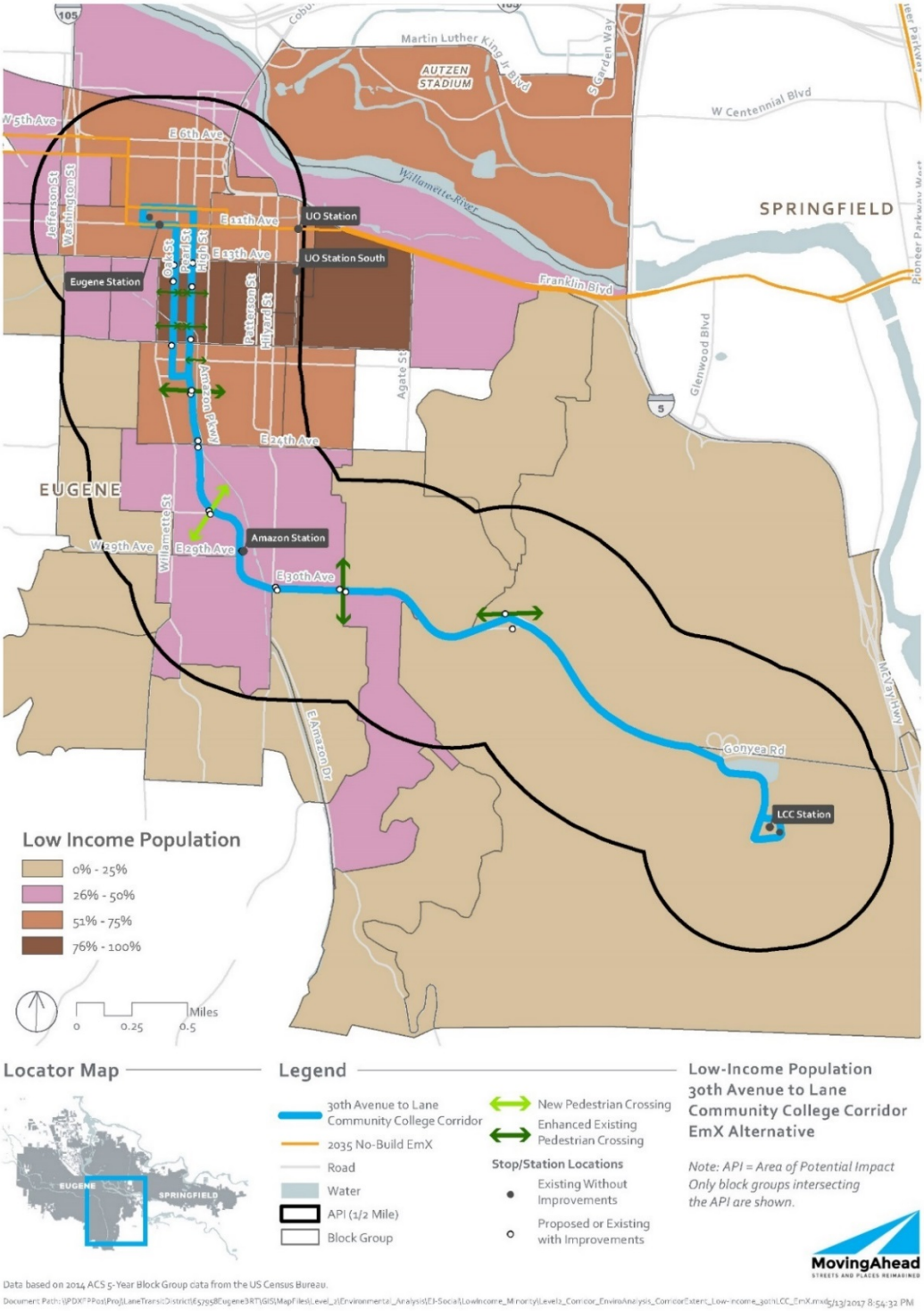


Figure 8.2-4. 30th Avenue to Lane Community College Corridor EmX Alternative Low-Income Population by Block Group



In addition, property acquisitions would remove off-street parking affecting two commercial properties, neither of which is considered a community center or a gathering place for ethnic minority groups. The change in transportation along Oak and Pearl Streets might require some adjustments to routines and expectations for ease of parking. However, the long-term benefits from increased transit service are anticipated to compensate for and enhance overall accessibility for this community.

Development in station areas could include new employment opportunities that would be beneficial (*MovingAhead Land Use and Prime Farmlands Technical Report* [CH2M 2017g]). However, such development could increase property values, raising rents or real estate property taxes, which could affect low-income populations. The City of Eugene has affordable housing policies that could minimize this potential negative effect.

- **Visual/Street Trees** – The *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) reports that the 30th Avenue to LCC Corridor EmX Alternative potentially would remove up to 98 medium and large street trees and up to four landscape trees. Compatible younger trees would replace those removed. Although the replacement trees would require over 15 years to reach similar maturation, because the trees would be replaced, no adverse impacts are anticipated on community character.
- **Hazardous Materials** – The *MovingAhead Hazardous Materials Technical Report* (CH2M, 2017f) identifies four hazardous materials sites that pose a high risk (potential to require additional hazardous material clean-up) due to the nature of the contaminants. However, with the implementation of best management practices and mitigation, no adverse impacts are anticipated.

Most 30th Avenue to LCC Corridor EmX Alternative adverse impacts would occur during construction and be the same, although slightly more intense, than those with the Enhanced Corridor Alternative. These impacts would be limited in duration. Implementing the proposed mitigation measures would further reduce these impacts, and no adverse impacts would result. Most EmX Alternative impacts would occur during construction.

Populations living and working in the area might experience noise, dust, and detours for relatively short periods. These short-term impacts, after mitigation, would not be great enough to negatively affect the businesses and adjacent uses. To address construction impacts, LTD would implement mitigation measures and construction-related best management practices (see Chapter 11 of this report). Construction impacts would be short-term in nature and would not result in long-term substantial impacts. Minority and low-income populations would not experience impacts that would materially differ from those non-minority and non-low-income populations would experience.

Construction would also provide temporary economic benefits, including the creation of construction jobs and other expenditures related to construction spending.

While all populations would experience slight changes, none of the impacts would be predominantly borne by a minority or low-income population; the identified impacts would not be greater in magnitude than the impacts that the non-minority and non-low-income populations within the API would experience; and this alternative would not adversely impact community facilities especially important to minority and low-income populations.

8.2.3.2. Project Benefits

The 30th Avenue to LCC Corridor EmX Alternative would yield the same benefits as those listed for the Enhanced Corridor Alternative. The EmX Alternative would provide additional reliability and frequency of service to 98 community facilities within the corridor and employment centers of the Central Business

District. With transit connections (such as the WEEE and other planned transit investments), minority and low-income persons would receive enhanced accessibility to multiple regional employment centers.

Compared to the Enhanced Corridor Alternative, the EmX Alternative would provide an additional three enhanced pedestrian crossings. Buffered bicycle lanes and increased crossing opportunities would improve safety. In addition, the EmX Alternative, because of its increased frequency over the Enhanced Corridor Alternative, could provide higher reliability service to a broader reach of persons, potentially providing more accessibility to larger numbers of low-income and minority persons.

8.2.3.3. Environmental Justice Conclusion

Because the 30th Avenue to LCC Corridor EmX Alternative would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate impacts on minority or low-income populations are anticipated.

9. Coburg Road Corridor Environmental Consequences

9.1. Long-term Direct Impacts

9.1.1. Neighborhoods

Transportation projects have the potential to affect the communities they travel through by adding or changing travel patterns, affecting accessibility to services, and sometimes disrupting community cohesion. People who work and live in a neighborhood can also be affected by changes in noise levels, views, or physical changes, and changes in their walking environment. This section reviews how each Coburg Road Corridor alternative would impact the neighborhood environment. This analysis groups impacts by physical impacts (property acquisition and barriers); changes in community character (removal of trees and visual effects); transportation and accessibility; and noise and vibration.

9.1.1.1. No-Build Alternative

The No-Build Alternative would not result in property acquisition, removal of trees, or visual impacts. It would not improve accessibility, connectivity, or reliability. There would be no enhanced pedestrian and bicycle crossings to benefit the communities and travelers. There would be no noise or vibration impacts. In addition, construction would not interfere with community and neighborhood activities.

9.1.1.2. Enhanced Corridor Alternative

Property acquisition/physical impacts. As discussed in the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the Coburg Road Corridor Enhanced Corridor Alternative would not result in the full acquisition of any properties or displacement of any residences or businesses. The only required property acquisitions would be minor; these acquisitions would allow the existing land use to remain and would not affect the overall neighborhood or result in impacts to community facilities or public services. Property acquisition would include partial acquisition of 47 parcels (approximately 0.8 acre of land). The enhanced pedestrian and bike lanes would not require extensive additions to the existing right of way beyond minor areas at stops. The physical changes for the Enhanced Corridor Alternative would not create barriers to interaction.

Community character (removal of trees and visual effects). According to the *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j), the Coburg Road Corridor Enhanced Corridor Alternative would remove up to three medium and large street trees that line the roads as well as up to six landscape trees. Compatible younger trees would replace those that would be removed. Replacement trees would require over 15 years to reach similar maturation. The removal of trees might change the experience of the environment in the short-term for under 2 percent of the corridor where there is a high probability of impacts to medium and large trees. However, because the trees would be replaced, no adverse impacts are anticipated on community character. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an Addendum to *MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Transportation and accessibility. As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), this Enhanced Corridor Alternative would increase transit accessibility and reliability to residents within the neighborhoods. The presence of 30 new or enhanced stops (of 35 total

stops) would not change the overall visual setting of any neighborhoods because the Coburg Road Corridor Enhanced Corridor Alternative is located on main arterials within an urban setting that already includes bus service. The improved reliability of the service might make transit service more attractive for users.

Two new and seven upgraded **pedestrian and bicycle crossings** and over 1.43 miles of new or improved sidewalks would provide corridor users safer access to the neighborhood parks and other destinations. This would provide an indirect benefit that might attract more persons to walk and ride bicycles. A variety of people could increase their potential for healthier lifestyles and improve the quality of their lives. This indirect effect is discussed in Chapter 12 of this technical report.

Noise and vibration. According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the Enhanced Corridor Alternative is not expected to have noise or vibration impacts on residences or community facilities (using FTA criteria).

Conclusion. The Coburg Road Corridor Enhanced Corridor Alternative would not result in negative changes in neighborhood quality, cause barriers to social interaction, or adversely affect community facilities because the project would be located within the existing roadway right of way, would maintain building access (including enhanced access to community facilities and parks), and would improve pedestrian and bicycle facilities. In addition, the project would increase connectivity to other transit connections in the downtown area, including the WEEE.

9.1.1.3. EmX Alternative

Property acquisition/physical impacts. As discussed in the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the Coburg Road Corridor EmX Alternative would not result in the acquisition or displacement of any residential properties. This alternative could require full acquisition of up to two commercial properties and displacement of up to two businesses due to impacts on drive-through circulation from the right of way needed for the project. Most required property acquisitions would be minor; these acquisitions would allow the existing land uses to remain, would not affect the overall neighborhood, and would not impact community facilities or public services. Under a refined design exercise, the designers found that the Coburg Road Corridor EmX Alternative would require partial acquisitions of 71 parcels and could require full acquisitions of 2 parcels (an estimated 4.0 acres of land). The enhanced pedestrian and bike lanes would not require extensive additions to the existing right of way beyond minor areas of station locations. Therefore, barriers to interaction would not be created.

Community character (removal of trees and visual effects). According to the *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) and the *MovingAhead Visual and Aesthetic Resources Technical Report* (CH2M, 2017l), the Coburg Road Corridor EmX Alternative would remove up to 13 medium and large street trees and up to 11 landscape trees. All trees would be replaced with compatible younger trees. Replacement trees would require over 15 years to reach similar maturation. The removal of trees might change the experience of the environment in the short-term for up to 29 percent of the corridor where there is a high probability of impacts to medium and large trees. However, because the trees would be replaced, no adverse impacts are anticipated on community character. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Transportation and accessibility. As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the improvements associated with the EmX Alternative would increase transit accessibility and reliability to residents within the neighborhoods. The presence of 26 new or enhanced stations (of 27 total stations) would not change the overall visual setting of any neighborhoods because the Coburg Road Corridor EmX Alternative is located on main arterials within an urban setting that already includes bus service. The improved reliability and reduced headways, and the permanence and identity branding of the service would reduce the need for users to worry about schedules and lengthy waiting periods at stations (concerns often associated with less frequent transit service). The result would be a more predictable, reliable system that would be stress-free. This would attract strong ridership.

The EmX Alternative would use existing roadways and place bike lanes behind some of the stations to avoid conflicts and improve safety among transportation modes. This alternative would not create barriers within the roadway. Two new and seven upgraded **pedestrian and bicycle crossings**, over 2.8 miles of new or improved sidewalks, and 0.36 mile of improved bicycle facilities would provide corridor users with safer access to the neighborhood parks and other destinations. This would provide an indirect benefit that might attract more persons to walk and ride bicycles. A variety of people would increase their potential for healthier lifestyles and improve the quality of their lives. These indirect impacts are discussed in Chapter 12 of this technical report.

Noise and vibration. According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the EmX Alternative could have noise impacts on up to 46 properties, but it is expected these could be mitigated. No vibration impacts are expected.

Conclusion. The Coburg Road Corridor EmX Alternative would not result in negative changes in neighborhood quality, cause barriers to social interaction, or adversely affect community facilities because the project would be located primarily within the existing roadway right of way, would maintain building access (including enhanced access to community facilities and parks), and would improve pedestrian and bicycle facilities. In addition, the project would increase connectivity to other transit connections in the downtown area, including the WEEE.

9.1.2. Community Facilities and Public Services

In general, transit projects are beneficial because they enhance accessibility to and from community and public services. Emergency services can benefit from improved transportation circulation and, when needed, they can take advantage of the dedicated transit lanes to drive around congested areas. In general, adverse impacts would be limited to property acquisitions or changes in ingress and egress. In some cases, transit could impact intersection operations. See the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b) for more information about intersection impacts.

9.1.2.1. No-Build Alternative

The No-Build Alternative would not result in adverse impacts on community or public facilities, would not provide improved accessibility and reliability to these services, and would not improve transportation safety that could reduce potential conflicts among pedestrians, bicycles, and motorized vehicles.

9.1.2.2. Enhanced Corridor Alternative

Community Facilities. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the Coburg Road Corridor Enhanced Corridor Alternative would not result in minor partial acquisition of any community or public facilities nor would it impact park resources. However, the community and recreational uses would benefit from improved accessibility.

According to the *MovingAhead Noise and Vibration Technical Report* (MMA CH2M, 2017b), the operation of the Enhanced Corridor Alternative after mitigation would not result in noise and vibration impacts on sensitive receptors such as residences, churches, concert halls, or other sensitive community facilities.

Emergency services. Emergency service providers did not foresee major issues of concern related to expanded transit services or the proposed improvements (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). Transit operators would need to yield to police sirens because police are not able to pre-empt traffic signals (as fire engine vehicles can). Improved pedestrian and bicycle facilities that provide refuge would improve safety.

Emergency service providers would have an opportunity to review more detailed designs and would work with Lane Transit District to address issues in the future (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). The Enhanced Corridor Alternative would not provide the dedicated transit lane advantages of the EmX Alternative. In general, the emergency services found fewer minor collisions when transit-only lanes are implemented.

9.1.2.3. EmX Alternative

Community Facilities. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the Coburg Road Corridor EmX Alternative would result in minor partial acquisition of church and the Sheldon Branch Library and minor acquisition along Park Blocks in downtown Eugene. However, the community and recreational uses would benefit from improved accessibility.

According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the operation of the EmX Alternative, after mitigation, would not result in noise and vibration impacts on sensitive receptors such as residences, churches, concert halls, or other sensitive community facilities.

Emergency services. Emergency service providers did not foresee major issues of concern related to expanded transit services or the proposed improvements (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). Transit operators would need to yield to police sirens because police are not able to pre-empt traffic signals (as fire engine vehicles can). Improved pedestrian and bicycle facilities that provide refuge would improve safety.

Emergency service providers would have an opportunity to review more detailed designs and would work with Lane Transit District to address issues in the future (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). The EmX Alternative would provide dedicated transit lanes that would provide emergency services advantages in responding to emergencies. And, compared to general purpose lanes, emergency service providers have fewer minor collisions when transit-only lanes are implemented.

9.1.3. Economics

Transportation projects can change access, travel patterns, property conditions, jobs, and the tax base, all of which can affect the local and regional economies.

