Main-McVay Transit Study
Tier 1 Screening Evaluation Report

DRAFT

SEPTEMBER 2014

A collaborative study between:

SPRINGFIELD OREGON

Lane Transit District

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For Additional Information or to Comment

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Written Comments at Meetings	A Comment Box is available at Stakeholder Advisory Committee meetings for submitting written comments. Please note that oral comments are not taken at these meetings. Refer to the website for the dates and locations of meetings

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1 Summary

The Main-McVay Transit Study is intended to identify and evaluate the most appropriate and promising transit options for the Main-McVay Corridor to be pursued by Lane Transit District (LTD) and the city of Springfield. This Study is one of a number of studies being conducted by the city of Springfield as the City considers the future of the "heart" of the community. Information about this Study as well as other area studies can be found at http://ourmainstreetspringfield.org.

1.1 Glossary of Acronyms, Abbreviations and Terms

Transportation projects can be complicated and are often difficult to understand because of the acronyms, terms and abbreviations used in technical documents and presentations. Attachment A is a glossary of acronyms, terms, and abbreviations used often in transportation studies.

1.2 Report Purpose and Organization

The purpose of this report is to summarize the findings of the Tier I Screening Evaluation of proposed transit solutions in the Main-McVay Corridor. This report will be used by the project team, the Stakeholder Advisory Committee, and the Governance Team to narrow the broad range of transit improvement solutions and select a smaller range of transit solutions for further evaluation and consideration. This report is organized as follows:

Chapter 1. Summary: This chapter provides an overview of this Report and a summary of the key findings.

Chapter 2. Introduction: This chapter describes the purpose of the study, the project and its Study Area, the problem statement for the project, the secondary goals and objective to be achieved by the project, and the criteria used to evaluate conceptual transit solutions.

Chapter 3. Study Process: This chapter provides a description of the study process.

Chapter 4. **Proposed Transit Solutions**: This chapter presents the transportation and environmental conditions in the Corridor. For each environmental discipline, there is a discussion of the existing and future conditions; resulting opportunities and constraints for the various transit solutions in the Corridor; and, conclusions relevant to the study.

Chapter 5. Tier I Screening: This chapter presents a summary of the screening findings which gauges whether or not the proposed transit solutions address the Study's Purpose, Need, Goals and Objectives and the project team's recommendations.

Chapter 6. Next Steps: A summary description of the next steps in the Study is included in this Chapter.

Appendix A. Glossary of Acronyms, Abbreviations, and Terms: This appendix includes definitions for acronyms, abbreviations and terms used in this report.

Appendix B. References: This appendix lists the references and sources consulted in preparing this report.

1.3 Draft Problem Statement, Purpose and Need

Using input collected through community conversations and other project outreach, the project team worked with the Stakeholder Advisory Committee and the Governance Team to develop the project's draft Problem Statement, Purpose and Need Statement, a set of Goals and Objectives, and Evaluation Criteria (see Chapter 2 of this Report). The Goals and Objectives used in this study are consistent with the Transportation Planning Rule (TPR), the Springfield 2035 Transportation System Plan, the Springfield Comprehensive Plan (i.e., *Metro Plan*), ODOT's transportation policies, and community values. Project goals and objectives are also consistent with the National Environmental Policy Act (NEPA).

1.4 Environmental Background Review and Conclusions

This Study has considered information and data from existing plans and studies, policies, rules, regulations, and standards for the following disciplines:

- Acquisitions and Displacements
- Air Quality
- Archaeological Resources
- Biological Resources
- Cultural/Historic Resources
- Energy
- Environmental Justice
- Geology / Geotechnical
- Hazardous Materials
- Land Use and Prime Agricultural Lands
- Noise
- Parklands and Section 4(f) and 6(f) Resources
- Socioeconomics
- Transportation including traffic, parking, transit, bicycle, pedestrian, freight
- Utilities
- Visual and Aesthetic Resources
- Water Resources (includes floodplains, groundwater and stormwater)
- Wetlands and Waters of State and U.S.

The information and data were primarily from existing sources and were reviewed and analyzed to determine existing and future conditions in the Main-McVay Corridor. Field surveys were conducted for four resources: archaeological, historic, biological, and wetlands.

Using information from the background research and field surveys, the project team identified opportunities and constraints for transit improvements in the Corridor. Opportunities and constraints are natural resources, the built environment, or regulations that may either constrain or provide project development opportunities. The information from the environmental background review and findings were compiled in the Main-McVay Transit Study Baseline Existing and Future Conditions Report (2014).

2 Introduction

2.1 Project Study Area

The Main -McVay Corridor generally follows Main Street from approximately 69th Street to the Glenwood area (east-west), and McVay Highway to Lane Community College (north-south). The preliminary Study Area encompasses an area approximately one-half mile from either side of Main Street and McVay Highway (Figure 2.1-1).

Figure 2.1-1. Preliminary Study Area for Main-McVay Transit Study

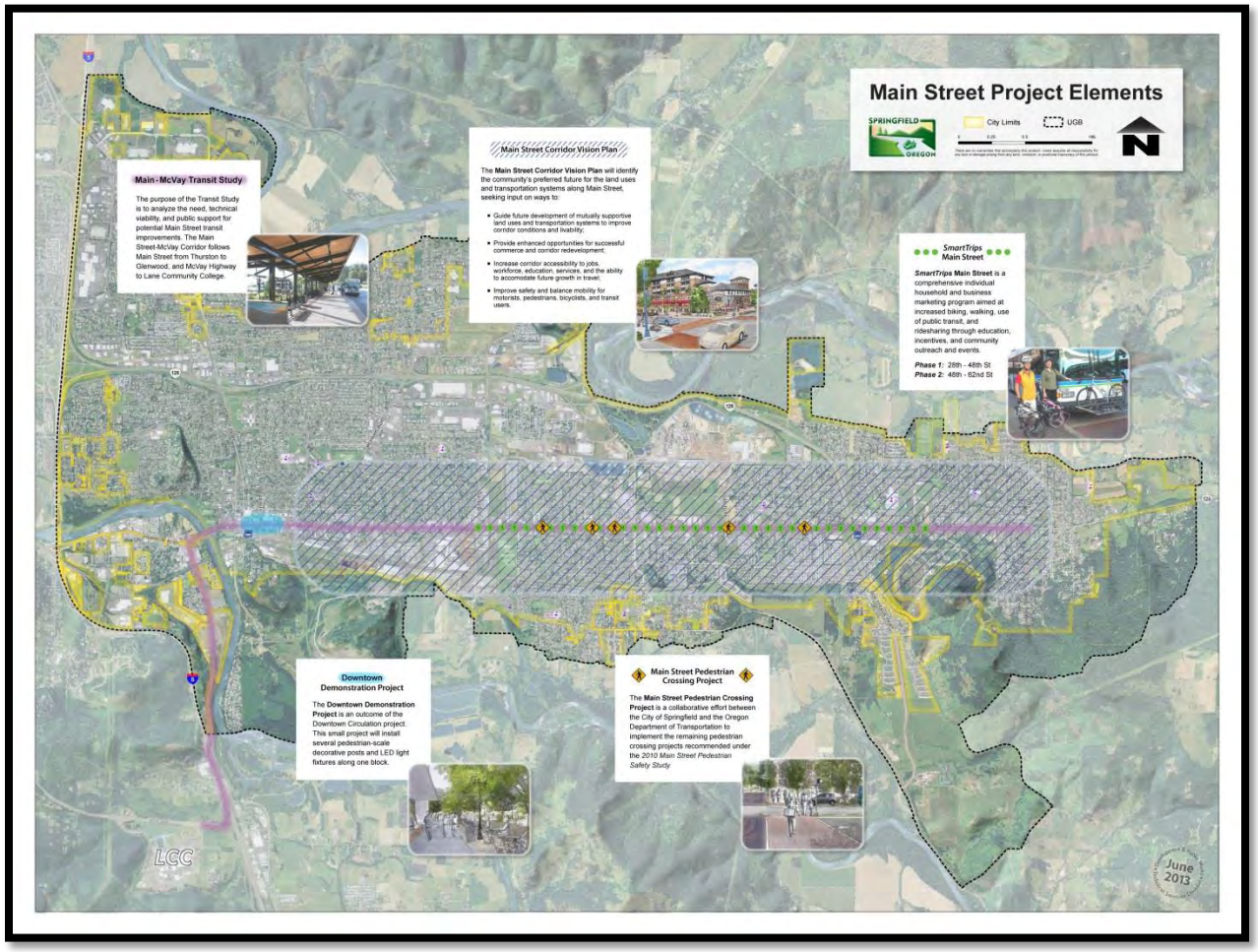
Source: Lane Transit District. 2014.