9.1.3.1. No-Build Alternative

The No-Build Alternative would not result in economic impacts. Residents, employees, and visitors would not benefit from the interconnected transportation network that the Coburg Road Corridor transit improvements would provide.

9.1.3.2. Enhanced Corridor Alternative

Property acquisition. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), there would be no direct impacts to economics because the Coburg Road Corridor Enhanced Corridor Alternative would not displace any businesses. As described in Neighborhoods (Section 9.1.1.2), the Coburg Road Corridor Enhanced Corridor Alternative would result in partial acquisitions of 47 parcels (approximately 0.8 acre of land). This total represents 20 commercial and industrial parcels, 4 public and institutional parcels, and 23 residential parcels.

Property taxes. As described under Affected Environment (Section 5.4.3, City of Eugene Tax Base), property owners pay annual property tax of between $10.06 to $24.83 per $1,000 of their property value. Assuming a land value of $100,000 per acre, converting 1.0 acre to transportation-related use might reduce tax collection by $1,060 to $2,483 in 2016 fiscal year dollars.

Circulation, access, and parking effects on businesses. As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the Coburg Road Corridor Enhanced Corridor Alternative would result in a loss of 42 off-street parking stalls affecting 5 properties and would restrict ingresses/egresses to right-in and right-out only movements at 5 locations. Changes to ingresses/egresses have only been identified on properties with more than one access point. In addition, three left-turn movements would be modified as a condition of improving pedestrian and bicycle crossings. These changes would cause some increase in traffic delays because traffic would disperse among adjacent roadways. However, they would not adversely affect travel through and across the neighborhoods or materially impair business access. No other impacts on parking or circulation would result from the Coburg Road Corridor Enhanced Corridor Alternative. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Employment and employees. The Enhanced Corridor Alternative would enhance accessibility to employment locations along the Coburg Road Corridor's neighborhoods and the downtown business district for both current and prospective employees. In addition, the estimated capital cost of the Coburg Road Corridor Enhanced Corridor Alternative would be $41 million. This would create construction jobs that would result in other expenditures in the corridor, increasing tax revenue during construction.

Development potential. Development potential is an importance economic indicator; however, this effect is considered an indirect impact and therefore is discussed under Chapter 12.

9.1.3.3. EmX Alternative

Property acquisition. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), the Coburg Road Corridor EmX Alternative would require partial acquisitions of 71 parcels and potentially full acquisitions of 2 parcels (an estimated 4.0 acres of land) displacing up to two businesses

due to impacts to their drive-through circulation. This alternative would impact 3.2 acres of additional land and acquisitions from 26 more parcels than the Coburg Road Corridor Enhanced Corridor Alternative. This total represents partial or full acquisitions of 37 commercial and industrial parcels, 7 public and institutional parcels, and 29 residential parcels.

Property taxes. As described under Affected Environment (Section 5.4.3, City of Eugene Tax Base), property owners pay annual property taxes of between $10.06 and $24.83 per $1,000 of their property value. Assuming a land value of $100,000 per acre, converting 2.8 acres to transportation-related use might reduce tax collection by $4,024 to $9,932 in 2016 fiscal year dollars.

Circulation, access, and parking effects on businesses. According to the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the Coburg Road Corridor EmX Alternative would convert existing general purpose travel lanes to transit-only lanes. This would divert traffic to adjacent streets and would require some turning restrictions for general purpose vehicles. Left-hand turns would be restricted at eight locations to accommodate operations of the BRT corridor and to provide for the pedestrian refuge islands. The EmX Alternative would limit ingresses/egresses to right-in and right-out only movements at seven locations. A total of 109 off-street parking spaces might be removed from 16 properties. While additional minimization efforts would occur in the next phase of design, given the average use of the existing parking, it is not anticipated that the reduction in parking would risk the continued viability of the impacted businesses. The EmX Alternative would have potential business circulation impacts on two businesses. These would potentially require full acquisition of the parcels and displacement of the businesses. No other impacts on parking or circulation would result from the Coburg Road Corridor EmX Alternative. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Employment and employees. The EmX Alternative would enhance accessibility to employment locations along the Coburg Road Corridor's neighborhoods and the downtown business district for both current and prospective employees. In addition, the estimated capital cost of the Coburg Road Corridor EmX Alternative would be $110 million. Compared to the Enhanced Corridor Alternative, this would more than double the number of construction jobs created and could boost expenditures in the corridor, increasing tax revenue during construction.

Development potential. Development potential is an importance economic indicator; however, this effect is considered an indirect impact and therefore is discussed under Chapter 12.

9.2. Environmental Justice

This section analyzes whether any of the environmental impacts during operation and construction of the Coburg Road Corridor alternatives would result in adverse impacts on minority or low-income populations. This section also determines whether those impacts would disproportionately affect minority and low-income populations. USDOT Order 5610.2(a) (USDOT, 2012, May 10) and Circular FTA C 4703.1 (FTA, 2012, August 15) provide guidance on how to evaluate and address environmental justice impacts on minority and low-income populations. Both documents require that the assessment of "disproportionate impacts" consider (a) impacts, (b) mitigation, and (c) any offsetting benefits that might also result from the project. For this analysis, impacts are listed. However, the determination of whether those impacts would disproportionately affect minority and low-income populations was considered assuming that mitigation measures would be applied. In addition, project benefits were

considered when determining the potential for disproportionate impacts on minority and low-income populations.

Project impacts fall into one or more of the following categories: (1) project impacts would be positive; (2) no project impacts are anticipated or impacts would be minor (measurable, but not perceptible and/or localized); (3) project impacts would be more than minor, but with the implementation of mitigation, minority and low-income populations would not experience impacts that would materially differ from the impacts on those who are members of non-minority and non-low-income populations.

Technical reports for each environmental element prepared for the MovingAhead Project were reviewed to determine the types and severity of impacts before and after mitigation on the Coburg Road Corridor build alternatives (Enhanced Corridor and EmX Alternatives). Those environmental resources that found no, or only negligible, environmental justice-associated impacts include noise and vibration, air quality, geology, utilities, water quality, ecosystems, and cultural resources. The following technical reports provide supporting documentation for these conclusions:

- MovingAhead Noise and Vibration Technical Report (MMA and CH2M, 2017b)
- MovingAhead Air Quality Technical Report (MMA and CH2M, 2017a)
- MovingAhead Geology and Seismic Technical Report (CH2M, 2017e)
- MovingAhead Utilities Technical Report (CH2M, 2017k)
- MovingAhead Water Quality, Floodplain, and Hydrology Technical Report (CH2M, 2017m)
- *MovingAhead Ecosystems Technical Report* (Environmental Science & Assessment, LLC and CH2M, 2017)
- MovingAhead Cultural Resources Technical Report (Heritage Research Associates and CH2M, 2017)

9.2.1. No-Build Alternative

The No-Build Alternative would not result in adverse impacts. However, it would not improve accessibility, provide enhanced connectivity, or increase reliability. It would not have the benefits associated with pedestrian and bicycle improvements (including no new crossing of the railroad corridor).

9.2.2. Enhanced Corridor Alternative

Figures 9.2-1 and 9.2-2 illustrate the minority and low-income populations, respectively, for the Coburg Road Corridor Enhanced Corridor Alternative. With this alternative, for most of the environmental elements there would be either no impacts or the impacts would be minor during construction and operation and would not result in substantial adverse impacts. As stated above, environmental resource analysts concluded that no, or only negligible, impacts would result from the Enhanced Corridor Alternative related to noise and vibration, air quality, geology, hazardous materials, utilities, water quality, ecosystems, and cultural resources. The remainder of this analysis discusses topics where impacts could occur from the Enhanced Corridor Alternative.

Figure 9.2-1. Coburg Road Corridor Enhanced Corridor Alternative Minority Population by Block Group

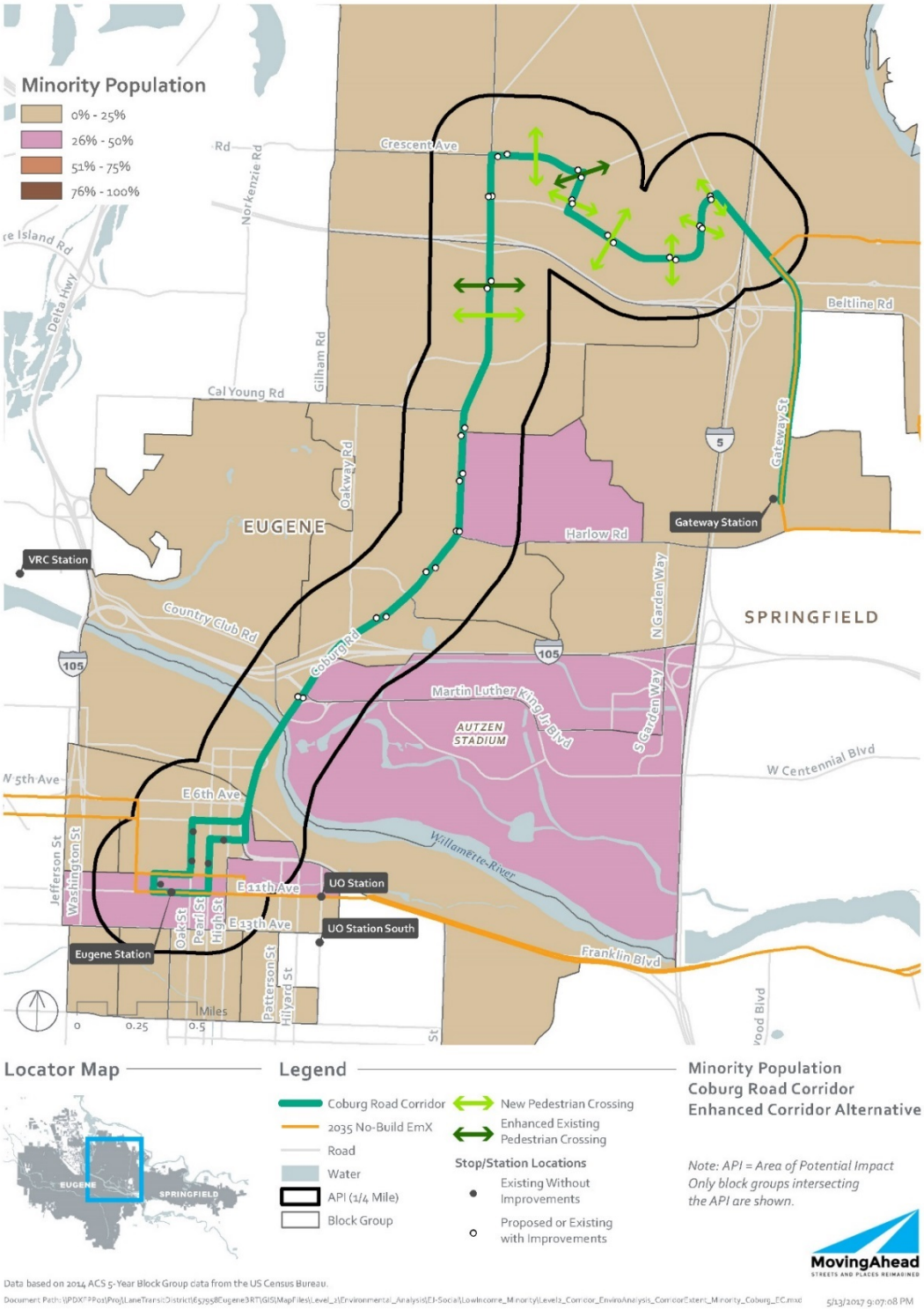
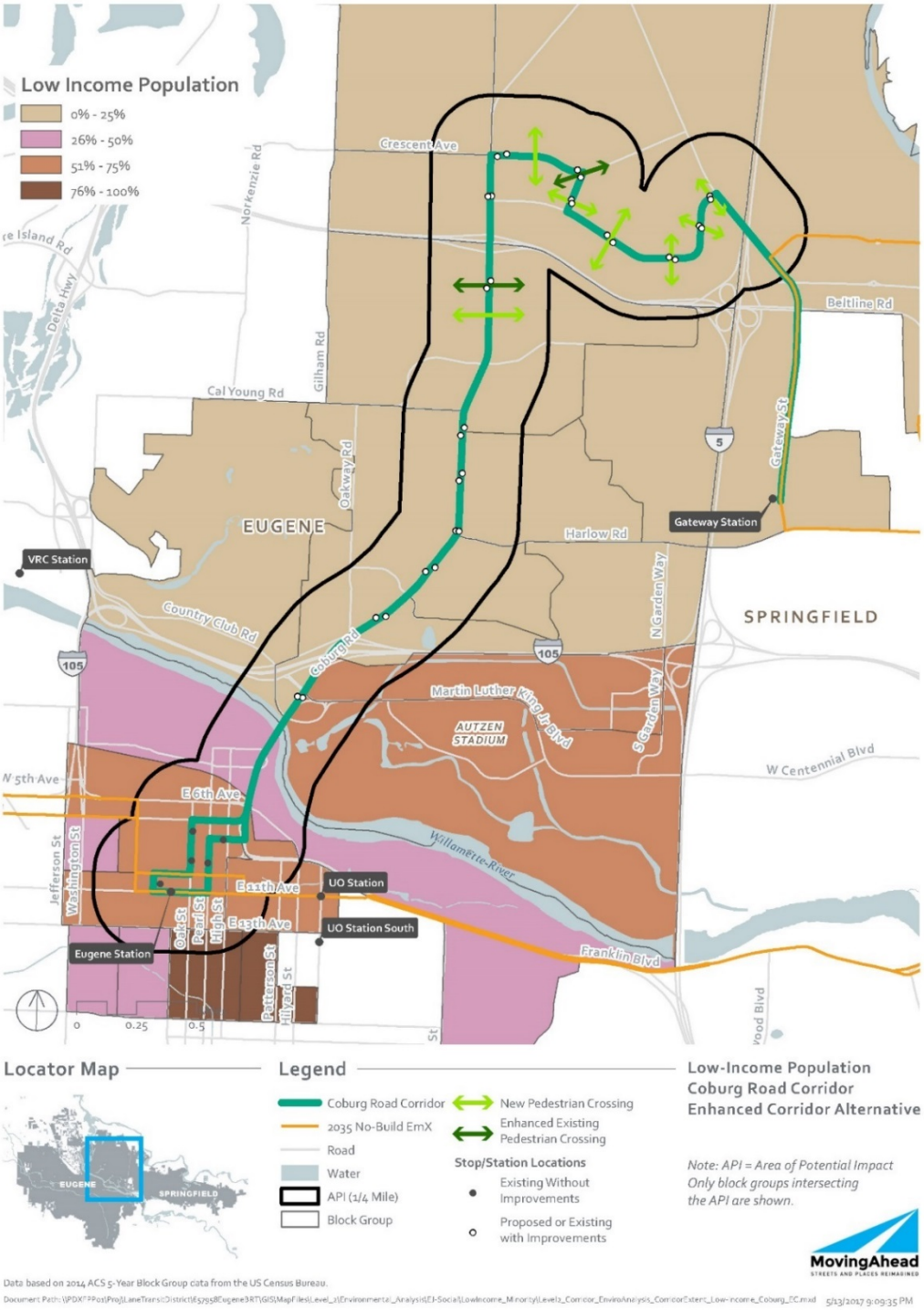


Figure 9.2-2. Coburg Road Corridor Enhanced Corridor Alternative Low-Income Population by Block Group



9.2.2.1. Project Impacts Before and After Mitigation

For the following environmental elements, more than minor impacts before implementation of mitigation could affect minority and/or low-income populations:

- **Property Acquisitions/Land Use** – According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), only minor property acquisitions would be associated with the Enhanced Corridor Alternative, and no residences or businesses would be displaced. This alternative would affect 47 properties and approximately 0.8 acre of land would be acquired and converted to a transportation-related use. Affected property owners would be compensated under the Uniform Relocation and Real Property Act of 1970, and no adverse impacts are anticipated.
- **Social/Economics** – As determined in Section 9.1 of this technical report, the Enhanced Corridor Alternative would not bisect any neighborhoods, displace any community facilities, or require any park property acquisition. In addition, no businesses or employees would be displaced. According to the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the Enhanced Corridor Alternative would result in a loss of 42 off-street parking stalls affecting 5 businesses and would restrict 5 ingresses/egresses to right-in- and right-out-only movements. Changes to ingresses/egresses have only been identified on properties with more than one access point. In addition, three left-turn accesses would be modified as a condition of improving pedestrian and bicycle crossings. These changes would cause some increase in traffic delays as traffic would disperse among adjacent roadways. However, these ingress/egress changes would not adversely affect travel through and across the neighborhoods or materially impair business access. Because alternate access would be maintained, turning restrictions that would change access to properties would not result in any adverse impacts. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.
  The *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g) supports that development in stop areas could include new employment opportunities. Although this would be beneficial, new development or redevelopment in stop areas could increase property values, raising rent or real estate property taxes, which could affect low-income populations. The City of Eugene has affordable housing policies that could minimize this potential negative effect.
- **Visual/Street Trees** – The *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) reports that the Coburg Road Corridor Enhanced Corridor Alternative potentially would remove up to 3 medium and large street trees and up to 6 landscape trees (up to 10 total). Compatible younger trees would replace those that were removed. The loss of mature trees would be visible but would not affect the overall character of the neighborhood. Although the replacement trees would require over 15 years to reach similar maturation, because the trees would be replaced, no adverse impacts are anticipated on community character (*MovingAhead Visual and Aesthetic Resources Technical Report* [CH2M, 2017l]).
- **Hazardous Materials** – According to the *MovingAhead Hazardous Materials Technical Report* (CH2M, 2017f), two hazardous materials site pose a high risk due to the nature of the contaminants. However, with the implementation of best management practices and mitigation, no adverse impacts are anticipated.

Populations living and working in the area might experience noise, dust, and detours for relatively short periods. These short-term impacts, after mitigation, would not be great enough to negatively affect the businesses and adjacent uses. To address construction impacts, LTD would implement mitigation

measures and construction-related best management practices (see Chapter 11 of this report). These short-term construction impacts would not lead to long-term substantial impacts. Minority and low-income populations would not experience impacts that would materially differ from those that non-minority and non-low-income populations would experience.

Construction would also provide temporary economic benefits, including the creation of construction jobs and other expenditures related to construction spending.

While all populations would experience slight changes, none of the impacts would be predominantly borne by a minority or low-income population; the identified impacts would not be greater in magnitude than the impacts that the non-minority and non-low-income populations within the API would experience; and this alternative would not adversely impact community facilities especially important to minority and low-income populations.

9.2.2.2. Project Benefits

The Coburg Road Corridor Enhanced Corridor Alternative would benefit transit-dependent persons and persons with disabilities more than others. This alternative would generate several transportation benefits for the traveling public as a whole (including minority and low-income populations). These benefits would include the following:

- Improving transit accessibility and reliability. This alternative would improve transit travel times and increase accessibility and reliability to 66 community facilities within the corridor. It would also provide connections with the WEEE and other transit services within downtown Eugene to reach the Central Business District and other regional employment centers.
- Providing better access and improving safety on the local roadway system around the study area from a variety of local roadway modifications
- Supplying pedestrian improvements, including new sidewalks, improved sidewalks, and new or upgraded crossings. Improvements would meet ADA standards.
- Providing bicycle improvements, including new and/or improved bicycle facilities.

In addition, vehicle safety would improve as a result of the new BAT lanes, right-turn lanes, and pedestrian and bicycle safety improvements with increased crossing opportunities.

9.2.2.3. Environmental Justice Conclusion

Because the Coburg Road Corridor Enhanced Corridor Alternative would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate impacts on minority or low-income populations are anticipated.

9.2.3. EmX Alternative

Figures 9.2-3 and 9.2-4 illustrate the minority and low-income populations, respectively, for the Coburg Road Corridor EmX Alternative. With this alternative, for most of the environmental elements, there would be either no impacts or the impacts would be minor and would not result in substantial adverse impacts.

Figure 9.2-3. Coburg Road Corridor EmX Alternative Minority Population by Block Group

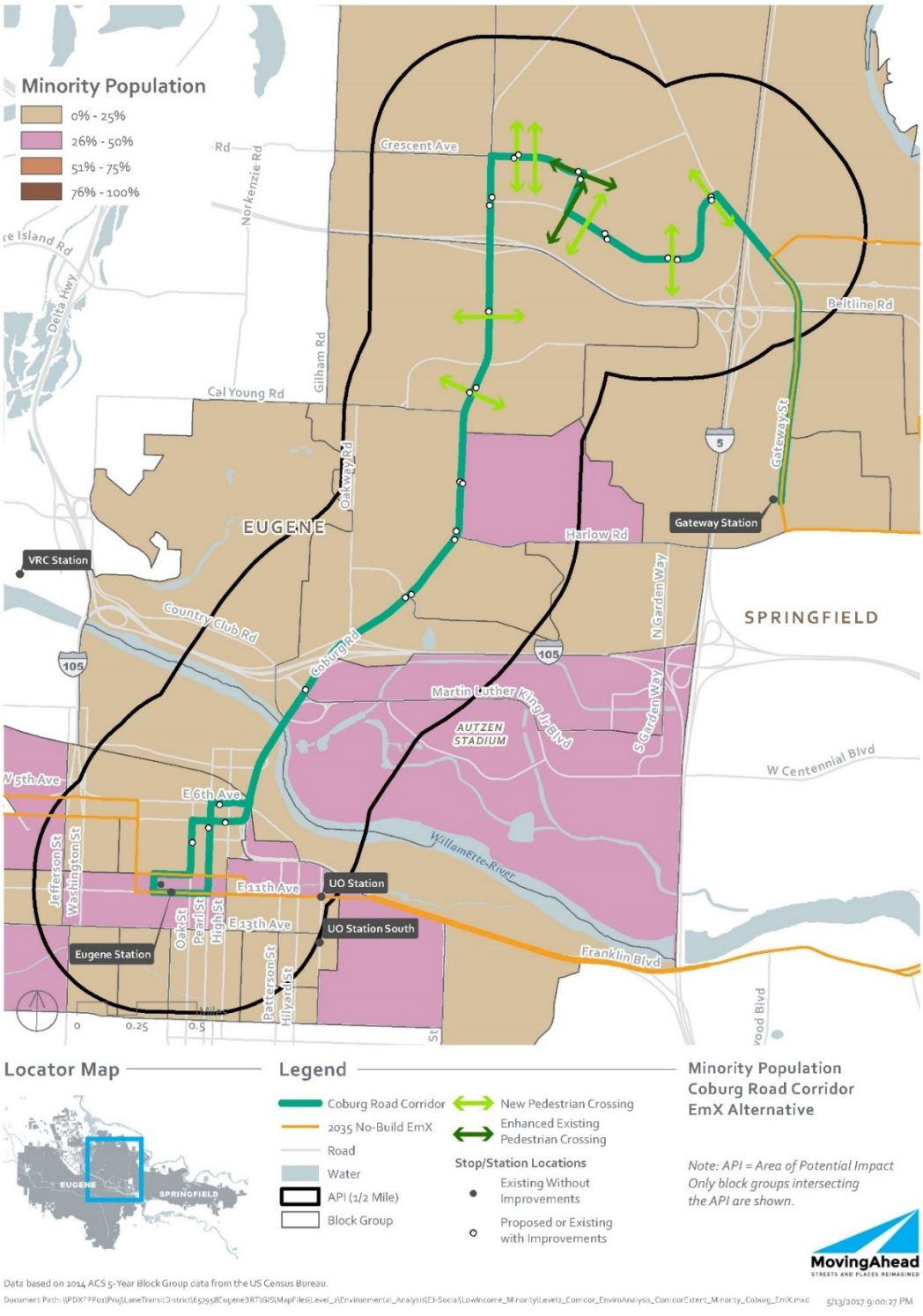
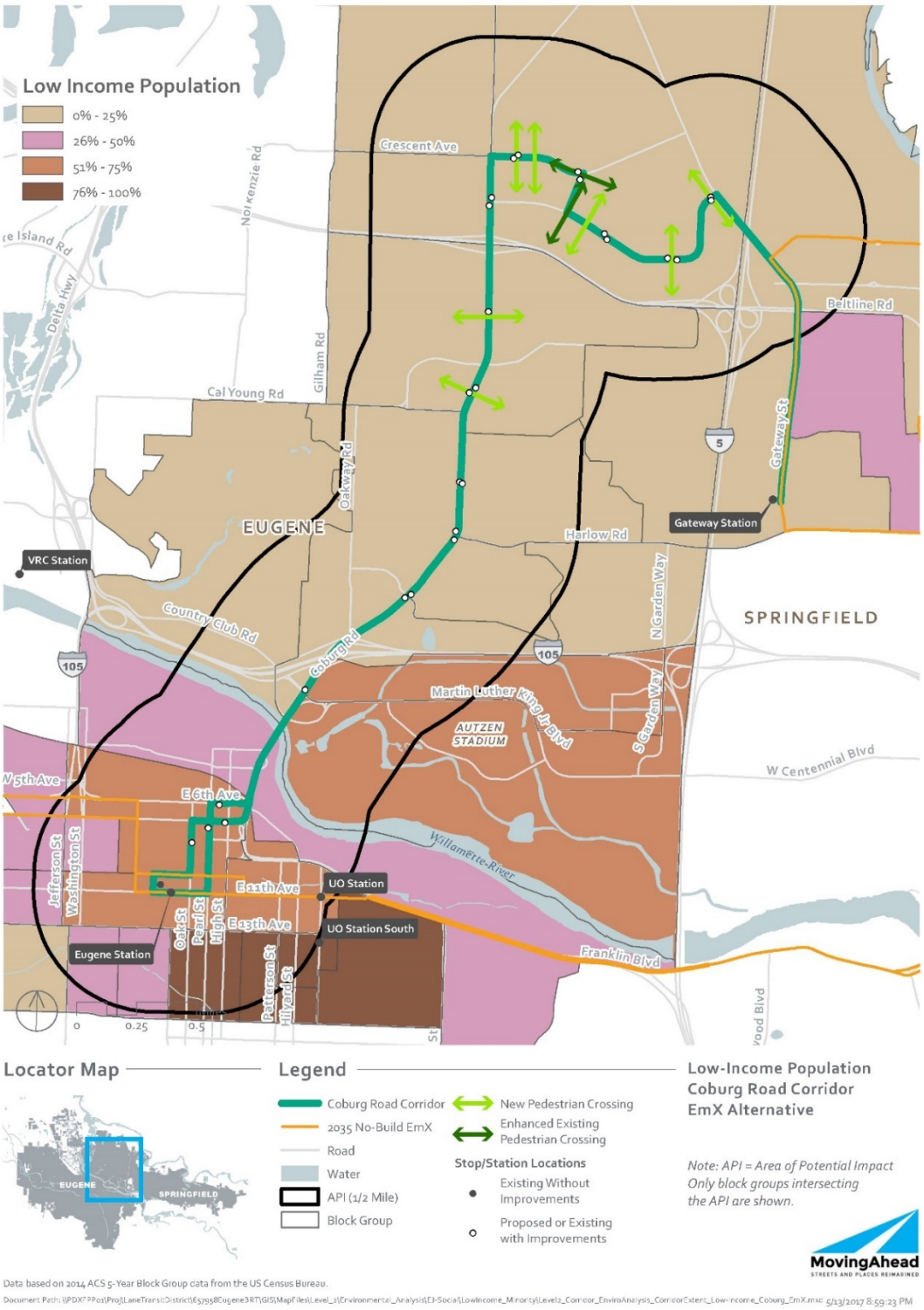


Figure 9.2-4. Coburg Road Corridor EmX Alternative Low-Income Population by Block Group



As stated above, environmental resource analysts concluded that no, or only negligible, impacts would result from the EmX Alternative related to air quality, geology, utilities, water quality, ecosystems, cultural resources, and land use. The remainder of this analysis discusses topics where impacts could occur from the EmX Alternative.

9.2.3.1. Project Impacts Before and After Mitigation

For the following environmental elements, more than minor impacts before implementation of mitigation could affect minority and/or low-income populations.

- **Noise –** According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the Coburg Road Corridor EmX Alternative could have noise impacts on up to 46 properties. There would not be vibration impacts. Because it is expected that noise impacts could be mitigated, no adverse impacts are anticipated.
- **Property Acquisitions/Land Use** – According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), mostly minor property acquisitions would be associated with the EmX Alternative and no residences would be displaced. This alternative would displace up to two businesses. Seventy-three properties would be affected and an estimated 4.0 acres of land would be acquired and converted to a transportation-related use. Affected property owners would be compensated under the Uniform Relocation and Real Property Act of 1970, and no adverse impacts are anticipated.
- **Social/Economics** – As determined in Section 9.1 of this technical report, the Coburg Road Corridor EmX Alternative would not bisect any neighborhoods, would not displace any community facilities, and would not require any park property acquisition (*MovingAhead Parklands, Recreation Areas, and Section 6(f) Technical Report* [CH2M, 2017h]).
  According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) up to two businesses could be displaced. These businesses do not provide unique services to low-income or minority populations.
  According to the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), the EmX Alternative would remove 109 off-street parking spaces affecting 16 commercial properties. Because adequate parking would remain, no adverse impacts are anticipated. However, additional minimization efforts to reduce the number of affected spaces would occur in the next phase of design. Turning restrictions that would change access to properties would not result in any adverse impacts because alternate access would be maintained.
  Development in station areas could include new employment opportunities that would be beneficial (*MovingAhead Land Use and Prime Farmlands Technical Report* [CH2M, 2017g]). However, such development could increase property values, raising rents or real estate property taxes, which could affect low-income populations. The City of Eugene has affordable housing policies that could minimize this potential negative effect.
- **Visual/Street Trees** – The *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) reports that the Coburg Road Corridor EmX Alternative potentially would remove up to 138 medium and large street trees and up to 11 landscape trees (up to 149 total trees). Compatible younger trees would replace those removed. Although the replacement trees would require over 15 years to reach similar maturation, because the trees would be replaced, no adverse impacts are anticipated on community character. According to the *MovingAhead Visual and Aesthetic Resources Technical Report* (CH2M, 2017l).
- **Hazardous Materials** – The *MovingAhead Hazardous Materials Technical Report* (CH2M, 2017f) identifies three hazardous materials sites that pose a high risk (potential to require additional

hazardous material clean-up) due to the nature of the contaminants. However, with the implementation of best management practices and mitigation, no adverse impacts are anticipated.

Most Coburg Road Corridor EmX Alternative adverse impacts would occur during construction. They would be the same as, although slightly more intense than, those with the Enhanced Corridor Alternative. These impacts would be limited in duration. Implementing the proposed mitigation measures would further reduce these impacts, and no adverse impacts would result.

Populations living and working in the area might experience noise, dust, and detours for relatively short periods. These short-term impacts, after mitigation, would not be great enough to negatively affect the businesses that remain and their adjacent uses. To address construction impacts, LTD would implement mitigation measures and construction-related best management practices (see Chapter 11 of this report). Construction impacts would be short term in nature and would not result in long-term substantial impacts. Minority and low-income populations would not experience impacts that would materially differ from those non-minority and non-low-income populations would experience.

Construction would also provide temporary economic benefits, including the creation of construction jobs and other expenditures related to construction spending.

While all populations would experience slight changes, none of the impacts would be predominantly borne by a minority or low-income population; the identified impacts would not be greater in magnitude than the impacts that the non-minority and non-low-income populations within the API would experience; and this alternative would not adversely impact community facilities especially important to minority and low-income populations.

9.2.3.2. Project Benefits

The Coburg Road Corridor EmX Alternative would yield the same benefits as those listed for the Enhanced Corridor Alternative. The EmX Alternative would provide additional reliability and frequency of service to 102 community facilities within the corridor and with employment centers of the Central Business District. With transit connections (such as the WEEE and other planned transit investments), minority and low-income persons would receive enhanced accessibility to multiple regional employment centers. In addition, vehicle safety would improve as a result of the new BAT lanes, new right-turn lanes, and pedestrian and bicycle safety improvements with increased crossing opportunities.

Compared to the Enhanced Corridor Alternative, it is anticipated that the EmX Alternative would more than double the number of construction jobs. In addition, the EmX Alternative, because of its increased frequency over the Enhanced Corridor Alternative, could provide higher reliability of service to a broader reach of persons, potentially providing more accessibility to larger numbers of low-income and minority persons.

9.2.3.3. Environmental Justice Conclusion

Because the Coburg Road Corridor EmX Alternative would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate impacts on minority or low-income populations are anticipated.

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10. Martin Luther King, Jr. Boulevard Corridor Environmental Consequences

10.1. Long-term Direct Impacts

10.1.1. Neighborhoods

Transportation projects have the potential to affect the communities they travel through by adding or changing travel patterns, affecting accessibility to services, and sometimes disrupting community cohesion. People who work and live in a neighborhood can also be affected by changes in noise levels, views, or physical changes, and changes in their walking environment. This section reviews how each Martin Luther King, Jr. Boulevard Corridor alternative would impact the neighborhood environment. This analysis groups impacts by physical impacts (property acquisition and barriers); changes in community character (removal of trees and visual effects); transportation and accessibility; and noise and vibration.