2.2 Relationship to Other Area Projects

There are five related projects occurring in the area of the Main-McVay Transit Study. There are four projects occurring in the Main Street corridor (Smart*Trips*, Downtown Demonstration, Main Street Vision, Pedestrian Crossings) that have been closely coordinated with initial public outreach for the

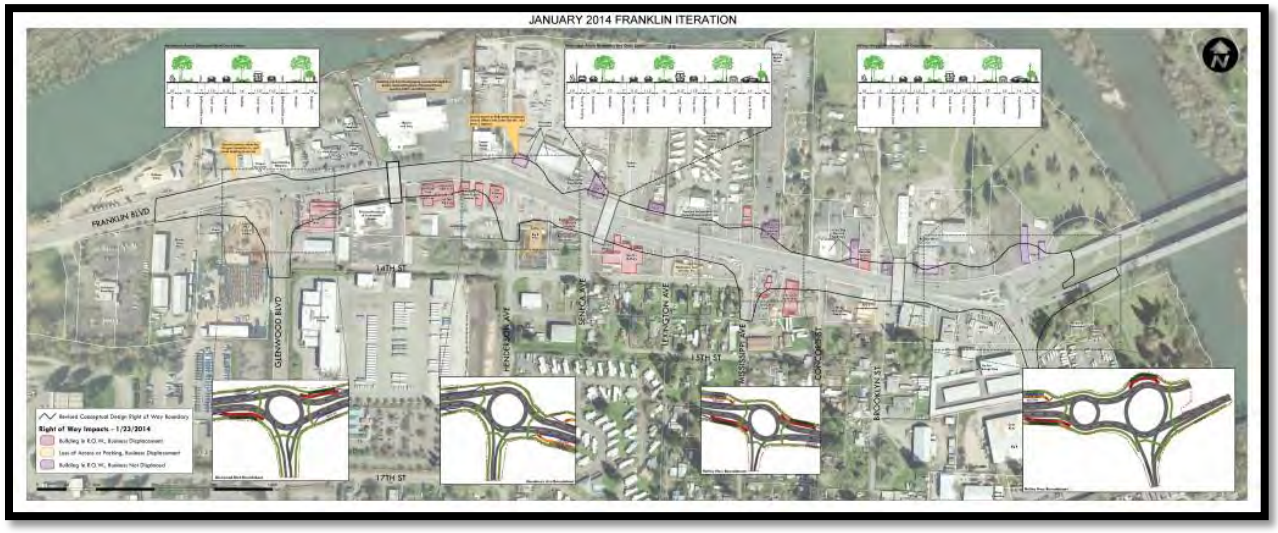
Main-McVay Transit Study (Figure 2.2-1). It is critical that all five of these projects are coordinated and managed in a way that is understandable to the community in terms of consistency and interrelationships. To date, the five Main Street projects (not including the Franklin Blvd Project) have been coordinated through a three-tiered management structure that includes project direction provided by the Governance Team. There is one additional project that is relevant to the Main-McVay Transit Study: the Franklin Boulevard Redevelopment Project. With the recent completion of the NEPA analysis, this Project is now moving into the Project Development phase (final design and right-of-way negotiations) and Phase I (Franklin / McVay intersection to Mississippi Ave) Construction to follow (Figure 2.2-2). Each of the projects is summarized below.

Figure 2.2-1. Main Street Projects



Source: City of Springfield. 2014.

Figure 2.2-2. Franklin Boulevard Project Area



Source: City of Springfield, Oregon. 2014.

2.2.1 Main Street Projects Overview

Throughout Springfield's history Main Street has been the "heart" of the community. Now, the City has a great opportunity to look at and think about the future of the seven miles that make up the Main Street corridor, and to identify and discuss potential changes along the corridor that will leverage the local economy and the quality of the community for decades to come. From the Willamette River out to Thurston, Main Street serves the community in many ways.

The city of Springfield, in partnership with Oregon Department of Transportation and Lane Transit District, is coordinating the Main Street Projects to look at:

- pedestrian crossing improvements;
- feasibility of transit improvements;
- determining the community's vision for future development along the corridor;
- improving pedestrian-scale lighting in downtown; and
- providing assistance to individuals who want to learn about and take advantage of a full range of travel options.

These efforts are being accomplished by using federal and state funds along with local matching funds. Springfield's Mayor and Council place a very high value on open and transparent public processes that involve Springfield citizens and other stakeholders in exploring issues and identifying problems and solutions.

2.2.1.1 Main Street Corridor Vision Plan

The Vision Plan identifies the community's preferred future for the land uses and transportation systems on Main Street. This planning process started in 2013 and is currently on-going.

2.2.1.2 Main Street Pedestrian Crossing Project

In a collaborative effort between the City of Springfield, Oregon Department of Transportation (ODOT) and LTD, six pedestrian crossing projects recommended under the *2010 Main Street Pedestrian Safety Study* are being implemented in order to provide improved crossing opportunities along the Main Street corridor.

The City of Springfield is the lead in overseeing the public outreach, construction and installation of the pedestrian crossings. The city of Springfield conducts stakeholder outreach in each location before construction occurs to perform analysis and determine possible mitigation measures related to the crossings.

The *2010 Main Street Pedestrian Safety Study* recommended a total of eight pedestrian crossings. To date two crossings have been installed by ODOT at 51st and 44th Streets, two are under construction at 35th and 41st Streets, and two are currently being analyzed and coordinated with business and property owners at 48th Street and Chapman Lane. The remaining two crossings to be installed by the city of Springfield will start analysis and coordination with stakeholders in spring 2015.

2.2.1.3 Downtown Demonstration Project

As an outcome of the downtown circulation project, this small project will install pedestrian scale decorative posts with LED light fixtures along several block faces and eventually enhance existing crosswalks with brick pattern pavement markings in Springfield's downtown. Lighting will be installed on Main Street from Pioneer Parkway East to 6th Street, on South 5th Street from Main to South A Street, and on 6th Street from Main Street to the alley between Main Street and South A Street (i.e. the alley next to City Hall). The LED light fixtures have been identified for installation in this key location of Springfield's downtown to improve safety, visibility, and aesthetic in the area. Currently the lighting phase of the project is underway is expected to be complete by summer 2015.

2.2.1.4 SmartTrips Main Street

SmartTrips is a comprehensive individual household and business outreach program aimed at increasing biking, walking, use of

public transit, and ridesharing. Through education, incentives, and community outreach and events, Smart*Trips* encourages residents to use transportation options. Smart*Trips*: Springfield launched the Gateway program in 2012, the Hayden Bridge program in 2013, and the Main Street Program (Phase I) was recently completed. Main Street Program (Phase II) will take place in 2015. Smart*Trips* is a collaborative effort between the City of Springfield and Point2point, a part of Lane Transit District (LTD), the Regional Transportation Options Program.

2.2.2 Franklin Boulevard Redevelopment Project

While not part of the "5 Main Street Project Elements," the Franklin Boulevard Redevelopment Project is related to this Main-McVay Transit Study. The city of Springfield is beginning the design of improvements to Franklin Boulevard to support redevelopment and new investment in the Glenwood area. The Franklin Boulevard Redevelopment study considered design concepts for Franklin Boulevard Highway from I-5 to Nugget Way and for the intersection of Franklin Boulevard and McVay Highway near the Springfield bridges. The project recently received approval for a Categorical Exclusion NEPA classification as part of the National Environmental Protection Act (NEPA) process. The City is currently finalizing a Scope of Work for the final design and right-of-way negotiations. Construction of Phase I (Franklin / McVay intersection to Mississippi Ave) will follow.

2.3 Study Problem Statement

The following draft Problem Statement was prepared by the Stakeholder Advisory Committee and approved by the Governance Team (on September 4, 2014).

The Main-McVay Corridor is an L-shaped Corridor extending from 69th Street on Main Street to Lane Community College on McVay Highway. The Corridor is comprised of two segments, the Main Street Segment and the McVay Highway Segment, which connect at Franklin Boulevard and McVay Highway. Main Street and McVay Highway are currently major transit corridors, connecting with each other and with other transit service at the Springfield Transit Station. The segments, while part of an overall corridor, have differing issues and concerns that are to be addressed by this study.

Main Street Segment

Transit Service on Main Street is hindered by overcrowded buses, increasing transit travel time and operating cost caused by signal and passenger boarding delays, and safety and security issues for passengers accessing buses at transit stops that are poorly lit and not located at signalized street crossings. If not addressed, these issues will worsen in the future as the corridor's population, employment, and transit ridership increase.

McVay Highway Segment

Transit service on McVay Highway is hindered by poor pedestrian access, service demand primarily limited to the school season and weekdays, rider security and safety concerns for passengers accessing buses at transit stops that are poorly lit and not located at signalized street crossings, and the unfunded need to improve the congested I-5 interchange. If not addressed, these issues will worsen in the future and the transit system in this segment will not be~~,~~ positioned to handle the higher density development within and adjacent to the McVay Highway Segment planned for in the recently adopted Glenwood Refinement Plan.

2.4 Project Purpose and Need

The following Purpose and Need Statements were prepared by the Stakeholder Advisory Committee and the Governance Team. The Statement of Purpose has been reviewed by the Springfield City Council (on July 7, 2014) and the LTD Board of Directors (on July 16, 2014). The Statement of Need was approved by the Governance Team (on September 4, 2014).

2.4.1 Statement of Purpose

The purpose of the Main-McVay Transit Study project is to identify a range of transit improvements in the Main-McVay Corridor that provide improved mobility and transportation choices to residents, businesses, visitors, and commuters. The improvements will be consistent with regional plans and the community's long-term vision and goals for the area. The range of improvements will include options that result in improved regional connectivity and equitable transit access to destinations such as employment, educational institutions, shopping, appointments, and recreational opportunities for area residents.

The project improvements would strive to enhance the safety and security of the Corridor, improve the integration of walkers, cyclists, transit riders, autos, and freight along and through the Corridor, and improve connections to and from adjacent neighborhoods.

The project would support local, regional, and state plans and goals for land use and transportation; efforts in the Main-McVay Corridor aimed at encouraging economic revitalization and land use redevelopment; and, plans and programs to create Main Street and McVay Highway identities and improve aesthetics on the Corridor, making it an attractive place to live, work, and shop.