10.1.1.1. No-Build Alternative

The No-Build Alternative would not result in property acquisition, removal of trees, or visual impacts. It would not improve accessibility, connectivity, or reliability. There would be no enhanced pedestrian and bicycle crossings to benefit the communities and travelers. There would be no noise or vibration impacts. In addition, construction would not interfere with community and neighborhood activities.

10.1.1.2. Enhanced Corridor Alternative

Property acquisition/physical impacts. As discussed in the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative would not result in the full acquisition of any properties or displacement of any residences or businesses. The only required property acquisitions would be minor; these acquisitions would allow the existing land use to remain and would not affect the overall neighborhood or result in impacts to community facilities or public services. Property acquisition would include partial acquisitions of eight parcels (an estimated 0.1 acre of land).

This alternative would use existing roadways without the need to install barriers within the roadways. The improvements would not require extensive additions to the existing right of way beyond minor areas at stops. Therefore, the Enhanced Corridor Alternative would not create barriers to interaction.

Community character (removal of trees and visual effects). According to the *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j), the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative would remove up to nine medium and large street trees. Compatible younger trees would replace those that would be removed. Replacement trees would require over 15 years to reach similar maturation. The removal of trees might change the experience of the environment in the short-term for under 1 percent of the corridor where there is a high probability of impacts to medium and large trees. However, because the trees would be replaced, no adverse impacts are anticipated on community character. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Transportation and accessibility. As described in the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), this Enhanced Corridor Alternative would increase transit accessibility and reliability to residents within the neighborhoods. The presence of 13 new or enhanced stops (of 18 total stops) would not change the overall visual setting of any neighborhoods because the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative is located on main arterials within an urban setting that already includes bus service. The improved reliability of the service might make transit service more attractive for users.

Three new **pedestrian and bicycle crossings** and 0.45 mile of improvements to sidewalks would provide corridor users safer access to the neighborhood parks and other destinations. This would provide an indirect benefit that might attract more persons to walk and ride bicycles. A variety of people could increase their potential for healthier lifestyles and improve the quality of their lives. This indirect effect is discussed in Chapter 12 of this technical report.

Noise and vibration. According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the Enhanced Corridor Alternative is not expected to have unavoidable noise or vibration impacts on residences or community facilities (using FTA criteria).

Conclusion. The Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative would not result in negative changes in neighborhood quality, cause to barriers to social interaction, nor adversely affect community facilities because the project would be located within the existing roadway right of way, would maintain building access (including enhanced access to community facilities and parks), and would improve pedestrian and bicycle facilities. In addition, the project would increase connectivity to other transit connections in the downtown area, including the WEEE.

10.1.2. Community Facilities and Public Services

In general, transit projects are beneficial because they enhance accessibility to and from community facilities and public services. Emergency services can benefit from improved transportation circulation and, when needed, they can take advantage of the dedicated transit lanes to drive around congested areas. In general, adverse impacts would be limited to property acquisitions or changes in ingress and egress. In some cases, transit could increase congestion at intersections. See the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b) for more information about intersection impacts.

10.1.2.1. No-Build Alternative

The No-Build Alternative would not result in adverse impacts on community or public facilities, would not provide improved accessibility and reliability to these services, and would not improve transportation safety that could reduce potential conflicts among pedestrians, bicycles, and motorized vehicles.

10.1.2.2. Enhanced Corridor Alternative

Community Facilities. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative would not result in minor partial acquisition of any community or public facilities, however it would result in minor acquisition from Alton Baker Park. This partial acquisition would not affect the function and value of the resource. In addition, the community and recreational uses would benefit from improved accessibility.

According to the *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), the operation of the Enhanced Corridor Alternative after mitigation would not result in noise and vibration impacts on sensitive receptors such as residences, churches, concert halls, or other sensitive community facilities.

Emergency services. Emergency service providers did not foresee major issues of concern related to expanded transit services or the proposed improvements (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13). Transit operators would need to yield to police sirens because police are not able to pre-empt traffic signals (as fire engine vehicles can). Improved pedestrian and bicycle facilities that provide refuge would improve safety.

Emergency service providers would have an opportunity to review more detailed designs and would work with Lane Transit District to address issues in the future (CH2M personal communications: Narin, 2017, January 30; McGann, 2017, January 31; Halvorson, 2017, February 24; Wood, 2017, January 24; Nye, 2017, April 13).

10.1.3. Economics

Transportation projects can change access, travel patterns, property conditions, jobs, and the tax base, all of which can affect the local and regional economies.

10.1.3.1. No-Build Alternative

The No-Build Alternative would not result in economic impacts. Residents, employees, and visitors would not benefit from the interconnected transportation network that the Martin Luther King, Jr. Boulevard Corridor transit improvements would provide.

10.1.3.2. Enhanced Corridor Alternative

Property acquisition. According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) and the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), there would be no direct impacts to economics because the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative would not displace any businesses. As described in Neighborhoods (Section 10.1.1.2), the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative would require partial acquisitions of eight parcels (an estimated 0.1 acre of land). This total represents five commercial and industrial partial parcels and three residential partial parcels.

Property taxes. As described under Affected Environment (Section 5.4.3, City of Eugene Tax Base), property owners pay annual property tax of between $10.06 and $24.83 per $1,000 of their property value. Assuming a land value of $100,000 per acre, converting 0.1 acre to transportation-related use might reduce tax collection by $106 to $248 in 2016 fiscal year dollars.

Circulation, access, and parking effects on businesses. According to the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), with the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative, one driveway adjacent to the enhanced pedestrian crossing would have a reduced left-turn deceleration area. This could increase delays for motor vehicles accessing the driveway or traveling along the corridor. In addition, two driveways and one side street would be restricted from left-turn movements into the driveway or side street. No other impacts on parking or circulation would result from the Enhanced Corridor Alternative. Chapter 13 discusses potential mitigation measures. In addition, LTD has prepared an *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n) that evaluates ways to avoid or minimize impacts at some properties. Please see this addendum for more information about potential parking, property acquisition, and tree impacts mitigation.

Employment and employees. The Enhanced Corridor Alternative would enhance accessibility to employment locations along the Martin Luther King, Jr. Boulevard Corridor's neighborhoods and the

downtown business district for both current and prospective employees. In addition, the estimated capital cost of the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative would be $21 million. This would create construction jobs that would result in other expenditures in the corridor, increasing tax revenue during construction.

Development potential. Development potential is an importance economic indicator; however, this effect is considered an indirect impact and therefore is discussed under Chapter 12.

10.2. Environmental Justice

This section analyzes whether any of the environmental impacts during operation and construction of the Martin Luther King, Jr. Boulevard Corridor alternatives would result in adverse impacts on minority or low-income populations. This section also determines whether those impacts would disproportionately affect minority and low-income populations. USDOT Order 5610.2(a) (USDOT, 2012, May 10) and Circular FTA C 4703.1 (FTA, 2012, August 15) provide guidance on how to evaluate and address environmental justice impacts on minority and low-income populations. Both documents require that the assessment of "disproportionate impacts" consider (a) impacts, (b) mitigation, and (c) any offsetting benefits that might also result from the project. For this analysis, impacts are listed. However, the determination of whether those impacts would disproportionately affect minority and low-income populations was considered assuming that mitigation measures would be applied. In addition, project benefits were considered when determining the potential for disproportionate impacts on minority and low-income populations.

Project impacts fall into one or more of the following categories: (1) project impacts would be positive; (2) no project impacts are anticipated or impacts would be minor (measurable, but not perceptible and/or localized); (3) project impacts would be more than minor, but with the implementation of mitigation, minority and low-income populations would not experience impacts that would materially differ from the impacts on those who are members of non-minority and non-low-income populations.

Technical reports for each environmental element prepared for the MovingAhead Project were reviewed to determine the types and severity of impacts before and after mitigation on the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative. Those environmental resources that found no, or only negligible, environmental justice-associated impacts include noise and vibration, air quality, geology, hazardous materials, utilities, water quality, ecosystems, cultural resources. The following technical reports provide supporting documentation:

- MovingAhead Noise and Vibration Technical Report (MMA and CH2M, 2017b)
- MovingAhead Air Quality Technical Report (MMA and CH2M, 2017a)
- MovingAhead Geology and Seismic Technical Report (CH2M, 2017e)
- MovingAhead Hazardous Materials Technical Report (CH2M, 2017f)
- MovingAhead Utilities Technical Report (CH2M, 2017k)
- MovingAhead Water Quality, Floodplain, and Hydrology Technical Report (CH2M, 2017m)
- *MovingAhead Ecosystems Technical Report* (Environmental Science & Assessment, LLC and CH2M, 2017)
- MovingAhead Cultural Resources Technical Report (Heritage Research Associates and CH2M, 2017)

10.2.1. No-Build Alternative

The No-Build Alternative would not result in adverse impacts. However, it would not improve accessibility, provide enhanced connectivity, or increase reliability. It would not have the benefits associated with pedestrian and bicycle improvements.

10.2.2. Enhanced Corridor Alternative

Figures 10.2-1 and 10.2-2 illustrate the minority and low-income populations, respectively, for the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative. For most of the environmental elements, there would be either no impacts or the impacts would be minor during construction and operation and would not result in substantial adverse impacts. As stated above, environmental resource analysts concluded that no, or only negligible, impacts would result from the Enhanced Corridor Alternative related to noise and vibration, air quality, geology, hazardous materials, utilities, water quality, ecosystems, and cultural resources. The remainder of this analysis discusses topics where impacts could occur from the Enhanced Corridor Alternative.

10.2.2.1. Project Impacts Before and After Mitigation

For the following environmental elements, more than minor impacts before implementation of mitigation could affect minority and/or low-income populations:

- **Property Acquisitions/Land Use** – According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), only minor acquisitions would be associated with the Enhanced Corridor Alternative, and no residences or businesses would be displaced. This alternative would affect eight properties and an estimated 0.1 acre of land would be acquired and converted to a transportation-related use. Affected property owners would be compensated under the Uniform Relocation and Real Property Act of 1970, and no adverse impacts are anticipated.
- **Social/Economics** – As determined in Section 10.1 of this technical report, the Enhanced Corridor Alternative would not bisect any neighborhoods or displace any community facilities.
  According to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a), property acquisition would affect Alton Baker Park. However, this partial acquisition would not affect the value or the recreational function of the park. This alternative would not displace any businesses or employees.
  According to the *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b), one driveway adjacent to the enhanced pedestrian crossing would have a reduced left-turn deceleration area. It's possible that motor vehicles accessing the driveways or traveling along the corridor might experience increased delays. In addition, two driveways and one side street would be restricted from left-turn movements into the driveway and the side street. Turning restrictions that would change access to properties would not result in any adverse impacts because alternate access would be maintained.
  The *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g) supports that development in stop areas could include new employment opportunities. Although this would be beneficial, new development or redevelopment in stop areas could increase property values, raising rents or real estate property taxes, which could affect low-income populations. The City of Eugene has affordable housing policies that could minimize this potential negative effect.

Figure 10.2-1. Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative Minority Population by Block Group

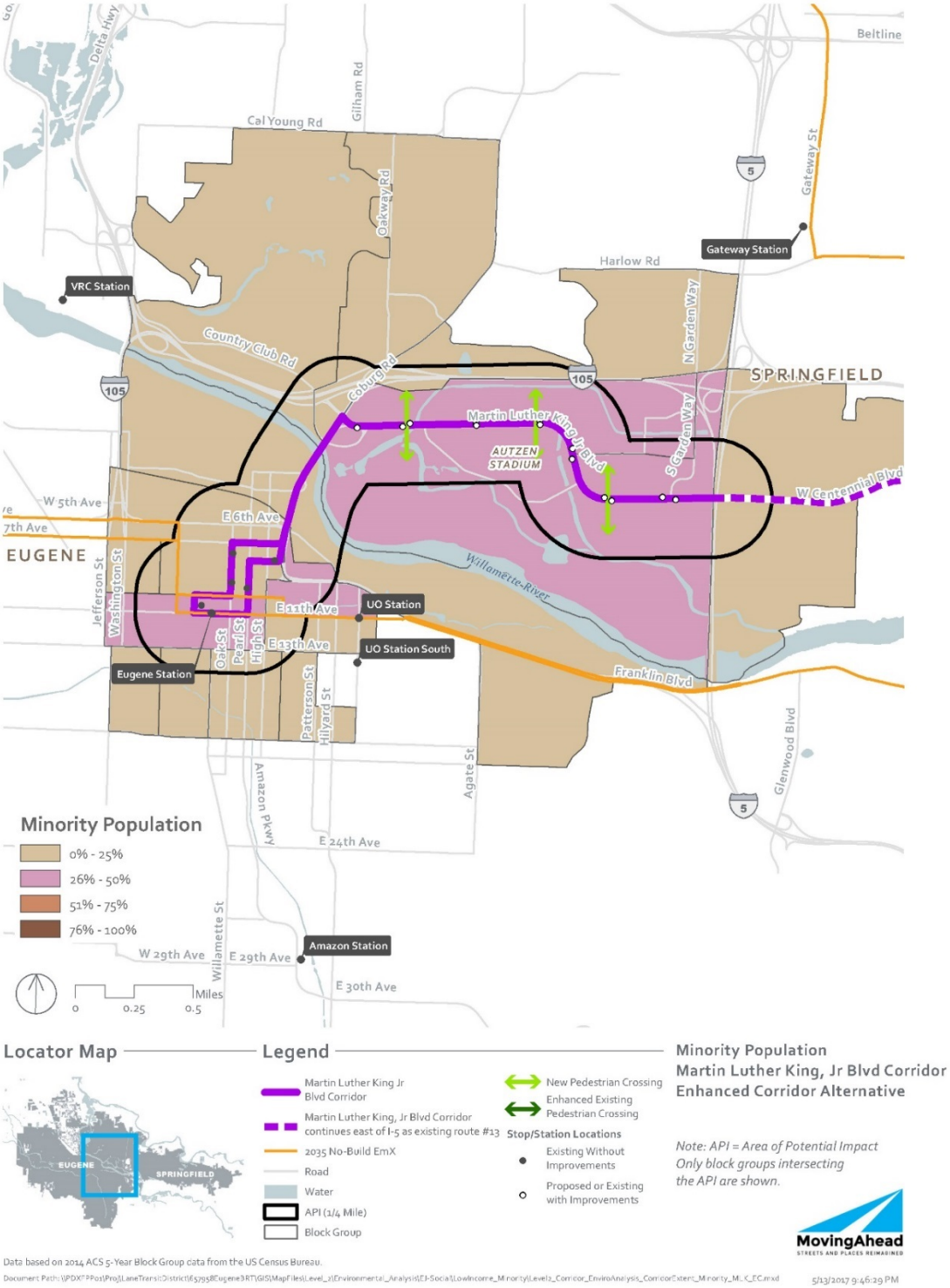
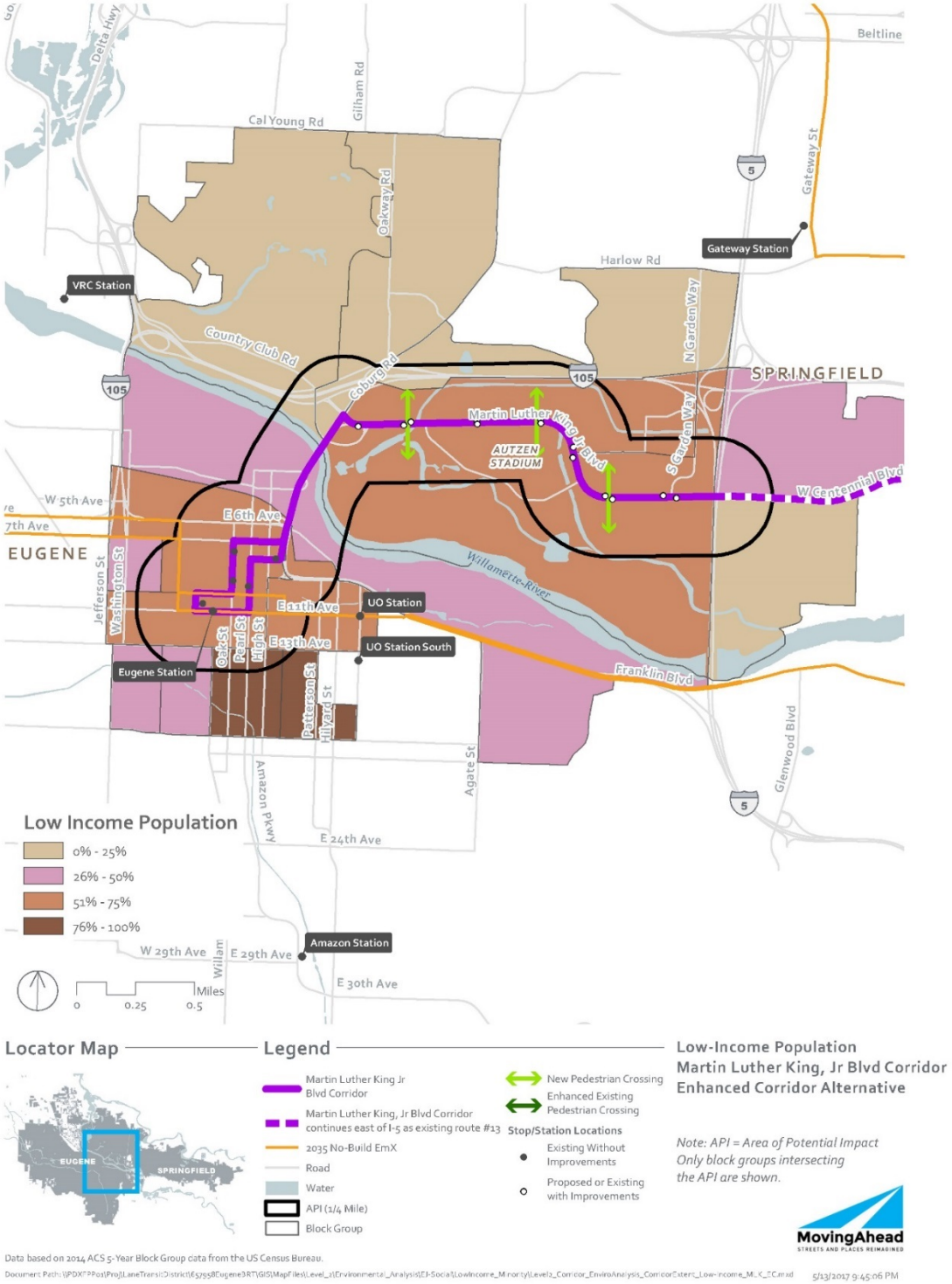