2.4.2 Statement of Need

The need for the project results from:

- High transit ridership along the Main Street corridor that results in overcrowding of bus trips during peak travel times. The #11 Thurston route which operates on Main Street has the second highest ridership in the LTD system (after EmX), with an average of more than 3,500 boardings per weekday. This is more than double any other non-EmX bus route. During the past year, seven buses were overcrowded to the point that 78 riders were left behind at stop(s);
- Pedestrian safety issues for riders walking to and from the bus stops on Main Street, including street crossings to access bus stops that are not located near a signalized or enhanced crossing. From 2009 through 2013, along Main Street between McVay Highway and 68th Street, there were a total of 29 pedestrian injuries including three (3) fatalities and six (6) severe injuries. From 1999 through 2010, there have been a total of nine (9) pedestrian fatalities during the past ten years along Main Street between 20th and 73rd Streets;
- Bicycle related safety issues along the Main Street Corridor, with 33 bicycle injuries, including one (1) fatal and one (1) severe injury reported during the 2008 through 2013 time period;
- From 2004 through 2013 there were no reported pedestrian injuries and two (2) bicycle injuries (neither was a fatal or severe injury) on the McVay Segment of the Corridor. Despite the low number of reported injuries on this Segment, as this area continues to develop there is a greater probability for pedestrian and bicycle safety issues for riders accessing transit service on McVay Highway due to high travel speeds, narrow roadways, and lack of sidewalks in many areas;
- High student use along the corridor, especially in the Thurston area, creates special safety and access issues;
- Lengthening transit travel times and deteriorating public transportation reliability in the Main Street segment due to growing traffic congestion, signal delays, and passenger boarding delays. Average run time route on the #11 Thurston has increased 3.5 percent in the last five years, with midday run time increasing by more than 10 percent during that period. In the fall of 2014, schedule time will be added to the route due to the lengthening travel time. Approximately 7.5 percent of the #11 Thurston trips on an average weekday are more than four (4) minutes late, a figure that is higher than the system average of 7.0 percent;
- Limited corridor revitalization and redevelopment resulting from aging structures and infrastructure and a poor visual environment along Main Street, South A Street, and McVay Highway;
- Historic and projected increases in traffic congestion in the Main-McVay Corridor due to increases in regional and corridor population and employment. Four (4) intersections in the corridor

(McVay/Franklin, Main/42nd, Main/Hwy 126, and Main/58th) are projected to exceed ODOT mobility standards for 2035;

- The approach to Lane Community College from Interstate 5 has a very high level of congestion in the morning periods, which creates delays for the #85 LCC/Springfield route;
- The Interstate 5 interchange at 30th Avenue is in need of improvements to address traffic and safety issues. While there is a recognized need for improvements to the interchange, funding and the schedule for the improvements are uncertain;
- For this corridor project, McVay Highway, as designed today, does not support the proposed mixed-use development goals expressed in the Glenwood Refinement Plan or the Franklin Boulevard Redevelopment Project;
- Policy direction in regional and City transportation plans that assume increased reliance on public transportation to address the community's future transportation needs;
- LTD has experienced an average annual increase in operating costs of 6.2 percent (1999-2010), combined with increasingly scarce operating resources, while trying to meet the demand for more efficient public transportation operations;
- The decision in the adopted 2035 Regional Transportation Plan (RTP) to include bus rapid transit (composed of frequent, fast transit service along major corridors and neighborhood feeder service that connects with the corridor service and with activity centers) in the fiscally constrained model as part of the regional transportation strategy.
- The decision in the adopted Springfield 2035 Transportation System Plan (STSP) to include partnering with LTD to provide frequent transit network (FTN) connections along major corridors, connecting to local neighborhood bus service and major activity centers to provide viable alternatives to vehicle trips. The STSP incorporates numerous FTN projects and 20-year priority roadway, urban standards and pedestrian / bicycle projects relevant to the Main-McVay Transit Study.
- Local and regional land use and development plans, goals, and objectives that identify the Main-McVay Corridor for residential, commercial, retail, institutional/educational, government, and industrial development to help accommodate forecasted regional population and employment growth.

2.5 Study Goals and Objectives

The following Goals and Objectives were prepared by the Stakeholder Advisory Committee and the Governance Team. These Goals and Objectives have been reviewed by the Springfield City Council (on July 7, 2014) and the LTD Board of Directors (on July 16, 2014).

Goal 1: Improve corridor transit service

Objective 1.1: Improve transit travel time

Objective 1.2: Improve transit service reliability

Objective 1.3: Provide convenient transit connections that minimize the need to transfer

Objective 1.4: Increase transit ridership and mode share along the corridor

Objective 1.5: Improve access of other modes such as walking, bicycling, and auto (park and ride) to transit

Objective 1.6: Enhance equitable transit for users without regard to race, color, religion, sex, sexual orientation, national origin, marital status, age, disability, or economic status.

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

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: Enhance the aesthetics of the corridor to improve economic activity

Objective 3.3: Coordinate transit improvements with other Main Street projects

Objective 3.4: Coordinate transit improvements with other Franklin Boulevard / McVay Highway projects

Objective 3.5: Minimize adverse impacts to existing businesses and industry

Goal 4: Enhance the safety and security of the corridor

Objective 4.1: Improve the safety of pedestrians and bicyclists accessing transit and crossing the Corridor

Objective 4.2: Enhance the security of transit users and of the corridor as a whole

Goal 5: Enhance other modes of travel

Objectives 5.1: Improve transit operations in a way that is mutually beneficial to vehicular traffic flow around transit stops and throughout the corridor

Objectives 5.2: Improve bicycle and pedestrians connections along the corridor and to and from transit stops

2.6 Evaluation Criteria

Evaluation Criteria will be used during the Tier II Screening Evaluation to determine how well each of the proposed transit solutions would meet the project's Goals and Objectives. The Evaluation Criteria will require a mix of quantitative data and qualitative assessment. The resulting data will be used to measure the effectiveness of proposed transit solutions and to assist in comparing and contrasting each of the solutions. In Table 2.6-1, 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 to measure effectiveness.

The following Evaluation Criteria were prepared by the Stakeholder Advisory Committee and the Governance Team. The Evaluation Criteria were approved by the Governance Team on September 4, 2014.

Table 2.6-1. Preliminary Draft Evaluation Criteria

Goals and Objectives	Evaluation Criteria
Goal 1: Improve corridor transit service	
Objective 1.1: Improve transit travel time	• Round trip transit pm peak travel time between select origins and destinations
Objective 1.2: Improve transit service reliability	• On-time performance (no more than 4 minutes late) of transit service
Objective 1.3: Provide convenient transit connections that minimizes the need to transfer	• Number of transfers required between heavily used origin-destination pairs
Objective 1.4: Increase transit ridership and mode share in the corridor	• Average weekday boardings on Corridor routes • Transit mode share along the corridor
Objective 1.5: Improve access of other modes such as walking, bicycling, and auto (park and ride) to transit	• Population with ½ mile of transit stop • Bicycle capacity at stops, stations, and on the bus • Number of park and ride spaces with direct transit access to major destinations • Assessment of accessibility by persons with mobility challenges
Objective 1.6: Enhance equitable transit for users without regard to race, color, religion, sex, sexual orientation, national origin, marital status, age, disability, or economic status	• Distribution of transit service and facility improvements that avoid disproportionate impacts on those populations along the Corridor.
Goal 2: Meet current and future transit demand in a cost-effective manner	
Objective 2.1: Control the increase in transit operating cost to serve the corridor	• Cost per trip • Impact on LTD operating and maintenance costs • Meet or exceed FTA's Small Starts requirements for cost-effectiveness • 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

Goals and Objectives	Evaluation Criteria
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
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	• Support for the overall BRT System Plan • Support for the Springfield Transportation System Plan (STSP) Frequent Transit Network (FTN) concept • Amount of vacant and underutilized land within ½ miles of stops/stations • Acquisitions and/or displacement of residents measured in acres of property acquired and residential unit and parking displacements • Local jobs created by project construction • Percentage of current and planned population within ½ mile of FTN stop • Percentage of current and planned employment within ½ mile of FTN stop
Objective 3.2: Enhance the aesthetics of the corridor to improve economic activity	• Potential impact to street trees, landscaping • Number of transit-related visual elements identified in adopted plans that would be implemented by transit solutions • Potential impacts to the natural environment • Opportunity for streetscape improvements, wayfinding, and design elements that reinforce the community's identity and increase awareness of economic activity areas
Objective 3.3: Coordinate transit improvements with other Main Street projects	• Capability of transit improvement to coordinate with other Main Street projects identified in adopted plans • Opportunity for streetscape improvements, wayfinding, and design elements that reinforce the community's identity and increase awareness of Main Street projects
Objective 3.4: Coordinate transit improvements with other Franklin Boulevard / McVay Highway projects	• Capability of transit improvement to coordinate with other Franklin Boulevard / McVay Highway projects identified in adopted plans • Opportunity for streetscape improvements, wayfinding, and design elements that reinforce the community's identity and increase awareness of Franklin Boulevard / McVay Highway projects
Objective 3.5: 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
Goal 4: Enhance the safety and security of the corridor	

Goals and Objectives	Evaluation Criteria
Objective 4.1: Improve the safety of pedestrians and bicyclists accessing transit and crossing Main Street	• Number and quality of designated (marked) crossings near transit stops (signalized or unsignalized) • General assessment of safety for persons with mobility challenges • General assessment of potential to reduce the number of pedestrian / vehicle collisions • General assessment of potential to reduce the number of bicycle / vehicle collisions
Objective 4.2: Enhance the security of transit users and of the corridor as a whole	• Amount of added street lighting • Amount of added lighting at / near transit stops • Extent and character of stop and station improvements
Goal 5: Enhance other modes of travel	
Objective 5.1: Improve transit operations in a way that is mutually beneficial to vehicular traffic flow around transit stops and throughout the corridor	• Impact on current and future year intersection Level of Service (LOS) • Impact on current and future year PM peak hour auto / truck travel times
Objective 5.2: Improve bicycle and pedestrians connections along the corridor and to and from transit stops	• General assessment of the interface with pedestrians and bicyclists • Length of new or improved sidewalk in stop and station areas • Length of new or improved bike lanes in stop and station areas • Number of bicycle treatments in stop and station areas

3 Study Process

This chapter provides an overview of the Main-McVay Transit Study process. Additional information about this study and related projects is available on the city of Springfield's website at http://ourmainstreetspringfield.org.

3.1 Community Conversations and Stakeholder Input

During 2012, the project team, including City, LTD, and consultant staff, worked closely with elected and appointed officials to conduct initial stakeholder and public outreach. This initial outreach included small group meetings called, "Community Conversations," general public outreach at community events such as SummerFair and National Night Out. A summary of the Community Conversations can be found on the Our Main Street website and by clicking here (PDF). This Study used input from the initial stakeholder and public outreach to develop a range of transit solutions for the Corridor.

The Stakeholders Advisory Committee (SAC) will consider technical information in advising the project team and the Governance Team. The public has been invited to attend SAC meetings and can submit written comments to the project team.

The Governance Team (GT) will consider recommendations from the SAC and project team, community input and technical information when directing the project team and advising the Springfield City Council and LTD Board. The public has been invited to attend GT meetings. Public comments can be given at Springfield City Council meetings and LTD Board meetings.

Regular electronic updates have been sent to an Interested Parties List and the project team has participated in outreach events associated with other area projects.

Comments and questions are welcome at any time during the project by submitting comments via the coordinated Main Street / McVay website or by contacting City or LTD Project Managers by phone.

3.2 Baseline Existing and Future Conditions Report

An assessment of existing conditions occurred for the various disciplines under consideration. Particularly sensitive resources in the Corridor include wetlands and water resources, archaeological resources, Section 4(f) and 6(f) resources (public parkland and wildlife refuge area), and rare plant critical habitat. For this Study, the research for the Baseline Existing and Future Conditions Report (Baseline Report) is based entirely on existing data – no data modeling or extrapolation was conducted for this Study. Background reviews included review of existing studies, plans and databases. Field surveys (windshield surveys) were conducted for sensitive resources such as wetlands and protected species. Future conditions were documented from existing plans and studies.

3.3 Mode Options

In May and June 2014, the SAC and GT considered a recommendation from the project team regarding which transit modes to evaluate in the Study. Studies conducted in the 1990s concluded that BRT was a

more cost effective high capacity transit mode than urban rail modes for the Eugene-Springfield metro area. In 2008, LTD conducted a comparative analysis of BRT and urban rail and found that the LTD EmX Green Line compares favorably with both streetcar and light rail systems. This 2008 analysis confirmed that the conclusions of the studies from the 1990s were still valid. LTD EmX has a lower cost per boarding than the streetcar or light rail system examples. The EmX also is rated in the middle in terms of boardings per route mile, even though light rail systems generally have higher capacities.

Based on the findings of previous mode studies, the project team concluded that BRT continues to be a more cost effective high capacity transit mode choice for the Eugene-Springfield metro area and recommended eliminating the following non-bus modes from further consideration in the Main-McVay Transit Study:

- Grade Separated Transit
- Light Rail
- Monorail
- Streetcar
- Trolley Bus

The project team recommended advancing the following bus modes for further evaluation in the Main McVay Transit Study:

- Fixed Route Bus
- Enhanced Bus
- Bus Rapid Transit (BRT)

The SAC and the GT concurred with the project team recommendations. The conceptual transit solutions considered in the Main-McVay Transit Study will be bus modes .

Mode Options

Mode is a particular form or method of travel distinguished by vehicle type, operating characteristics and right-of-way separation from other traffic. Examples of "mode technology" include bus, rapid bus, and rail. Examples of "operating characteristics" included local vs express, stations vs no-stop, and integrated feeders vs transfers. Examples of "degree of right-of-way separation" include mixed traffic and exclusive right-of-way.

Alignment Options

Alignment is the street or corridor in which the transit project would be located. Alignment elements include horizontal (e.g., streets, medians, rights-of-way), vertical (e.g., elevated, at-grade, subway), station locations, and length.

3.4 Conceptual Transit Solutions Development

The findings of the Baseline Report were used by the project team, the SAC and the GT to develop conceptual transit solutions during a two-day workshop. After the workshops, the design team refined the transit improvement concepts. These refined concepts were reviewed and modified by the SAC (on August 26, 2014) and by the GT (on September 4, 2014).

3.5 Screening and Evaluation of Transit Solutions

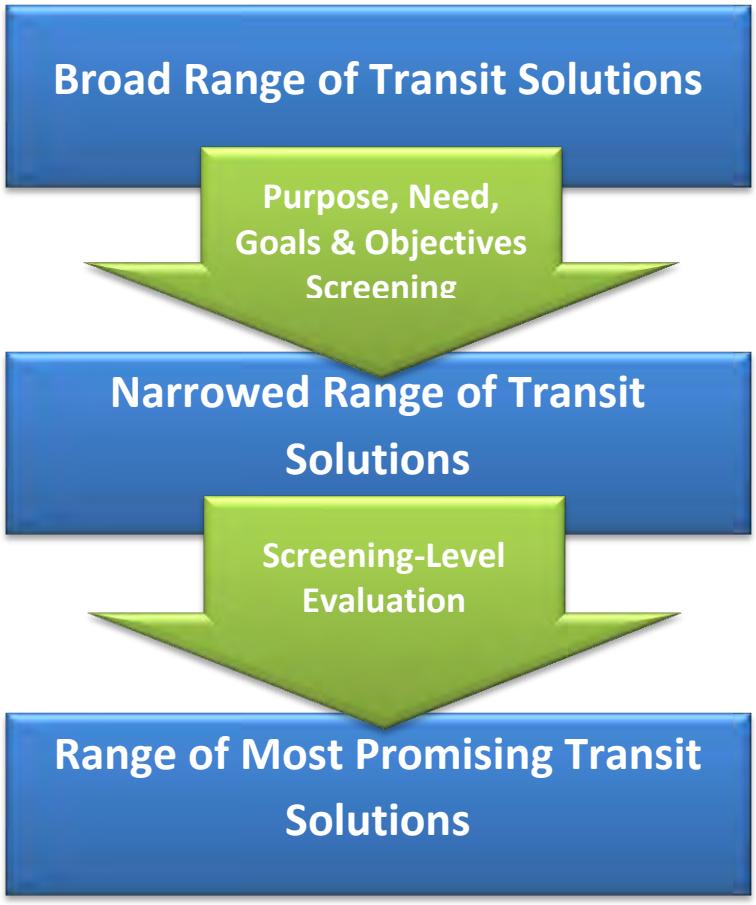
The purpose of the screening and evaluation effort is to determine which transit solutions are most appropriate for the Corridor and hold the most promise in solving the identified problems. Transit solutions which hold the most promise by meeting the study's Purpose, Need, Goals, and Objectives would be carried forward to future phases of the project for further consideration.

A two-step process will be used to narrow the broader range of transit solutions to a smaller range of options for further study. The screening process evaluates each transit solution in terms of its potential adverse or beneficial effect to the project area environment. This includes consideration of issues including land use, transportation, economic development, compliance with plans and regulations, and effects to the built environment, parks, and cultural and natural resources, among others.

The screening steps to be used in this Study are described below.

3.5.1 Purpose and Need Screening

The first level of screening gauges whether or not a transit solution addresses the Study's Purpose, Need, Goals and Objectives (PNGO) (described in Section 2.4). The broad range of transit solutions developed by the SAC and approved by the GT (described in Chapter 4 of this report) has been screened by the project team to determine which transit solutions have the potential to address the Study's PNGO. The findings of this Tier I screening is described in Chapter 5 of this report.



Transit solutions which have the potential to address the Study's PNGO have been recommended for advancement to the next level of evaluation (the criteria evaluation) while solutions that are not consistent with the PNGO have been recommended for elimination from further consideration. The findings and recommendations from this Screening will be considered by the SAC and the GT in determining the narrowed range of transit solutions. The narrowed range of transit solutions approved by the GT will be advanced to the next level of evaluation.

3.5.2 Screening-Level Evaluation

In the screening-level evaluation, the Evaluation Criteria will be used to determine how well each of the proposed transit solutions would meet the Study's Goals and Objectives. The Evaluation Criteria are described in Section 2.6 and the Goals and Objectives are described in Section 2.5. Each of the transit solutions will be scored based on the Evaluation Criteria – the higher the point total the better the

transit option is in meeting the Study's Goals and Objectives. The resulting data and scoring will be used to assist in comparing and contrasting the transit solutions options.

There is no proposed weighting of the criteria. It is understood and expected that those evaluating the transit solutions will provide their own perspective on the importance of individual criteria in forming their opinions of the relative merits of the transit solutions.

The findings and recommendations from the Screening-Level Evaluation will be considered by the SAC and the GT in determining the range of most promising transit solutions, which are those solutions that have the greatest probability of addressing the identified Corridor transportation problems.