Figure 10.2-2. Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative Low-Income Population by Block Group



- **Visual/Street Trees** – The *MovingAhead Street and Landscape Trees Technical Report* (CH2M, 2017j) reports that the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative potentially would remove up to 9 medium and large street trees. Compatible younger trees would replace those that were removed. The loss of mature trees would be visible but would not affect the overall character of the neighborhood. Although the replacement trees would require over 15 years to reach similar maturation, because the trees would be replaced, no adverse impacts are anticipated on community character (*MovingAhead Visual and Aesthetic Resources Technical Report* [CH2M, 2017l]).
- **Hazardous Materials** – According to the *MovingAhead Hazardous Materials Technical Report* (CH2M, 2017f), one hazardous materials site poses a high risk due to the nature of the contaminants. However, with the implementation of best management practices and mitigation, no adverse impacts are anticipated.

Most of the adverse impacts would occur during construction. Populations living and working in the area might experience noise, dust, and detours for relatively short periods. These short-term impacts, after mitigation, would not be great enough to negatively affect the businesses and adjacent uses. To address construction impacts, LTD would implement mitigation measures and construction-related best management practices (see Chapter 11 of this report). Construction impacts would be short term in nature and would not result in long-term substantial impacts. Minority and low-income populations would not experience impacts that would be materially different from non-minority and non-low-income populations.

Construction would also provide temporary economic benefits, including the creation of construction jobs and other expenditures related to construction spending.

While all populations would experience slight changes, none of the impacts would be predominantly borne by a minority or low-income population; the identified impacts would not be greater in magnitude than the impacts that the non-minority and non-low-income populations within the API would experience; and this alternative would not adversely impact community facilities especially important to minority and low-income populations.

10.2.2.2. Project Benefits

The Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative would benefit transit-dependent persons and persons with disabilities more than others. This alternative would generate several transportation benefits for the traveling public as a whole (including minority and low-income populations). These benefits would include the following:

- Improving transit accessibility and reliability. This alternative would improve transit travel times and increase accessibility and reliability to 45 community facilities within the corridor. It would also provide connections with the WEEE and other transit services within downtown Eugene to reach the Central Business District and other regional employment centers.
- Providing better access and improving safety on the local roadway system around the study area from a variety of local roadway modifications.
- Supplying pedestrian improvements, including new sidewalks, improved sidewalks, and new or upgraded crossings. Improvements would meet ADA standards.
- Providing bicycle improvements, including new and/or improved bicycle facilities.

In addition, vehicle safety would improve as a result of the new BAT lanes and the pedestrian and bicycle safety improvements with increased crossing opportunities. The Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative would enhance accessibility among major

employment centers, which also include high-density housing. This alternative would enhance accessibility in areas where over 50 percent of the residents are considered low-income and over 26 percent of the residents are considered minorities.

10.2.2.3. Environmental Justice Conclusion

Because the Martin Luther King, Jr. Boulevard Corridor Enhanced Corridor Alternative would result in primarily beneficial effects, and no adverse impacts are anticipated after mitigation, no disproportionate impacts on minority or low-income populations are anticipated.

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11. Short-term Construction Impacts

This preliminary phase of planning does not include a detailed review of construction. However, some of the more intense impacts for infrastructure projects occur during construction. This chapter provides an overview of construction-related impacts that would pertain to each corridor organized by neighborhoods, community facilities and public services, and economics. The major differences among the alternatives would be the land uses that construction would affect. In addition to the construction-related impacts described in this section, Appendix B, Construction Activities and Methods, provides information on how the LPA would likely be staged and sequenced based upon previous LTD projects.

11.1. No-Build Alternatives

The No-Build Alternative would not build any new transit projects other than those that are under development, including the WEEE and other bus improvements. No construction impacts would be associated with the No-Build Alternative.

11.2. Enhanced Corridor Alternatives

lmpacts during construction involve increased levels of dust and noise; visual disturbances (such as equipment and material storage); and short-term reductions in travel lanes or implementations of detours. LTD has developed an expedient construction method that narrows the construction time in any given area of the corridor by concentrating construction efforts in one two-block segment at a time before moving to the next segment. Construction of an Enhanced Corridor Alternative would occur in three stages – (1) utility work, (2) flatwork, and (3) stops and electronic installations. The final plan for construction methods, sequencing, and staging would be determined in coordination with the contractor and permitting authorities.

1. In general, utility work would be completed before constructing the transportation infrastructure. Utility work, which local utility companies often conduct, occurs separately from project-related construction.
2. After completing required utility relocation and other preparatory site work, the contractor would begin constructing new transit lanes, bike lanes, sidewalks, and any other “flatwork.” The contractor would modify existing signals or construct new traffic signals as part of this work. In some cases, the contractor might construct the signal footings but install signal arms after completing initial work. Flatwork for stations (including curbs, ramps, and station footings) would be completed as the work progressed along the alignment. Streets and street segments would be restored to normal operations after completing this work. The contractor is expected to progress approximately two blocks every 2 weeks, with additional time required – up to 2 weeks – for each enhanced stop or EmX station. Additional time would be required at intersections that required new or substantially modified traffic signals. The construction sequencing would be determined through coordination between the contractor and local residents, businesses, and property owners regarding construction scheduling preferences. It is expected that, for each major segment, the work would start at one end of the segment and progress to the other end of the segment. All flatwork is expected to be completed in two construction seasons.
3. Stops would be fabricated during the second construction season and installed during the subsequent (final) construction season, along with landscaping, fare machines, real-time passenger information, enhanced stop amenities, and other similar items.

The contractor and LTD would coordinate closely with the Oregon Department of Transportation (ODOT) and with the City of Eugene (as appropriate to the jurisdiction) on traffic control. Depending on the segment, ODOT or the City would review and approve traffic plans for construction.

On streets with multiple lanes in each direction (or multiple lanes in one direction for one-way streets), at least one lane of traffic would be open at all times. Flaggers would coordinate travel at intersections and other points of congestion, as necessary. On streets with a single lane, it might be necessary to close one direction of traffic for certain periods. In those situations, flaggers would manage the traffic flow safely. The contractor and LTD would also coordinate with businesses to ensure that the project maintains access for patrons and deliveries. Therefore, the impacts would be short-term in nature, with limited disruptions to adjacent land uses.

11.2.1. Neighborhoods

Activities related to construction of the Enhanced Corridor Alternative would result in temporary noise, dust, vibration, and disruption of access to properties (if any roadway or lane closures would be required, or as a result of construction equipment temporarily blocking access). Access would be prearranged and traffic management plans would include detours to maintain access to adjacent land uses throughout construction, to the extent possible. When closures would be needed for short periods, notifications and alternate accommodations would be arranged with affected property owners. Although the impacts of construction are intense, their short durations lead to only low severity on the character and cohesion of the neighborhood.

11.2.2. Community Facilities and Public Services

Construction activities could temporarily affect existing noise levels where construction would be adjacent, or in close proximity, to community facilities and public services. It is not anticipated that construction would impact the travel and response times for public service providers. Construction would occur during the normal daytime hours of 7 a.m. and 7 p.m. If construction was planned outside the hours of 7:00 a.m. to 7:00 p.m., the project would be required to obtain a noise variance from local jurisdictions.

Construction activities usually would be within areas of existing right of way or on areas where temporary construction easements had been obtained. Therefore, no adverse impacts would result that would negatively affect neighborhoods, community facilities, or public services.

11.2.3. Economics

Business customers and employees might endure some short-term impeded access during construction. Businesses might experience a loss of business activity during the construction period and, in the short-term, customers might be diverted to other retail businesses. LTD is committed to working closely with the businesses to reduce effects on the adjacent businesses. As an example, LTD's Franklin, Gateway, and West Eugene EmX projects demonstrated LTD's commitment to communicating with impacted businesses, residences, and travelers, both before and during construction. As with those projects, LTD would contact all businesses and residents along the alignment before construction began to solicit local concerns, issues, and scheduling preferences. Businesses and residents would be able to communicate with the contractor and LTD during construction. LTD's construction liaison would provide e-mail updates and serve as an ongoing point of contact to address concerns and to provide information to affected businesses, residents, and other interested persons. LTD would provide a 24-hour hotline to quickly address construction concerns that businesses and residents expressed.

LTD would also work to enhance activity at businesses that construction affected. This could be done through attractive signage, direct communications with the public (such as direct mail and advertising), and community events (such as street fairs). These techniques have succeeded in keeping business areas active during previous EmX projects. With these efforts, and given the overall short-term nature and the extent of construction activities anticipated for the improvements, no long-term impacts on businesses are anticipated.

Construction would also result in some short-term economic benefits from construction-related expenditures and from construction workers frequenting local businesses.

11.3. EmX Alternatives

For the EmX Alternatives, impacts during construction would be similar to those for the Enhanced Corridor Alternatives. The intensity and the duration of the impacts would be greater with the EmX Alternative because the EmX Alternatives would be constructing stations and their attendant amenities rather than just enhancing stops and would have a larger infrastructure investment and footprint (including stations, bike and pedestrian improvements, and the expansion of some of the bicycle facilities around the stations).

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12. Indirect and Cumulative Impacts

12.1. No-Build Alternatives

The No-Build Alternatives would not result in adverse indirect or cumulative impacts. However, the No-Build Alternatives would not help the City of Eugene realize the indirect benefits that it seeks.

It is not likely that beneficial indirect impacts associated with TOD would occur within corridor APIs under the No-Build Alternatives because these alternatives would provide less transit investment than the Enhanced Corridor or EmX Alternatives. The No-Build Alternatives would not be consistent with the Draft Eugene 2035 TSP, the *Metro Plan, Eugene-Springfield Metropolitan Area General Plan* (LCOG et al., 1987, as updated on 2015, December 31), *TransPlan, The Eugene-Springfield Transportation System Plan* (City of Eugene et al., Adopted in 2002, July), and *Envision Eugene: A Community Vision for 2032* (Envision Eugene, 2012, March) – documents that encourage increased density and TOD along Key Transit Corridors. These plans rely on continuing transit corridor enhancements. Redevelopment of vacant and underutilized lands within corridor APIs could possibly occur. However, without transit, the land use might not realize the same level of investment as it would under the Enhanced Corridor or EmX Alternatives.

The potential indirect effects for TOD (that is, additional employment and income associated with jobs created by the construction and operation of the build alternatives) would not be realized.

12.2. All Build Alternatives

The affected environment provides a current cumulative condition as a result of past and present actions. Foreseeable future actions (such as the WEEE and development actions) are collectively improving transportation, accessibility, and reliability with minimal construction disturbance.

Each build alternative would provide for incremental improved transit accessibility and economic benefits associated with TOD in the stop and station areas that are zoned to support TOD. Refer to the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g) for more information.

12.2.1. Enhanced Corridor Alternatives

As recorded in the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), operation of the Enhanced Corridor Alternatives could yield beneficial, indirect impacts around the stop areas. In these locations, the potential exists for new development on vacant lands or redevelopment consistent with existing zoning. This would result in indirect beneficial impacts associated with new employment opportunities and chances to live closer to employment (if new development included housing). New development or redevelopment in stop areas could have a negative indirect effect on residents, especially those who rent, if property values increased and rents subsequently rose. The City of Eugene has affordable housing policies that could minimize this potential negative effect. The City might realize a potential increase in property tax revenues if land values in areas around stops increased. These indirect benefits are likely to affect a zone of approximately 0.25 mile around Enhanced Corridor Alternative stops only if zoning permits, development interest is present, and land area is available. However, due to the low investment nature of the Enhanced Corridor Alternatives, the transit investment would not be as strong a driver as with the EmX Alternatives. It is not anticipated that the Enhanced Corridor Alternatives would result in any negative indirect or cumulative impacts.

12.2.2. EmX Alternatives

Indirect and cumulative effects related to the EmX Alternatives would be the same as those for the Enhanced Corridor Alternatives. However, the EmX Alternatives would potentially contribute stronger indirect beneficial impacts for economic development associated with TOD because the EmX generally attracts higher ridership and improved service, as described previously.

As recorded in the *MovingAhead Land Use and Prime Farmlands Technical Report* (CH2M, 2017g), operation of the EmX Alternatives could produce beneficial, indirect impacts in station areas. Within the station areas, the potential exists for new development on vacant lands or redevelopment consistent with existing zoning. This would result in indirect beneficial impacts associated with new employment opportunities and chances to live closer to employment (if new development included housing). The City might realize a potential increase in property tax revenues if land values in station areas increased. New development or redevelopment in station areas could have a negative indirect effect on residents, especially those who rent, if property values increased and rents subsequently rose. This would be a greater concern for the EmX Alternatives than the Enhanced Corridor Alternatives. The City of Eugene has affordable housing policies that could minimize this potential negative effect. These indirect benefits would be likely to affect a zone of approximately 0.5 mile around the EmX Alternative stations only if zoning permits, development interest is present, and land area is available.

13. Potential Mitigation Measures

In this phase of development, the potential mitigation measures might apply equally to any of the corridor build alternatives. Therefore, the mitigation options are presented below for consideration in future phases of the project.

13.1. Long-term Direct Impacts

No operational mitigation would be needed for the following environmental resources – air quality; energy and sustainability; land use and prime farmlands; and utilities. During operation, the Enhanced Corridor and EmX Alternatives would have beneficial effects on community resources – no mitigation would be required.

For geology and seismic and for water quality resources, avoidance measures would be needed. Therefore, because potential impacts to community facilities, public services, neighborhoods, economics, and environmental justice-associated impacts would be avoided, this report does not discuss impacts related to these resources. No other mitigation measures would be necessary for the geology, seismic, and water quality resources.

The *MovingAhead Noise and Vibration Technical Report* (MMA and CH2M, 2017b), *MovingAhead Air Quality Technical Report* (MMA and CH2M , 2017a), *MovingAhead Visual and Aesthetic Resources Technical Report* (CH2M, 2017l), and *MovingAhead Transportation Technical Report* (DKS and CH2M, 2017b) identify proposed mitigation measures that would avoid and minimize impacts on neighborhoods, community facilities, public services, and some business-related impacts. Refer to the *MovingAhead Acquisitions and Displacements Technical Report* (CH2M, 2017a) for measures that would be implemented to address the acquisition of property needed to construct and operate the project.

The following list identifies mitigation measures that would be expected during operation of the MovingAhead build alternatives. Unless otherwise noted, these measures would apply to all the Enhanced Corridor and EmX Alternatives.