3.5.3 Range of Most Promising Transit Solutions

If LTD and the city of Springfield make a determination to advance into a project phase, the range of most promising transit solutions would be advanced to that next phase.

4 Proposed Transit Solutions

This chapter summarizes the broad range of transit solutions proposed for the Main-McVay Corridor Study. The preliminary range of transit solutions was developed by the SAC in a workshop held on July 29, 2014. This broad range of transit solutions was reviewed and modified by both the SAC and the GT and the final broad range of transit solutions advanced into this Tier I Screening were approved by the GT (on September 4, 2014).

4.1 Introduction

On July 29, 2014, the GT and the SAC met to initiate the process of developing a range of possible transit solutions for the Main-McVay Corridor. The SAC's participation included active involvement in generating ideas for routing, station locations, and route termini. The SAC's suggestions, ideas, and identified issues and constraints that emerged from that meeting were translated into drawings of possible transit solutions, which were summarized in a Range of Possible Solutions report. The SAC met on August 26, 2014 to review the report. They agreed on some changes and recommended to the GT a modified Range of Possible Solutions. On September 4, 2014, the GT met to review the report and the SAC's recommended Range of Possible Transit Solutions. Based on concerns about the extent of potential impacts to businesses, the GT eliminated one of the proposed transit solutions and advanced the remaining solutions into this Tier I Screening.

The possible solution eliminated by the GT was a routing option to use Main Street for two-way BRT service in the downtown Springfield area. That option would have resulted in a contraflow lane on Main Street for eastbound BRT travel, which would have required either the elimination of one of the two travel lanes or the removal of on-street parking, both of which were seen as having too great of an impact on traffic and/or downtown businesses and, thus, not reasonable solutions.

Please note that this current step of the process does not involve evaluating the merits of the possible solutions or their applicability to the Corridor; that evaluation will occur in the next step of the project as part of the Tier II Screening-Level Evaluation.

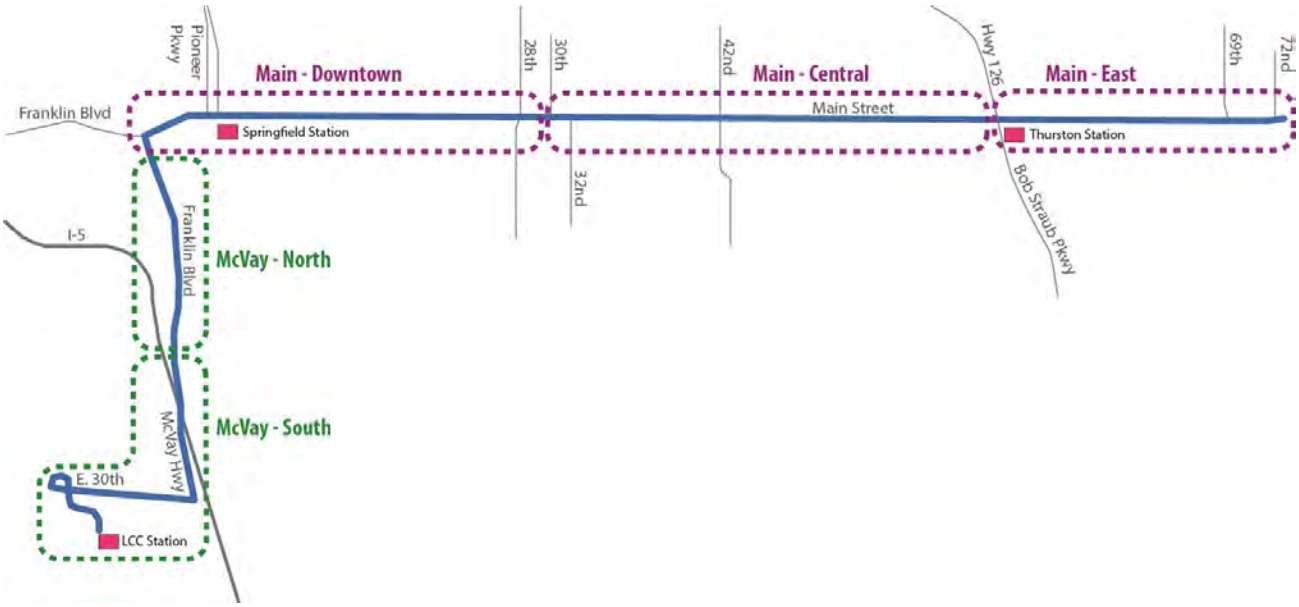
The Range of Possible Solutions is described by mode (Existing Service, Enhanced Bus, and BRT) and in terms of the five main factors that define each option:

- Service Options
- Lane Configurations
- Routing (alignment)
- Termini
- Station Locations

4.2 Workshop Drawings

To facilitate the process of articulating the SAC's ideas into workshop drawings, the Corridor was broken into the Main Street and McVay Highway Segments, and each of those Segments was broken into sub-segments as shown in Figure 4.2-1. The drawings for each segment show the alignment and general station locations for Enhanced Bus and BRT modes. These drawings are included in Attachment A to the Memorandum to the Governance Team (September 4, 2014).

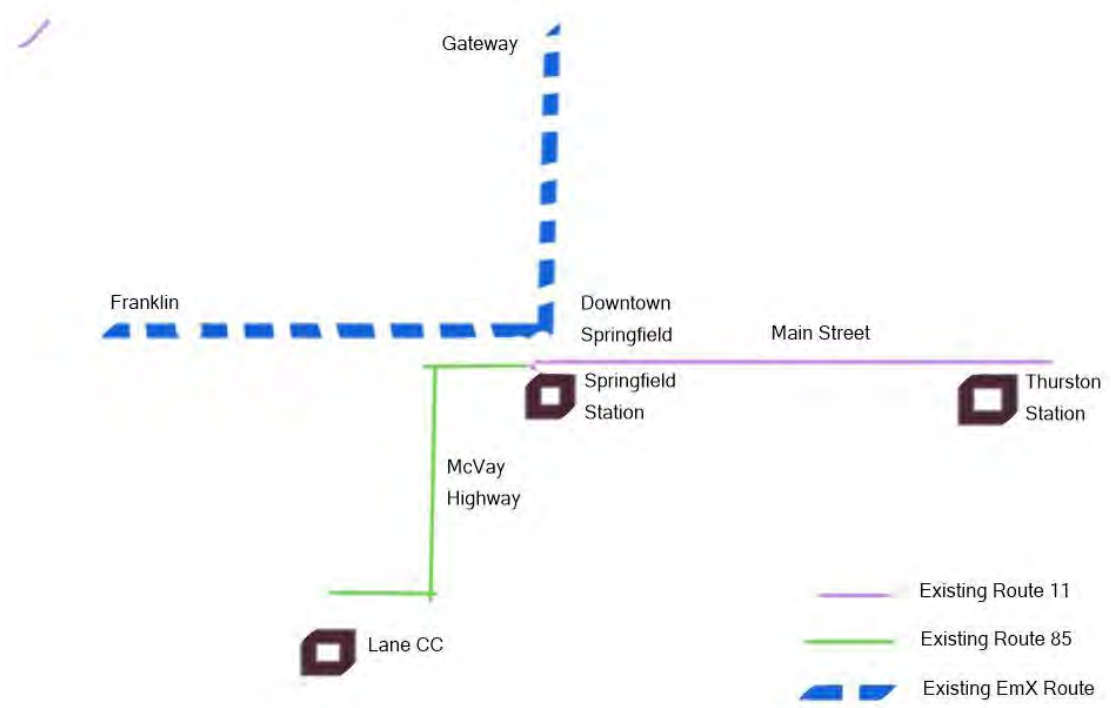
Figure 4.2-1: Corridor Segments and Sub-Segments Used for BRT Option Descriptions



4.2.1 Existing Service (No Change Option)

The option to continue existing bus service (shown in Figure 4.2-2 below), also called the No-Change Option, will be carried forward through this study and any possible subsequent studies. Under this option, there is no change to existing service connections, lane configurations, routing, termini, or station locations. Future bus service changes would be consistent with the service and operational adjustments typically made by LTD to maintain service quality.

Figure 4.2-2: Existing Bus Service on the Main-McVay Corridor



4.2.2 Enhanced Bus

Enhanced Bus options typically include transit signal priority (TSP), improved stations, and improved operations, and can include improvements to the frequency of service on the Corridor. The service options for Enhanced Bus described below are not mutually exclusive. These can be applied in various combinations. For example, it is possible to implement a Freeway Express route (Option 4) in combination with enhanced bus service on Main and/or McVay Highway Segments.