- **Acquisitions and Displacements**. Minimize site-specific property impacts during final design; mitigate direct property acquisitions and relocation impacts for federally funded projects through financial compensation and technical assistance; regulate acquisitions and displacements in accordance with the Uniform Relocation and Real Property Act of 1970, as amended, and with Oregon Revised Statutes (ORS).
- **Cultural Resources**. If, in future phases, adverse effects determinations are made on historic resources, then design and draft mitigation plans in cooperation with LTD, the Oregon State Historic Preservation Office (SHPO), local jurisdictions, and FTA. Mitigation measures might include interpretive panels, photo documentation, Historic American Building Survey/Historic American Engineering Record reporting, historic context statements, and/or other measures as agreed upon.
- **Hazardous Materials.** Perform proper environmental due diligence before acquiring contaminated sites or, where possible, avoid the acquisition of contaminated sites.
- **Noise and Vibration**. If impacts are identified, and mitigation is warranted, begin mitigation for both moderate and severe noise impacts with source treatment, followed by treatments in the noise path. If source and path treatments are not sufficient to mitigate the impacts, evaluate sound insulation implementation for affected properties where the existing building does not already achieve sufficient exterior-to-interior reduction of noise levels.

- **Parklands, Recreation Areas, and Section 6(f).** During subsequent design phases, further explore ways to avoid the permanent loss of park property. If it is found that avoidance would not be practical, compensate for or enhance the remaining park property consistent with the City's *Full 30-Year Vision for Parks and Recreation Capital Project List with Draft Priorities* (City of Eugene, 2017, March 8). Determine specific enhancement measures through coordination with the Eugene Parks and Open Space Division.
  Related to impacts to Section 6(f) park properties, during subsequent design phases, evaluate design avoidance. Per Section 6(f) requirements, if a conversion still persists, consult with the Eugene Parks and Open Space Division, the Oregon Parks and Recreation Department (OPRD), and the Department of Interior's National Park Service (NPS) to develop a Section 6(f) conversion proposal, in accordance with 36 Code of Federal Regulations (CFR) 59.3, which includes replacement of parkland of equal area and value.
- **Section 4(f) Resources**. In future design phases, have LTD and FTA develop detailed impacts analyses and determine detailed minimization, compensatory, and mitigation measures with concurrence from the agency of jurisdiction over the resource; allow for public review; and make a final determination.
- **Ecosystems/Street and Landscape Trees/Visual and Aesthetic Resources.** In areas where street trees would be impacted, incorporate landscape strips into which new street trees could be planted in proposed sidewalks that, in general, would be wide enough for such strips. Where street tree would be removed, plant new trees, replacing all removed trees at a ratio of at least one tree planted for one tree removed, or as otherwise required by *Eugene Code* Sections 6.300 – 6.330. Have tree species selection, soil conditions, and locations conform to City standards. If tree surveys determine that a potentially impacted tree fits the classification criteria for a Heritage Tree or a Charter Tree, refine the design to avoid that impact.
  Where landscape trees would be removed, replant or replace trees with the property owner's agreement. Have LTD coordinate with respective property owners on the selection of trees to be replanted or replaced. In future phases, refine the design of corridor alternatives to mitigate potential short-term and long-term impacts to street and landscape trees.
- **Transportation**. Where impacts to parking, access, and circulation would occur, modify the design to minimize or avoid impacts, as described in the *Addendum to MovingAhead Alternatives Analysis Technical Reports Memorandum* (CH2M, 2017n). For intersection impacts, optimize signals and modify lanes to maintain intersection operations.

It is not anticipated that impacts on the City of Eugene tax base from converting property to transportation-related use and removal of on-street parking meters would result in noticeable change. In particular, the potential for increased property values might, over time, result in higher property taxes, especially around stops and station areas. Otherwise, the build alternatives would improve accessibility for all persons, pedestrians, and bicycles. These alternatives would not result in long-term adverse effects on community character and cohesion. Therefore, no avoidance, minimization, or mitigation measures are proposed for the operational phase.

13.2. Short-term Construction Impacts

The analysis indicates that short-term construction impacts might be high in intensity, but would be short in duration. Therefore, they are not considered severe impacts. The following minimization measures are offered for consideration.

- LTD would continue to concentrate construction in short lengths of the corridor to reduce the total duration of construction on adjacent uses.

- LTD would provide adequate barriers and flagging for construction of the bicycle/pedestrian movements to maximize safety.
- For businesses where construction would affect access and reduce parking, LTD would consider temporarily relocating the access and providing incentives for customers to continue frequenting (such as advertising to promote business activities).
- To address construction-related impacts, a Construction Management Plan would be developed and tailored to the build alternative selected. At a minimum, it would include a transportation and detour plan; a communication and construction update plan; a signage plan; and an emergency coordination plan.

13.3. Indirect and Cumulative Impacts

The indirect and cumulative impacts would be positive because it is anticipated that the build alternatives would support TOD (more so for EmX Alternative investments than for Enhanced Corridor Alternative investments) and improve safety for pedestrians and bicyclists. The potential exists for new development on vacant lands or redevelopment consistent with existing zoning. This could yield indirect beneficial impacts associated with new employment opportunities and chances to live closer to employment (if new development included housing). The City might realize a potential increase in property tax revenues if land values in areas around stops or stations increased. These indirect benefits would be likely to affect a zone of approximately 0.25 mile around Enhanced Corridor Alternative stops or approximately 0.5 mile around EmX Alternative stations if zoning permits, development interest is present, and land area is available. Due to the low investment nature of the Enhanced Corridor Alternatives, the transit investment would not be as strong a driver as with the EmX Alternatives.

Each of the build alternatives offers new and/or improved sidewalks and bike facilities to enhance safety for users to access a multitude of destinations, including the neighborhood parks. An indirect impact of these enhancements could be that easier and safer pedestrian and bicycle access might encourage persons to walk and bicycle more often. If so, a variety of people could increase their potential for healthier lifestyles and improve the quality of their lives.

Other indirect and cumulative effects of increased investments in transit and coordinated land use along the corridors would improve cross linkages with multiple employment and residential centers. Increased ease of access and concentrated land use around transit stations might assist persons looking for employment and cross-business connectivity. Therefore, no avoidance, minimization, or mitigation measures are suggested for indirect and cumulative impacts.

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14. Permits and Approvals

No permits or approvals related to the resources addressed in this Community, Neighborhood, and Environmental Justice Technical Report would be necessary.

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Appendix A: Glossary and Naming Conventions

This appendix includes a detailed list of acronyms, abbreviations and technical terms used throughout this report. It also includes naming conventions used in the MovingAhead Project.

Acronyms and Abbreviations

Table A-1. Acronyms and Abbreviations

Acronyms and Abbreviations	Definitions
/H-RCP	Historic Structures or Sites Combine Zone
/WP	Waterside Protection
/WQ	Water Quality
°C	degree(s) Celsius
µg/L	microgram(s) per liter
µg/m^3	microgram(s) per cubic meter
AA	Alternatives Analysis
AAC	all aluminum conductor
AASHTO	American Association of State Highway and Transportation Officials
AAI	All Appropriate Inquiry
ACS	American Community Survey
ADA	Americans with Disabilities Act
AEO	Annual Energy Outlook
APE	Area of Potential Effect
API	Area of Potential Impact
approx.	approximately
ARTS	All Roads Transportation Safety Program
ATR	Automated Traffic Recording
BAT	business access and transit
BEST	Better Eugene Springfield Transit
BFE	Base Flood Elevation
BMP	best management practice
BPA	Bonneville Power Administration
BRT	bus rapid transit
Btu	British thermal unit
c	circa
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
CEQ	Council on Environmental Quality

Table A-1. Acronyms and Abbreviations

Acronyms and Abbreviations	Definitions
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response Compensation and Liability Information System
CFR	Code of Federal Regulations
CFU	Colony-Forming Unit
CH2M	CH2M HILL, Inc.
CIG	Capital Investment Grant
CIP	Capital Improvements Program
City	City of Eugene
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COGP	County Opportunity Grant Program
Corps	U.S. Army Corps of Engineers
CRL	Confirmed Release List
CSZ	Cascadia Subduction Zone
CTR	commute trip reduction
CWA	Clean Water Act
CY	cubic yard
dB	decibel
dBA	A-weighted decibel
DBE	Disadvantaged Business Enterprise
DEIS	Draft Environmental Impact Statement. Also referred to as Draft EIS.
DEQ	Oregon Department of Environmental Quality
DKS	DKS Associates
DLS	Donation Land Claim
DOE	Determination of Eligibility
DOGAMI	Oregon Department of Geology and Mineral Industries
DOT	Department of Transportation
Draft EIS	Draft Environmental Impact Statement. Also referred to as DEIS.
Draft Envision Eugene	*Draft Envision Eugene Community Vision* (Envision Eugene, 2016, July)
Draft Eugene 2035 TSP	*DRAFT Eugene 2035 Transportation System Plan* (City of Eugene, 2016)
DSL	Oregon Department of State Lands
DU	dwelling unit
EA	Environmental Assessment or each
EC	City of Eugene Code

Table A-1. Acronyms and Abbreviations

Acronyms and Abbreviations	Definitions
EC	eligible contributing
EC	Enhanced Corridor Alternative (in some tables)
ECLA	*Eugene Comprehensive Lands Assessment* (ECONorthwest, 2010, June)
ECSI	Environmental Cleanup Site Information database (Oregon DEQ, 2016)
EFH	essential fish habitat
EIS	Environmental Impact Statement
EJ	Environmental Justice
EmX	Emerald Express, Lane Transit District's Bus Rapid Transit System
EmX	EmX Alternative (in some tables)
EOA	Equity and Opportunity Assessment
EPA	U. S. Environmental Protection Agency
ES	eligible significant
ES NR	eligible significant NRHP
ESA	Endangered Species Act or Environmental Site Assessment
ESH	essential indigenous anadromous salmonid habitat
ESU	Evolutionarily Significant Unit
EWEB	Eugene Water & Electric Board
FAST Act	Fixing America's Surface Transportation Act
FEIS	Final Environmental Impact Statement. Also referred to as Final EIS.
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act of 1974
Final EIS	Final Environmental Impact Statement. Also referred to as FEIS.
FOE	Finding of Effect
FPPA	Farmland Protection Policy Act, 7 U.S.C. 4201-4209 and 7 CFR 658
FRA	Federal Railroad Administration
ft	foot (feet)
ft^2	square foot (feet)
FTA	Federal Transit Administration
FTN	Frequent Transit Network
FY	fiscal year
GAN	Grant Anticipation Note
GARVEE	Grant Anticipation Revenue Vehicle
GHG	greenhouse gas
GIS	geographic information system
GLO	General Land Office

Table A-1. Acronyms and Abbreviations

Acronyms and Abbreviations	Definitions
Heritage	Heritage Research Associates, Inc.
HGM	Hydro-geomorphic
HMTA	Hazardous Materials Transport Act of 1975, with amendments in 1990 and 1994
HOV	high-occupancy vehicle
HPNW	Historic Preservation Northwest
I-5	Interstate 5
I-105	Interstate 105
IOF	Immediate Opportunity Fund
ISA	International Society of Arboriculture
ISTEA	Intermodal Surface Transportation Efficiency Act
kV	kilovolt(s)
LaneACT	Lane Area Commission on Transportation
LCC	Lane Community College
LCDC	Land Conservation and Development Commission
LCOG	Lane Council of Governments
Ldn	day-night sound level
LE	Listed Endangered
LEP	limited English proficiency
L_{eq}	equivalent sound level
LF	lineal foot (feet)
LGAC	Local Government Affairs Council
LGGP	Local Government Grant Program
LID	Local Improvement District
L_{max}	maximum sound level
L_{min}	minimum sound level
LNG	liquefied natural gas
LOS	level of service
LPA	Locally Preferred Alternative
LRAPA	Lane Regional Air Protection Agency
LRFP	LTD's Long-Range Financial Plan
LRT	Light Rail Transit
LRTP	LTD's Long-Range Transit Plan
LT	Listed Threatened
LTD	Lane Transit District
LUST	leaking underground storage tank
LWCF	Land and Water Conservation Fund

Table A-1. Acronyms and Abbreviations

Acronyms and Abbreviations	Definitions
m	meter(s)
MAP-21	Moving Ahead for Progress in the 21st Century
MBTA	Migratory Bird Treaty Act
Metro Plan	*Metro Plan, Eugene-Springfield Metropolitan Area General Plan* (LCOG et al., 1987, as updated on 2015, December 31)
mg/kg	milligram(s) per kilogram
MI	mile(s)
mL	milliliter(s)
MMA	Michael Minor and Associates, Inc.
MOA	Memorandum of Agreement
MOE	Measure of Effectiveness
MPC	Metropolitan Policy Committee
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization
MTIP	*Metropolitan Transportation Improvement Program Federal FY 2015 to Federal FY 2018* (Central Lane MPO, adopted 2014, October, as amended)
Mw	Earthquake moment magnitude
N/A	not applicable
NA	not applicable; no data available
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAVD88	North American Vertical Datum of 1988
ND	nodal development
NEPA	National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321-4347
NFA	no further action
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_2	nitrous dioxide
NO_x	nitrous oxides
NPDES	National Pollutant Discharge Elimination System
NPMS	National Pipeline Mapping System
NPS	Department of Interior's National Park Service
NR	Natural Resource
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places

Table A-1. Acronyms and Abbreviations

Acronyms and Abbreviations	Definitions
NS	no standard established
NW Natural	Northwest Natural
O_3	ozone
O&M	operations and maintenance
OAR	Oregon Administrative Rule
OARRA	Oregon Archaeological Records Remote Access
ODA	Oregon Department of Agriculture
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
OPA	Oil Pollution Act of 1990
OPRD	Oregon Parks and Recreation Department
OR	Oregon
ORBIC	Oregon Biodiversity Information Center
ORS	Oregon Revised Statutes
OTIB	Oregon Transportation Infrastructure Bank
Pb	lead
PCB	polychlorinated biphenyl
PEM	Palustrine Emergent Wetland
PM	particulate matter
PM_{10}	particulate matter – 10 microns in diameter
$PM_{2.5}$	particulate matter – 2.5 microns in diameter
PMT	Project Management Team
ppb	parts per billion
PPE	personal protective equipment
ppm	parts per million
PROS	Parks, Recreation, and Open Space
PUC	Public Utilities Commission
Qls	landslide and debris avalanche deposits
Qtg	terrace and fan deposits
Qty	quantity
RCRA	Resource Conservation and Recovery Act of 1976
RFFA	reasonably foreseeable future action
ROW	right of way

Table A-1. Acronyms and Abbreviations

Acronyms and Abbreviations	Definitions
RRFB	Rectangular Rapid Flash Beacon
RTP	*Central Lane Metropolitan Planning Organization Regional Transportation Plan* (LCOG, adopted 2007, November; 2011, December). (The RTP includes the Financially Constrained Roadway Projects List)
SARA	Superfund Amendments and Reauthorization Act of 1986
SARA III	Emergency Planning and Community Right to Know Act of 1986; part of the SARA amendments
SC	sensitive critical
SCC	Standard Cost Categories
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SDC	Systems Development Charge
SDWA	Safe Drinking Water Act
sec	second(s)
Section 4(f)	Section 4(f) of the Department of Transportation Act of 1966
Section 6(f)	Section 6(f) of the LWCF Act of 1965
Section 106	Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800.5)
SF	square foot (feet)
SHPO	Oregon State Historic Preservation Office
SIP	State Implementation Plan
SMU	Species Management Unit
SO_2	sulfur dioxide
SOC	species of concern
SSGA	Small Starts Construction Grant Agreement
STA	Special Transportation Area
STIP	Statewide Transportation Improvement Program
SV	Sensitive Vulnerable
SY	square yard(s)
TAP	Transportation Alternatives Program
TAZ	transportation analysis zone
TCE	Temporary Construction Easement
TD	transit-oriented development
TDM	Transportation Demand Management
TEA-21	Transportation Equity Act for the 21st Century
Teoe	siliciclastic marine sedimentary rocks
TESCP	Temporary Erosion and Sediment Control Plan
TIF	Tax Increment Financing
TIP	Transportation Improvement Program

Table A-1. Acronyms and Abbreviations

Acronyms and Abbreviations	Definitions
TMDL	total maximum daily load
TOD	transit-oriented development
TPAU	Department of Transportation – Transportation Planning Analysis Unit
TPR	Transportation Planning Rule
TransPlan	*Eugene-Springfield Transportation System Plan* (City of Eugene et al., adopted 2002, July)
TRB	Transportation Research Board
TSI	Transportation System Improvement
TSM	Transportation System Management
TSP	Transportation System Plan
UGB	Urban Growth Boundary
UMTA	Urban Mass Transit Administration
Uniform Act	Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, 42 U.S.C. 4601 et. seq., 49 CFR Part 24
URA	Urban Renewal Area
U.S.C.	United States Code
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
v/c	volume-to-capacity
VHT	vehicle hours traveled
VMT	vehicle miles traveled
VOC	volatile organic compound
WEEE	West Eugene EmX Extension
WEG	wind erodibility group
YOE	year of expenditure

Terms

Table A-2. Terms

Terms	Definitions
Accessibility	The extent to which facilities are barrier-free and useable for all persons with or without disabilities.
Action	An "action," a federal term, is the construction or reconstruction, including associated activities, of a transportation facility. For the purposes of this Handbook, the terms "project," "proposal," and "action" are used interchangeably unless otherwise specified. An action may be categorized as a "categorical exclusion" or a "major federal action."
Agricultural/Forest/Natural Resource	AG, EFU-25, EFU-30, EFU-40, F-1, F-2, and NR
Alignment	Alignment is the street or corridor that the transit project would be located within.
Alternative Fuels	Low-polluting fuels which are used to propel a vehicle instead of high-sulfur diesel or gasoline. Examples include methanol, ethanol, propane or compressed natural gas, liquid natural gas, low-sulfur or "clean" diesel and electricity.
Alternatives Analysis (AA)	The process of evaluating the costs, benefits, and impacts of a range of transportation alternatives designed to address mobility problems and other locally-defined objectives in a defined transportation corridor, and for determining which particular investment strategy should be advanced for more focused study and development. The AA process provides a foundation for effective decision making.
Area of Potential Effect	A term used in Section 106 to describe the area in which historic resources may be affected by a federal undertaking.
Area of Potential Impact	An assessment's Area of Potential Impact for the project is defined separately for each discipline.
Auxiliary Lanes	Lanes designed to improve safety and reduce congestion by accommodating cars and trucks entering or exiting the highway or roadway, and reducing conflicting weaving and merging movements.
Base Fare	The price charged to one adult for one transit ride; excludes transfer charges, and reduced fares.
Base Period	The period between the morning and evening peak periods when transit service is generally scheduled on a constant interval. Also known as "off-peak period."
Boarding	Boarding is a term used in transit to account for passengers of public transit systems. One person getting on a transit vehicle equals one boarding. In many cases, individuals will have to transfer to an additional transit vehicle to reach their destination and may well use transit for the return trip. Therefore, a single rider may account for several transit boardings in one day.
Bus Phase	An exclusive traffic signal phase for buses and/or BRT vehicles.
Bus Rapid Transit (BRT)	A transit mode that combines the quality of rail transit and the flexibility of buses. It can operate on bus lanes, high-occupancy vehicle (HOV) lanes, expressways, or ordinary streets. The vehicles are designed to allow rapid passenger loading and unloading, with more doors than ordinary buses.