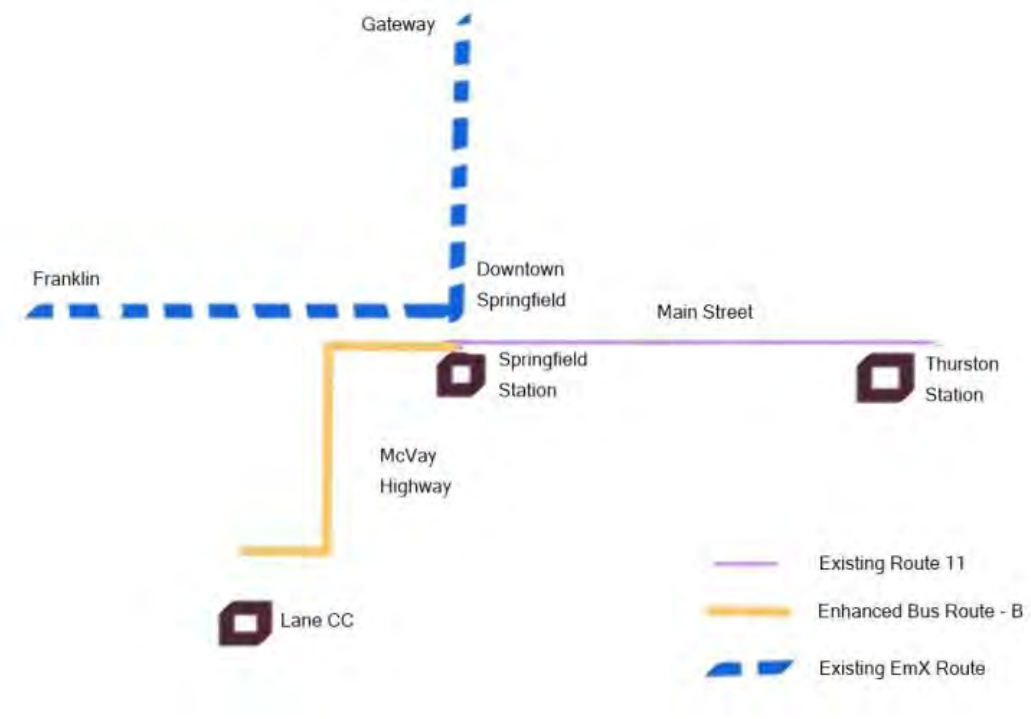
4.2.2.1 Service Options

1. Main Street Enhanced Bus: Replace #11 Thurston with Enhanced Bus Route; #85 LCC/Springfield and other routes would be unchanged (Figure 4.2-3).

Figure 4.2-3: Enhanced Bus Option 1

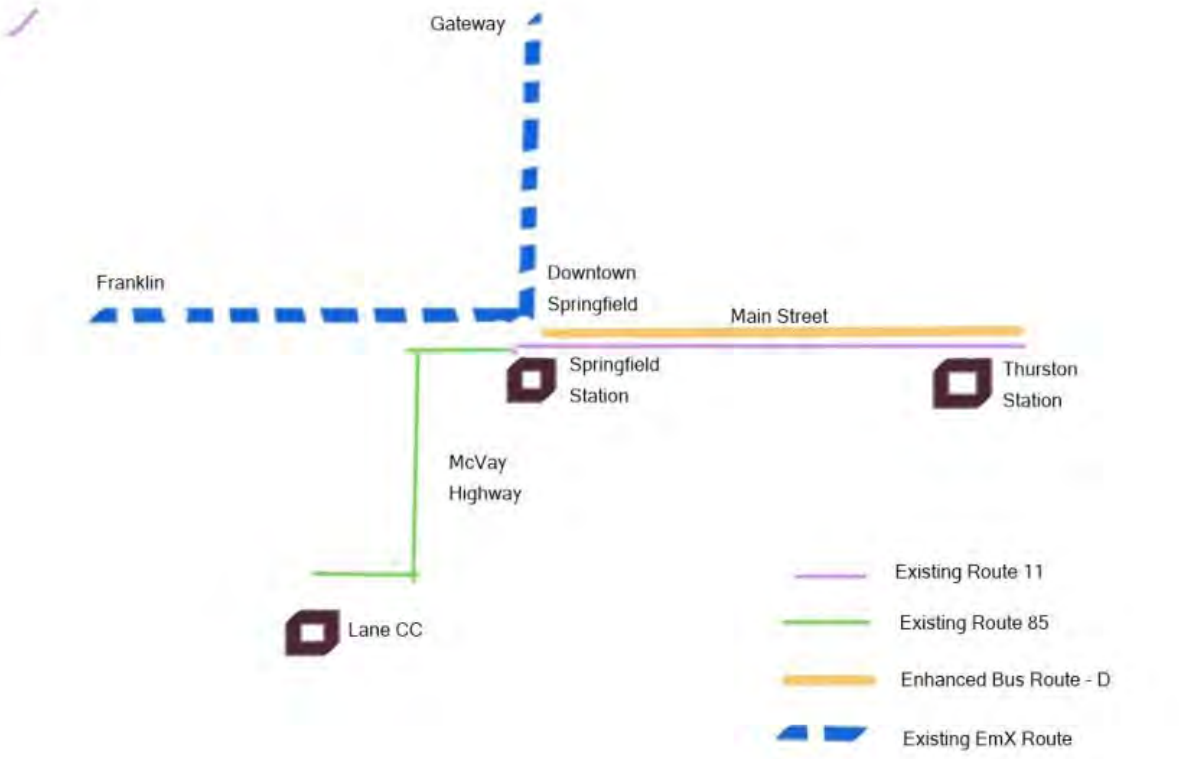
2. McVay Highway Enhanced Bus: Replace #85 LCC/Springfield with Enhanced Bus Route; #11 Thurston and other routes would be unchanged (Figure 4.2-4).

Figure 4.2-4: Enhanced Bus Option 2



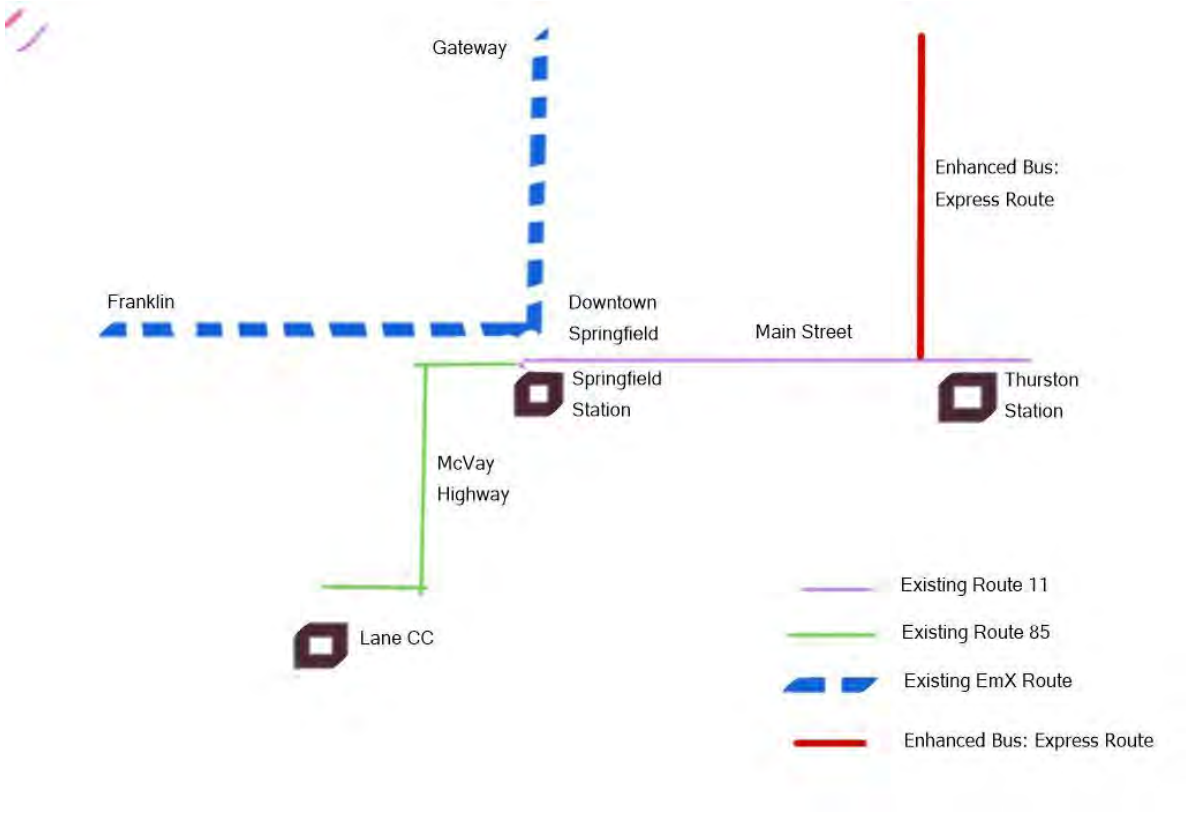
3. Main Street Express: Add express service along the Main Street segment to supplement the #11 Thurston route (Figure 4.2-5). Frequency on the #11 may be reduced somewhat since the express route would assume some of its ridership load. Service on the #85 LCC/Springfield and other routes would be unchanged.

Figure 4.2-5: Enhanced Bus Option 3



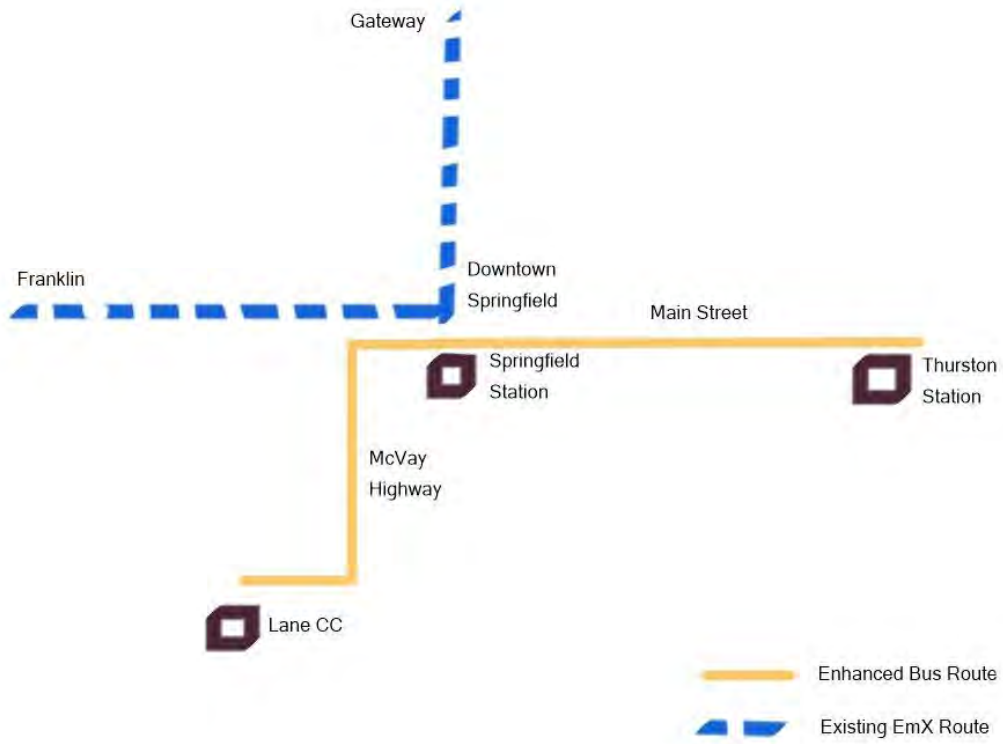
4. Freeway Express: Add an express route from the Thurston Station that uses Highway 126 for direct service to Eugene (Figure 4.2-6). Service on the #11 Thurston, #85 LCC/Springfield and other routes would be unchanged.

Figure 4.2-6: Enhanced Bus Option 4



5. Main-McVay Enhanced Bus: Replace the #11 Thurston and the #85 LCC/Springfield with Enhanced Bus service, providing continuous (no transfer) service from east Springfield to Lane Community College via the Main Street and McVay Highway Segments (Figure 4.2-7).

Figure 4.2-7: Enhanced Bus Option 5



4.2.2.2 Lane Configurations

Enhanced bus service is in mixed traffic, though queue-jump lanes may be used at congested intersections. Possible locations for queue-jump lanes are at McVay Highway/Franklin, Main/42nd Street, and Main/Highway 126

4.2.2.3 Routing/Termini/Station Options

Table 4.2-1 summarizes routing (alignment), termini, and station locations for each of the Enhanced Bus options.

Table 4.2-1: Enhanced Bus Options: Routing / Termini / Stations

Option	Description	Routing	Route Termini	General Station Locations
1. Main Street Enhanced Bus	This option would replace the existing #11 Thurston route with an Enhanced Bus route, using the same alignment and stops.	Existing #11 routing	Springfield Station – 69th & Main (option to extend east of 69th)	Existing Bus Stops
2. McVay Highway Enhanced Bus	This option would replace the existing #85 LCC / Springfield route with an Enhanced Bus route, using the same alignment and stops.	Existing #85 routing	Springfield Station – LCC	Existing Bus Stops
3. Main Street Express	This option would add an express bus on the Main Street segment to operate in combination with continued service on the #11 Thurston route. The express bus would service limited stops, while the #11 Thurston would continue to serve all bus stops along the Corridor.	Main Street; Couplet in downtown Springfield	Springfield Station – Thurston Station	Springfield Station 10th Street 14th Street 21st Street 30th Street 42nd Street 48th Street Thurston Station
				Option for fewer stops
4. Freeway Express	This option involves an express bus using Highway 126 to connect the Thurston Station with downtown Eugene and the University of Oregon. Service on the #11 Thurston would remain as currently provided.	Highway 126	Eugene (downtown and University) – Thurston Station	Thurston Station Downtown Eugene / University

4.2.3 BRT

There are several BRT options within the corridor. These cover a wide range of service options, lane configurations, and routing, termini, and station options.

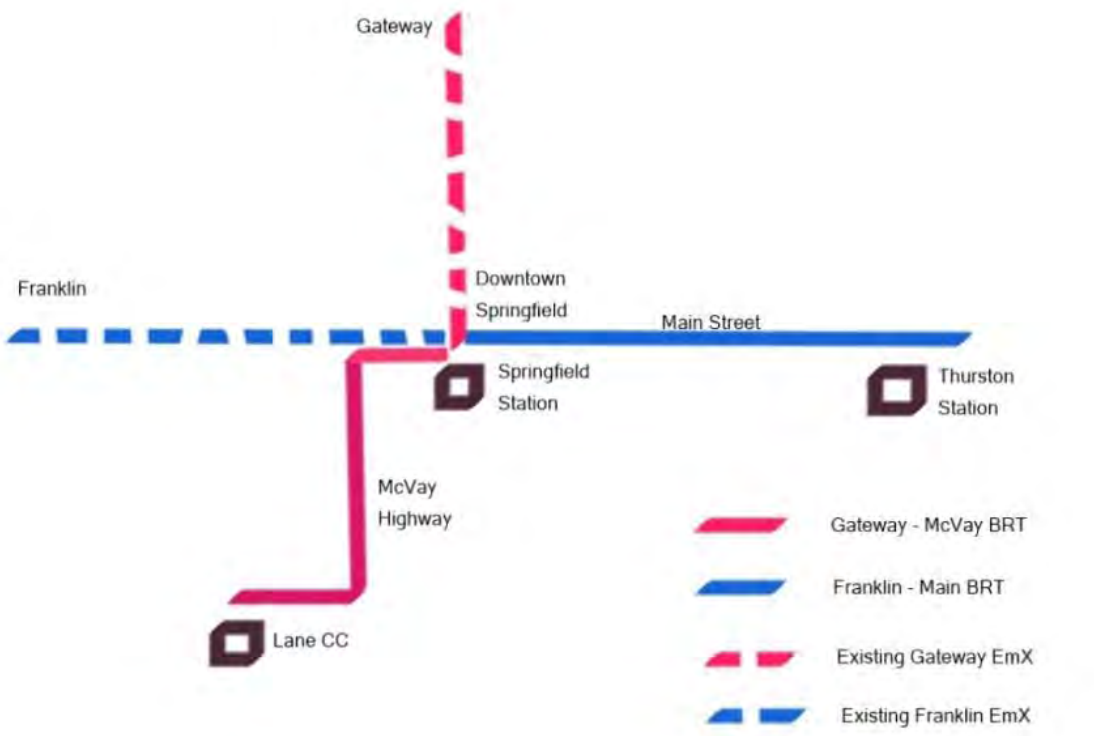
4.2.3.1 Service Options

1. Main-McVay BRT. This option would create an L-shaped EmX line service the Main-McVay corridor, which would link with the existing L-shaped EmX service at Springfield Station Figure 4.2-8).

Figure 4.2-8: BRT Option 1

2. Franklin-Main and Gateway-McVay BRT Lines. This option extends the existing Franklin EmX east on Main Street, and extends the existing Gateway EmX south on McVay Highway to LCC (Figure 4.2-9).

Figure 4.2-9: BRT Option 2

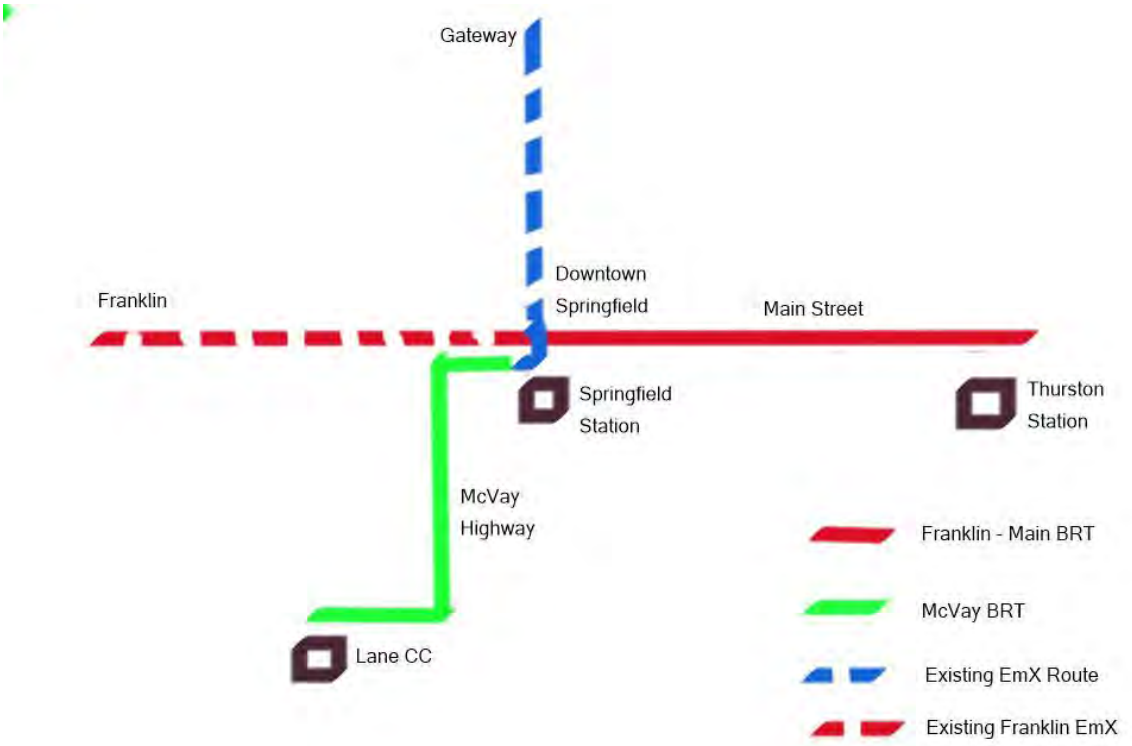


3. Main Street BRT; McVay Highway BRT. This option would add separate EmX lines on the Main Street and McVay Highway segments (Figure 4.2-10). They would connect with each other and the existing EmX service at the Springfield Station.