Table A-2. Terms

Terms	Definitions
Business Access and Transit (BAT) Lane	In general, a BAT lane is a concrete lane, separated from general-purpose lanes by a paint stripe and signage. A BAT lane provides Bus Rapid Transit (BRT) priority operations, but general-purpose traffic is allowed to travel within the lane to make a turn into or out of a driveway or at an intersecting street. However, only the BRT vehicle is allowed to use the lane to cross an intersecting street.
Busway	Exclusive freeway lane for buses and carpools.
Capital Improvements Program (CIP)	A CIP is a short-range plan, usually 4 to 10 years, which identifies capital projects and equipment purchases, provides a planning schedule, and identifies options for funding projects in the program.
Categorical Exclusion (CE)	A CE means a category of actions that do not individually or cumulatively have a significant effect on the human environment and for which, therefore, neither an environmental assessment nor an environmental impact statement is required.
Chambers Special Area Zone	S-C
Charter Tree	A tree defined by the Eugene Charter (City of Eugene, 2002, updated 2008) as "…(a living, standing, woody plant having a trunk 25 inches in circumference at a point 4-½ feet above mean ground level at the base of the trunk) of at least fifty years of age within publicly owned rights of way for streets, roads, freeways, throughways, and thoroughfares and within those portions of the City which were in the incorporated boundaries of the City as of January 1, 1915, shall be designated historic street trees and recognized as objects of high historic value and significance in the history of the City and deserving of maintenance and protection." These trees have special historic importance to the City and require special processes be followed if their removal is proposed, including a public vote on the project proposing the removal.
Charter Tree Boundary	Defined by the Eugene Charter (City of Eugene, 2002, updated 2008) as "…those portions of the City which were in the incorporated boundaries of the City as of January 1, 1915." Trees within this boundary may, if they meet certain criteria, be granted the special title and protective status of a Charter Tree, defined above.
City of Eugene Zoning Classifications	Industrial (I-2 and I-3), Commercial (C-3), Mixed-Use (C-1, C-2, GO, S-C, S-CN, S-DR, S-DW, S-E, S-F, S-HB, S-JW, S-RN, S-W, and S-WS), Single-Family Residential (R-1), Multi-Family Residential (R-2 and R-3), Institution (PL and PRO), Agricultural/Forest/Natural Resource (AG, EFU-25, EFU-30, EFU-40, F-1, F-2, and NR), Office (E-1 and E-2), Special Area Zone (Non-Mixed Use) (S-H and S-RP), Downtown Westside Special Area Zone (S-DW), Chambers Special Area Zone (S-C)
Clean Air Act Amendments of 1990	The comprehensive federal legislation that establishes criteria for attaining and maintaining the federal standards for allowable concentrations and exposure limits for various air pollutants; the act also provides emission standards for specific vehicles and fuels.
Collector Streets	Collector streets provide a balance of both access and circulation within and between residential and commercial/industrial areas. Collectors differ from arterials in that they provide more of a citywide circulation function, do not require as extensive control of access, and are located in residential neighborhoods, distributing trips from the neighborhood and local street system.
Commercial	C-3

Table A-2. Terms

Terms	Definitions
Commuter Rail	Commuter rail is a transit mode that is a multiple car electric or diesel propelled train. It is typically used for local, longer-distance travel between a central city and adjacent suburbs, and can operate alongside existing freight or passenger rail lines or in exclusive rights of way.
Compressed Natural Gas (CNG)	An alternative fuel; compressed natural gas stored under high pressure. CNG vapor is lighter than air.
Conformity	The ongoing process that ensures the planning for highway and transit systems, as a whole and over the long term, is consistent with the state air quality plans for attaining and maintaining health-based air quality standards; conformity is determined by metropolitan planning organizations (MPOs) and the U.S. Department of Transportation (USDOT), and is based on whether transportation plans and programs meet the provisions of a State Implementation Plan.
Congestion Mitigation and Air Quality (CMAQ)	Federal funds available for either transit or highway projects that contribute significantly to reducing automobile emissions, which cause air pollution.
Cooperating Agency	Regulations that implement the National Environmental Policy Act define a cooperating agency as any federal agency, other than a lead agency, which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major federal action significantly affecting the quality of the human environment.
Coordination Plan	Required under Moving Ahead for Progress in the 21st Century (MAP-21), the coordination plan contains procedures aimed at achieving consensus among all parties in the initial phase of environmental review and to pre-empt disagreements that can create delays later on in a project.
Corridor	A broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways, and transit route alignments.
Corridor Transit Service Characteristics	The amount of transit service provided in each corridor, measured by daily vehicle hours traveled, daily vehicle miles traveled, and daily place-miles of service.
Demand Responsive	Non-fixed-route service utilizing vans or buses with passengers boarding and alighting at pre-arranged times at any location within the system's service area. Also called “Dial-a-Ride.”
Diesel Multiple Unit (DMU)	Each unit carries passengers and can be self-powered by a diesel motor; no engine unit is required.
Documented Categorical Exclusion (DCE)	A DCE means a group of actions that may also qualify as Categorical Exclusions (CEs) if it can be demonstrated that the context in which the action is taken warrants a CE exclusion; i.e., that no significant environmental impact will occur. Thus, these actions are referred to as DCEs. Such actions require some National Environmental Policy Act documentation, but not an Environmental Assessment or a full-scale Environmental Impact Statement. DCEs documentation must demonstrate that, in the context(s) in which these actions are to be performed, they will have no significant environmental impact or that such impacts will be mitigated.
Downtown Westside Special Area Zone	S-DW

Table A-2. Terms

Terms	Definitions
Draft Environmental Impact Statement (DEIS)	The DEIS is the document that details the results of the detailed analysis of all of the projects alternatives. The DEIS contains all information learned about the impacts of a project and alternatives.
Earmark	A federal budgetary term that refers to the specific designation by Congress that part of a more general lump-sum appropriation be used for a particular project; the earmark can be designated as a minimum and/or maximum dollar amount.
Effects	Effects include ecological, aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial. Effects include: (1) direct effects that are caused by the action and occur at the same time and place, and (2) indirect effects that are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use; population density or growth rate; and related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8).
Electrical Multiple Unit (EMU)	The EMU is heavier than a light rail vehicle, but it is powered in the same way by an overhead electrical system.
EmX	Lane Transit District's Bus Rapid Transit System, pronounced "MX," short for Emerald Express.
Environmental Assessment (EA)	A report subject to the requirements of the National Environmental Policy Act (NEPA) demonstrating that an Environmental Impact Statement (EIS) is not needed for a specific set of actions. The EA can lead to a Finding of No Significant Impact (FONSI).
Environmental Impact Statement (EIS)	A comprehensive study of likely environmental impacts resulting from major federally-assisted projects; EISsare required by the National Environmental Policy Act.
Environmental Justice	A formal federal policy on environmental justice was established in February 1994 with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations." There are three fundamental environmental justice principles: • To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations. • To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process. • To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.
Envision Eugene	The City of Eugene's Comprehensive Plan (latest draft or as adopted). Envision Eugene includes a determination of the best way to accommodate the community's projected needs over the next 20 years.

Table A-2. Terms

Terms	Definitions
Evaluation Criteria	Evaluation criteria are the factors used to determine how well each of the proposed multimodal alternatives would meet the project's Goals and Objectives. The Evaluation Criteria require a mix of quantitative data and qualitative assessment. The resulting data are used to measure the effectiveness of proposed multimodal alternatives and to assist in comparing and contrasting each of the alternatives to select a preferred alternative.
Exclusive Right of Way	A roadway or other facility that can only be used by buses or other transit vehicles.
Fatal Flaw Screening	The purpose of a Fatal Flaw Screening is to identify alternatives that will not work for one reason or another (e.g., environmental, economic, community). By using a Fatal Flaw Screening process to eliminate alternatives that are not likely to be viable, a project can avoid wasting time or money studying options that are not viable and focus on alternatives and solutions that have the greatest probability of meeting the community's needs (e.g., environmentally acceptable, economically efficient, implementable).
Finding of No Significant Impact (FONSI)	A document prepared by a federal agency showing why a proposed action would not have a significant impact on the environment and thus would not require preparation of an Environmental Impact Statement (EIS). A FONSI is based on the results of an Environmental Assessment (EA).
Fixed Guideway System	A system of vehicles that can operate only on its own guideway constructed for that purpose (e.g., rapid rail, light rail). Federal usage in funding legislation also includes exclusive right of way bus operations, trolley coaches, and ferryboats as "fixed guideway" transit.
Fixed Route	Service provided on a repetitive, fixed-schedule basis along a specific route with vehicles stopping to pick up and deliver passengers at set stops and stations; each fixed-route trip serves the same origins and destinations, unlike demand responsive and taxicabs.
Geographic Information System (GIS)	A data management software tool that enables data to be displayed geographically (i.e., as maps).
Goals and Objectives	Goals and objectives define the project's desired outcome and reflect community values. Goals and objectives build from the project's Purpose and Need Statement. • Goals are overarching principles that guide decision making. Goals are broad statements. • Objectives define strategies or implementation steps to attain the goals. Unlike goals, objectives are specific and measurable.
Guideway	A transit right of way separated from general purpose vehicles.
Headway	Time interval between vehicles passing the same point while moving in the same direction on a particular route.

Table A-2. Terms

Terms	Definitions
Heritage Tree	The C*ity of Eugene Urban Forest Management Plan* (City of Eugene Public Works Department Maintenance Division, 1992) defines "Heritage Trees" as: "Any tree of exceptional value to our community based on its size (relative to species), history, location, or species, or any combination of these criteria." Such a tree cannot be removed "except when otherwise necessary for the public health, safety, or welfare."
Hydrology	Refers to the flow of water including its volume, where it drains, and how quickly it flows.
Impacts	A term to describe the positive or negative effects upon the natural or built environments as a result of an action (i.e., project).
In-vehicle Travel Time	The amount of time it takes for a transit vehicle to travel between an origin and a destination.
In-vehicle Walk and Wait Travel Time	The amount of in-vehicle travel time plus time spent walking to transit, initial wait time, transfer wait time (if any), and time walking from transit to the destination.
Independent Utility	A project or section of a larger project that would be a usable and reasonable expenditure even if no other projects or sections of a larger project were built and/or improved.
Industrial	I-2 and I-3
Institution	PL and PRO
Intergovernmental Agreement	A legal pact authorized by state law between two or more units of government, in which the parties contract for, or agree on, the performance of a specific activity through either mutual or delegated provision.
Intermodal	Those issues or activities that involve or affect more than one mode of transportation, including transportation connections, choices, cooperation, and coordination of various modes. Also known as "multimodal."
Jefferson Westside Special Area Zone	S-JW
Joint Development	Ventures undertaken by the public and private sectors for development of land around transit stations or stops.
Key Transit Corridors	Key Transit Corridors are mapped in Envision Eugene and are anticipated to be significant transit corridors for the City and the region
Kiss & Ride	A place where commuters are driven and dropped off at a station to board a public transportation vehicle.
Land and Water Conservation Fund (LWCF) Act of 1965	16 U.S.C. 4601-4 et seq. The Land and Water Conservation Fund (LWCF) State Assistance Program was established by the LWCF Act of 1965 to stimulate a nationwide action program to assist in preserving, developing, and providing assurance to all citizens of the United States (of present and future generations) such quality and quantity of outdoor recreation resources as may be available, necessary, and desirable for individual active participation. The program provides matching grants to states and through states to local units of government, for the acquisition and development of public outdoor recreation sites and facilities.
Landscape Tree	A living, standing, woody plant having a trunk that exists on private property.

Table A-2. Terms

Terms	Definitions
Lane Regional Air Protection Agency (LRAPA)	LRAPA is responsible for achieving and maintain clean air in Lane County using a combination of regulatory and non-regulatory methods
Layover Time	Time built into a schedule between arrival at the end of a route and the departure for the return trip, used for the recovery of delays and preparation for the return trip.
Lead Agency	The organization that contracts and administers a study. For transit projects, FTA would typically fill this role. The lead agency has the final say about the project's purpose and need, range of alternatives to be considered, and other procedural matters.
Level of Detail	The amount of data collected, and the scale, scope, extent, and degree to which item-by-item particulars and refinements of specific points are necessary or desirable in carrying out a study.
Level of Service (LOS)	LOS is a measure used by traffic engineers to determine the effectiveness of elements of transportation infrastructure. LOS is most commonly used to analyze highways, but the concept has also been applied to intersections, transit, and water supply.
Light Rail Transit (LRT)	Steel wheel/steel rail transit constructed on city streets, semi-private right of way, or exclusive private right of way. Formerly known as "streetcar" or "trolley car" service, LRT's major advantage is operation in mixed street traffic at grade. LRT vehicles can be coupled into trains, which require only one operator and often are used to provide express service.
Limited (or Controlled) Access	Restricted entry to a transportation facility based upon facility congestion levels or operational condition. For example, a limited access roadway normally would not allow direct entry or exit to private driveways or fields from said roadway.
Limited English Proficiency (LEP)	A characteristic of individuals who do not speak English as their primary language and have limited ability to read, write, speak, and/or understand English. LEP individuals may be competent in English for certain types of communication (such as speaking or understanding), but still be LEP for other purposes (such as reading or writing).
Liquefaction	A phenomenon associated with earthquakes in which sandy to silty, water saturated soils behave like fluids. As seismic waves pass through saturated soil, the structure of the soil distorts, and spaces between soil particles collapse, causing ground failure.
Liquefied Natural Gas (LNG)	An alternative fuel; a natural gas cooled to below its boiling point of 260 degrees Fahrenheit so that it becomes a liquid; stored in a vacuum bottle-type container at very low temperatures and under moderate pressure. LNG vapor is lighter than air.
Local Streets	Local streets have the sole function of providing direct access to adjacent land. Local streets are deliberately designed to discourage through-traffic movements.
Locally Preferred Alternative (LPA)	The LPA is the alternative selected through the Alternatives Analysis (AA) process completed prior to or concurrent with National Environmental Policy Act analysis. This term is also used to describe the proposed action that is being considered for New Starts or Small Starts funds.

Table A-2. Terms

Terms	Definitions
Low-Income Persons	Those whose median household income is at or below the Department of Health and Human Services poverty guidelines. For a four-person household with two related children, the poverty threshold is $24,300 (year 2016 dollars).
Maintenance area	An air quality designation for a geographic area in which levels of a criteria air pollutant meet the health-based primary standard (national ambient air quality standard, or NAAQS) for the pollutant. An area may have on acceptable level for one criteria air pollutant, but may have unacceptable levels for others. Maintenance/attainment areas are defined using federal pollutant limits set by EPA.
Maintenance facility	A facility along a corridor used to clean, inspect, repair and maintain bus vehicles, as well as to store them when they are not in use.
Major Arterial	Major arterial streets should serve to interconnect the roadway system of a city. These streets link major commercial, residential, industrial, and institutional areas. Major arterial streets are typically spaced about one mile apart to assure accessibility and reduce the incidence of traffic using collectors or local streets for through traffic in lieu of a well-placed arterial street. Access control, such as raised center medians, is a key feature of an arterial route. Arterials are typically multiple miles in length.
Major Investment Study (MIS)	An alternatives analysis study process for proposed transportation investments in which a wide range of alternatives is examined to produce a smaller set of alternatives that best meet project transportation needs. The purpose of the study is to provide a framework for developing a package of potential solutions that can then be further analyzed during an Environmental Impact Statement process.
Metro Plan Designations	Commercial, Commercial/Mixed Use, Government and Education, Heavy Industrial, High Density Residential/Mixed-Use, High Density Residential, Light-Medium Industrial, Low Density Residential, Medium Density Residential, Medium Density Residential/Mixed-Use, Mixed-Use, Parks and Open Space, Major Retail Center, Campus Industrial, University Research
Metropolitan Planning Organization (MPO)	The organization designated by local elected officials as being responsible for carrying out the urban transportation and other planning processes for an area.
Minimum Operable Segment	A stand-alone portion of the alternative alignment that has independent utility, allowed by FTA to be considered as interim termini for a project. A minimum operable segment (MOS) provides flexibility to initiate a project with available funding while pursuing additional funding to complete the remainder of the project.
Minor Arterial	A minor arterial street system should interconnect with and augment the urban major arterial system and provide service to trips of moderate length at a somewhat lower level of travel mobility than major arterials. This system also distributes travel to geographic areas smaller than those identified with the higher system. The minor arterial street system includes facilities that allow more access and offer a lower traffic mobility. Such facilities may carry local bus routes and provide for community trips, but ideally should not be located through residential neighborhoods.

Table A-2. Terms

Terms	Definitions
Minority Persons	A person who is one or more of the following: • Black: a person having origins in any of the black racial groups of Africa • Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race • Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent • American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition • Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands
Mitigation	A means to avoid, minimize, rectify, or reduce an impact, and in some cases, to compensate for an impact.
Mixed-Use	C-1, C-2, GO, S-C, S-CN, S-DR, S-DW, S-E, S-F, S-HB, S-JW, S-RN, S-W, and S-WS
Modal Split	A term that describes how many people use different forms of transportation. Frequently used to describe the percentage of people using private automobiles as opposed to the percentage using public transportation, walking, or biking. Modal split can also be used to describe travelers using other modes of transportation. In freight transportation, modal split may be measured in mass.
Mode	A particular form or method of travel distinguished by vehicle type, operation technology, and right-of-way separation from other traffic.
Moving Ahead for Progress in the 21st Century (MAP-21)	Moving Ahead for Progress in the 21st Century (MAP-21) was signed by President Obama on July 6, 2012, reauthorizing surface transportation programs through FY 2014. It includes new and revised program guidance and regulations with planning requirements related to public participation, publication, and environmental considerations.
MovingAhead Project	The City of Eugene and LTD are working with regional partners and the community to determine which improvements are needed on some of our most important transportation corridors for people using transit, and facilities for people walking and biking. MovingAhead will prioritize transit, walking, and biking projects along these corridors so that they can be funded and built in the near-term. The project will focus on creating active, vibrant places that serve the community and accommodate future growth. During Phase 1, currently underway, the community will weigh in on preferred transportation solutions for each corridor and help prioritize corridors for implementation. When thinking about these important streets, LTD and the City of Eugene refer to them as corridors because several streets may work as a system to serve transportation needs.
Multi-Family Residential	R-2 and R-3
Multimodal	Multimodal refers to various modes. For the MovingAhead project, multimodal refers to Corridors that support various transportation modes including vehicles, buses, walking and cycling.

Table A-2. Terms

Terms	Definitions
National Environmental Policy Act of 1969 (NEPA)	A comprehensive federal law requiring analysis of the environmental impacts of federal actions such as the approval of grants; also requiring preparation of an Environmental Impact Statement for every major federal action significantly affecting the quality of the human environment.
New Starts	Federal funding granted under Section 3(i) of the Federal Transit Act. These discretionary funds are made available for construction of a new fixed guideway system or extension of any existing fixed guideway system, based on cost-effectiveness, alternatives analysis results, and the degree of local financial commitment.
No Action or No-Build Alternative	An alternative that is used as the basis to measure the impacts and benefits of the other alternative(s) in an environmental assessment or other National Environmental Policy Act action. The No-Build Alternative consists of the existing conditions, plus any improvements that have been identified in the Statewide Transportation Improvement Program.
Nonattainment Area	Any geographic region of the United States that the U.S. Environmental Protection Agency (EPA) has designated as not attaining the federal air quality standards for one or more air pollutants, such as ozone and carbon monoxide.
Notice of Intent	A federal announcement, printed in the *Federal Register*, advising interested parties that an Environmental Impact Statement will be prepared and circulated for a given project
Off-Peak Period	Non-rush periods of the day when travel activity is generally lower and less transit service is scheduled. Also called "base period."
Office	E-1 and E-2
Oregon Statewide Comprehensive Outdoor Recreation Plan (SCORP)	The 2013-2017 Oregon Statewide Comprehensive Outdoor Recreation Plan (SCORP), entitled *Ensuring Oregon's Outdoor Legacy* (OPRD, No Date), constitutes Oregon's basic 5-year plan for outdoor recreation. The plan guides the use of LWCF funds that come into the state; provides guidance for other OPRD-administered grant programs; and provides recommendations to guide federal, state, and local units of government, as well as the private sector, in making policy and planning decisions.
Park and Ride	Designated parking areas for automobile drivers who then board transit vehicles from these locations.
Participating Agency	A federal or non-federal agency that may have an interest in the project. These agencies are identified and contacted early-on in the project with an invitation to participate in the process. This is a broader category than "Cooperating Agency" (see Cooperating Agency).
Passenger Miles	The total number of miles traveled by passengers on transit vehicles; determined by multiplying the number of unlinked passenger trips times the average length of their trips.
Peak Hour	The hour of the day in which the maximum demand for transportation service is experienced (refers to private automobiles and transit vehicles).
Peak Period	Morning and afternoon time periods when transit riding is heaviest.

Table A-2. Terms

Terms	Definitions
Peak/Base Ratio	The number of vehicles operated in passenger service during the peak period divided by the number operated during the base period.
Place-miles	Place-miles refers to the total carrying capacity (seated and standing) of each bus and is calculated by multiplying vehicle capacity of each bus by the number of service miles traveled each day. Place-miles highlight differences among alternatives caused by a different mix of vehicles and levels of service.
Preferred Alternative	An alternative that includes a major capital improvement project to address the problem under investigation. As part of the decision making process, the Preferred Alternative is compared against the No Action or No-Build Alternative from the standpoints of transportation performance, environmental consequences, cost-effectiveness, and funding considerations.
Purpose and Need	The project Purpose and Need provides a framework for developing and screening alternatives. The purpose is a broad statement of the project's transportation objectives. The need is a detailed explanation of existing conditions that need to be changed or problems that need to be fixed.
Queuing	Occurs when traffic lanes cannot fit all the vehicles trying to use them, or if the line at an intersection extends into an upstream intersection.
Record of Decision (ROD)	A decision made by FTA as to whether the project sponsor receives federal funding for a project. The Record of Decision follows the Draft EIS and Final EIS.
Regulatory Agency	An agency empowered to issue or deny permits.
Resource Agency	A federal or state agency or commission that has jurisdictional responsibilities for the management of a resource such as plants, animals, water, or historic sites.
Revenue Hours	Hours of transit service available for carrying paying riders.
Ridership	The number of people using a public transportation system in a given time period.
Ridesharing	A form of transportation, other than public transit, in which more than one person shares the use of the vehicle, such as a van or car, to make a trip. Also known as "carpooling" or "vanpooling."
Right of Way	Publicly owned land that can be acquired and used for transportation purposes.
Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA-LU)	SAFETEA-LU was passed by Congress July 29, 2005, and signed by the President August 10, 2005. Includes new and revised program guidance and regulations (approximately 15 rulemakings) with planning requirements related to public participation, publication, and environmental considerations. SAFETEA-LU covers FY 2005 through FY 2009 with a total authorization of $45.3 billion.
Scoping	A formal coordination process used to determine the scope of the project and the major issues likely to be related to the proposed action (i.e., project).
Screening Criteria	Criteria used to compare alternatives.
Section 4(f) of the Department of Transportation Act of 1966	23 U.S.C. 138 and 49 U.S.C. 303. Parks are subject to evaluation in the context of Section 4(f) of the Department of Transportation Act of 1966, which governs the use of publicly-owned/open to the public park and recreation lands, government-owned wildlife lands, and historic resources.

Table A-2. Terms

Terms	Definitions
Section 4(f) resources	(i) any publicly owned land in a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or (ii) any land from a historic site of national, state, or local significance
Section 6(f) of the LWCF Act of 1965	The LWCF's most important tool for ensuring long-term stewardship is its "conversion protection" requirement. Section 6(f)(3) strongly discourages conversions of state and local park, and recreational facilities to other uses. Conversion of property acquired or developed with assistance under the program requires approval of the Department of Interior's National Park Service (NPS) and substitution of other recreational properties of at least equal fair market value, and of reasonably equivalent usefulness and location.
Section 106	Section 106 of the National Historic Preservation Act of 1966 requires that federal agencies take into account the effect of government-funded construction projects on property that is included in, or eligible for inclusion in, the NRHP.
Shuttle	A public or private vehicle that travels back and forth over a particular route, especially a short route or one that provides connections between transportation systems, employment centers, etc.
Single-Family Residential	R-1
Special Area Zone (Non-Mixed Use)	S-H and S-RP
Springfield 2030	Currently underway, this update to the City of Springfield's Comprehensive Plan will guide and support attainment of the community's livability and economic prosperity goals and redevelopment priorities.
Springfield Transportation System Plan (TSP)	The City of Springfield's Transportation System Plan looks at how the transportation system is currently used and how it should change to meet the long-term (20-year) needs of the City of Springfield's residents, businesses, and visitors. The Plan, which identifies improvements for all modes of transportation, will serve as the City of Springfield's portion of the Regional Transportation System Plan prepared by Lane Council of Governments (LCOG). It was prepared in coordination with Oregon Department of Transportation, LCOG, and the Oregon Department of Land Conservation and Development. The TSP was adopted March 11, 2014.
State Implementation Plan (SIP)	A state plan mandated by the Clean Air Act Amendments of 1990 that contains procedures to monitor, control, maintain, and enforce compliance with national standards for air quality.
Strategy	An intended action or series of actions which when implemented achieves the stated goal.
Street Tree	A living, standing, woody plant having a trunk that exists in the public right of way.
Study Area	The area within which evaluation of impacts is conducted. The study area for particular resources will vary based on the decisions being made and the type of resource(s) being evaluated.
Throughput	The number of users being served at any time by the transportation system.

Table A-2. Terms

Terms	Definitions
Title VI	This Title declares it to be the policy of the United States that discrimination on the ground of race, color, or national origin shall not occur in connection with programs and activities receiving federal financial assistance and authorizes and directs the appropriate federal departments and agencies to take action to carry out this policy.
Transit Oriented Development (TOD) or Nodal Development	A strategy to build transit ridership, while discouraging sprawl, improving air quality and helping to coordinate a new type of community for residents. TODs are compact, mixed-use developments situated at or around transit stops. Sometimes referred to as Transit Oriented Communities, or Transit Villages.
Transit System	An organization (public or private) providing local or regional multi-occupancy-vehicle passenger service. Organizations that provide service under contract to another agency are generally not counted as separate systems.
Transitway	A Bus Rapid Transit (BRT) priority lane generally with a concrete lane, with or without concrete tracks with grass-strip divider, and a curb separation, traversable by general-purpose vehicles at signalized intersections.
Transportation Demand Management (TDM)	Strategies to attempt to reduce peak period automobile trips by encouraging the use of high occupancy modes through commuter assistance, parking incentives, and work policies that alter the demand for travel in a defined area in terms of the total volume of traffic, the use of alternative modes of travel, and the distribution of travel over different times of the day.
Transportation Improvement Program (TIP)	A program of intermodal transportation projects, to be implemented over several years, growing out of the planning process and designed to improve transportation in a community. This program is required as a condition of a locality receiving federal transit and highway grants.
Travel Shed	Synonymous with “corridor” (see Corridor). A subarea in which multiple transportation facilities are experiencing congestion, safety, or other problems.
urban plaza	An urban plaza is a place that can be used for socializing, relaxation, and/or events.
v/c ratio	Used as a principal measure of congestion. The “v” represents the volume or the number of vehicles that are using the roadway at any particular period. The “c” represents the capacity of a roadway at its adopted level of service (LOS). If the volume exceeds the capacity of the roadway (volume divided by capacity exceeds 1.00), congestion exists.
Vehicle Hours of Delay	Cumulative delay experiences by transit vehicles during high traffic periods.
Water Quality	Refers to the characteristics of the water, such as its temperature and oxygen levels, how clear it is, and whether it contains pollutants.
Whiteaker Special Area Zone	S-W

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Appendix B: Construction Activities and Methods

General Construction Methods

The following section describes how construction of the Locally Preferred Alternative (LPA) would likely be staged and sequenced. This description is based on Lane Transit District's (LTD's) experience with the Franklin, Gateway, and West Eugene EmX Corridors. The final plan for construction methods, sequencing, and staging will be determined in coordination with the contractor and permitting authorities.

Utility work will generally be completed before the transportation infrastructure is constructed. Utility work, often conducted by local utility companies, occurs separately from project-related construction. After completing required utility relocation and other preparatory site work, the contractor will begin with construction of new transit lanes, bike lanes, sidewalks, and any other "flatwork." The contractor will modify existing signals or construct new traffic signals as part of this work. In some cases, the contractor may construct the signal footings but install signal arms after initial work is complete. Flatwork for stations, including curbs, ramps, and station footings, will be completed as the work progresses along the alignment. Streets and street segments will be restored to normal operations after this work is complete. The contractor is expected to progress approximately two blocks every 2 weeks, with additional time required – up to 2 weeks – for each enhanced stop or EmX station. Additional time will be required at intersections that require new or substantially modified traffic signals. The construction sequencing will be determined through coordination between the contractor and local residents, businesses, and property owners regarding construction scheduling preferences. It is expected that, for each major segment, the work would start at one end of the segment and progress to the other end of the segment. All flatwork is expected to be completed in two construction seasons.

Stations will be fabricated during the second construction season and installed during the subsequent (final) construction season, along with landscaping, fare machines, real-time passenger information, enhanced stop or EmX station amenities, and other similar items.

The contractor and LTD will coordinate closely with the Oregon Department of Transportation (ODOT) and with the City of Eugene (as appropriate to the jurisdiction) on traffic control. Depending on the segment, ODOT or the City will review and approve traffic plans for construction.

On streets with multiple lanes in each direction (or multiple lanes in one direction for one-way streets), at least one lane of traffic will be open at all times. Flaggers will coordinate travel at intersections and other points of congestion, as necessary. On streets with a single lane, it may be necessary to close one direction of traffic for certain periods. In those situations, flaggers will be used to manage the traffic flow safely. The contractor and LTD will also coordinate with businesses to ensure that the project maintains access for patrons and deliveries.

Coordination with Businesses and Residents

LTD's Franklin, Gateway, and West Eugene EmX projects demonstrated LTD's commitment to communicating with impacted businesses, residences, and travelers, both before and during construction. As with those projects, LTD will contact all businesses and residents along the alignment well before construction begins to solicit local concerns, issues, and scheduling preferences. Businesses and residents will also be able to communicate with the contractor and LTD during construction. LTD's construction liaison will provide e-mail updates and serve as an ongoing point of contact to address

concerns and to provide information to affected businesses, residents, and other interested persons. LTD will provide a 24-hour hotline to quickly address construction concerns from businesses and residences.

LTD will also work to enhance activity at businesses affected by construction. This can be done through attractive signage, direct communications with the public (e.g., direct mail and advertising), and community events (e.g., street fairs). These techniques succeeded in keeping business areas active during previous EmX projects.