Figure 4.2-10: BRT Option 3

4. Franklin-Main BRT; Gateway BRT; McVay Highway BRT. This option extends the existing Franklin EmX east on Main Street and creates a McVay Highway EmX line (Figure 4.2-11). The existing EmX service on the Gateway segment would be severed from the Franklin EmX and operate independently with a terminus at the Springfield Station.

Figure 4.2-11: BRT Option 4



4.2.3.2 Lane Configurations

There are many lane configuration options for EmX, ranging from exclusive transit lanes to semi-exclusive transit lanes to mixed traffic. A detailed analysis of the most appropriate lane configuration for a particular street section is beyond the scope of this study. Instead, the study will evaluate three basic BRT lane approaches, described as follows:

- High-Level BRT: Under this approach, a large majority of the corridor is in exclusive or semi-exclusive transit lanes, with exceptions made for significant pinch points that would have high cost or impact.
- Moderate-Level BRT: This option would provide for exclusive or semi-exclusive transit lanes in many locations to address current or projected traffic congestion and as well as locations that have available right-of-way or where right-of-way expansion would have less impact. Sections that would result in significant impacts to businesses or residents would be avoided, unless required to address a key transit delay.
- Low-Level BRT: This option would only apply exclusive or semi-exclusive transit lanes in areas where there is severe traffic congestion or where there are opportunities for transit lanes with minimal impact to the adjacent businesses or residents. A majority of the BRT line would operate in mixed traffic.

4.2.3.3 Routing/Termini/Station Options

Table 4.2-2 summarizes routing (alignment), termini, and station locations for each of the BRT options. General station locations are being coordinated with the Main Street Visioning Project, including with identified Activity Node areas.

Table 4.2-2: BRT Options: Routing/Termini/Stations

Segment	Sub-Segment	Routing	Route Termini	General Station Locations	Notes
Main Street	East (East of Bob Straub Pkwy)	Main St	Thurston Station	Thurston Station	Possible increase in local connector service east of Thurston Station
		Main St to 58th	Thurston High School	Thurston Station Thurston High School	Layover location to be determined
		Main St to 58th to Thurston to 69th	Main St & 69th	Thurston Station Thurston High School Thurston / 58th Thurston / 63rd Thurston / 68th Thurston / 69th 69th / Main St	Layover location to be determined
		Main St	Main St & 72nd	Thurston Station 58th 61st 66th 69th 72nd	Layover location to be determined
	Central (30th – Bob Straub Pkwy)	Main St	NA	30th 35th 39th 42nd 44th 48th 50th 53rd	
	Downtown (McVay Hwy – 30th)	South A / Main Couplet	NA	Springfield Station 10th 14th 21st	
		South A (both directions) (contraflow lane)	NA	Springfield Station 10th 14th 21st	Requires contraflow lane on South A Street
		Main St (both directions)	NA	Springfield Station 10th 14th 21st	Requires contraflow lane on Main Street
		Couplet East of 10th, South A West of 10th	NA	Springfield Station 10th 14th 21st	Requires contraflow lane on South A Street west of 10th Street
McVay Highway	North (Franklin to UGB)	McVay Highway	NA	Franklin (roundabout) 19th Nugget South Glenwood	Station locations consistent with Glenwood Refinement Plan
	South (UGB to LCC)	McVay Hwy (West side of I-5)	LCC	Bloomberg Eldon Schafer LCC	
		Old Franklin (East side of I-5)	LCC	Seavey Loop Area Eldon Schafer LCC	
		Haul Road (East side of I-5)	LCC	Seavey Loop Area Eldon Schafer LCC	

Note: Layover locations are needed at the ends of routes to allow for the bus to adjust to the scheduled departure time and to provide for operator breaks.

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5 Tier I Screening Evaluation

This chapter summarizes the findings of the screening which gauges whether or not the proposed transit solutions address the Study's Purpose, Need, Goals and Objectives.

5.1 Introduction

The first level of screening gauges whether a transit solution addresses the Study's Purpose, Need, Goals and Objectives (described in Section 2.4). After the broad range of transit solutions was developed, the project team screened the transit solutions to determine which options had the potential to address the Study's PNGO. Transit solutions which have the potential to address the PNGO have been recommended for advancement to the next level of evaluation (the criteria evaluation) while options that are not consistent with the PNGO have been recommended for elimination from further consideration. The findings and recommendations from the Tier I Screening will be considered by the SAC and the GT in determining the narrowed range of transit solutions. This narrowed range of options will be advanced to the next level of evaluation.

It should be noted that the process originally assumed that the first screening step would be based solely on the Study's Purpose and Need Statement. After an initial review by the project team, screening of the proposed range of transit solutions based solely on the Purpose and Need Statement, which is fairly general, would allow virtually all of the options to pass through to the second screening step and, thus, would serve little purpose. As a result, the project team modified the initial screening to include the Study's Goals and Objectives allowing for greater scrutiny of the options and elimination of options that do not match well with the Study's goals.

5.2 Screening and Rating Options

5.2.1 Purpose and Need Screening

All of the options in the Range of Transit Solutions were able to address the Study's Purpose and Need Statement, therefore, the entire Range of Transit Solutions were screened against the Study's five (5) Goals and associated Objectives.

5.2.2 Goals and Objectives Screening

For each option, the project team scored how well the option would address the Study's PNGO on a scale of "Good" meaning that the option best addressed the Goals and Objectives, "Moderate" meaning that the option moderately addressed the Goals and Objectives, and "Poor" meaning that the option poorly addressed the Goals and Objectives. For some Objectives, there is not enough information to know whether or not the transit option would address the PNGO or, in some cases, the options do not affect a particular objective. For example, how BRT service is connected (service options) does impact

corridor aesthetics or business impacts. In these cases, the cell in the scoring matrix is left blank. In this Tier I Screening, it was not possible to screen any of the elements against Goal 4 (Enhance the safety and security of the corridor) or Goal 5 (Enhance other modes of travel).

In each of the findings tables, the scoring indicates how well the option addressed the Goals and Objectives:

Good =  Moderate =  Poor =  Unknown or Not Impacted = Blank

This PNGO screening evaluation resulted in findings for the following:

Table 5.2-1. Range of Transit Solutions and Options Screened in Tier I

Range of Transit Solutions	Options
Enhanced Bus Options	• Main Street • McVay Highway • Main Street Express • Freeway Express • Main-McVay
BRT Service Options	• Franklin-Gateway; Main-McVay • Franklin-Main; Gateway-McVay • Franklin-Gateway; Main; McVay • Franklin-Main; Gateway; McVay
BRT Lane Configurations	• High Exclusivity • Moderate Exclusivity • Low Exclusivity
BRT Routing Main Street East Routing Options and Eastern Terminus	• Thurston Station (with connector service) • Thurston High School (with connector service) • Thurston Road to 69th • Main to 72nd
BRT Main Street Downtown Routing Options	• Main Street / South A Couplet • South A Street (eastbound and westbound) • South A Street to 10th or 14th; Couplet east of 10th or 14th
BRT Routing McVay South	• McVay Highway (west side of I-5) • Old Franklin (east side of I-5) • Haul Road (east side of I-5)
BRT Station Spacing	• Stations spaced less than 1/3 mile apart • Stations spaced approx. 1/3 mile apart • Stations spaced more than 1/3 mile apart

5.3 Enhanced Bus Options

Five (5) Enhanced Bus Options were screened against the Goals and Objectives. Most of the Enhanced Bus options addressed the Objectives at a "Good" or "Moderate" level (Table 5.3-1).

Table 5.3-1. Screening Summary Enhanced Bus Options

		Options				
Goals	**Objectives**	**1. Main Street**	**2. McVay Highway**	**3. Main Street Express**	**4. Freeway Express**	**5. Main-McVay**
Goal 1: Improve corridor transit service	1.1: Travel time	🟢	🟢	🟢	🟢	🟢
	1.2: Reliability	🟢	🟡	🟢	🟡	🟢
	1.3: Transfers	🟡	🟡	🟡	🟡	🟢
	1.4: Ridership	🟢	🟡	🟢	🟡	🟢
	1.5: Access					
	1.6: Equity					
Goal 2: Meet current and future transit demand in a cost-effective manner	2.1: Operating cost	🟢	🟢	🟡	🔴	🔴
	2.2: Capacity	🟡	🟡	🟢	🟢	🟡
	2.3 Return on Investment					
	2.4: Environmental Impacts					
Goal 3: Support economic development, revitalization and land use redevelopment opportunities for the corridor	3.1: Support plans	🟢	🟢	🟢	🟡	🟢
	3.2: Aesthetics					
	3.3: Main Street projects	🟡	🟡	🟢	🟡	🟡
	3.4: Franklin improvements		🟡			🟡
	3.5: Business impacts					
Goal 4: Enhance the safety and security of the corridor	4.1: Ped and bike safety					
	4.2: Transit user safety					
Goal 5: Enhance other modes of travel	5.1: Traffic impacts					
	5.2: Bike and ped connections					
PNGO Screening Recommendation (Retain or Eliminate)		**Retain**	**Retain**	**Retain**	**Eliminate**	**Eliminate**

Good = 🟢 Moderate = 🟡 Poor = 🔴 Unknown or Not Impacted = Blank

Project Team Recommendations

Eliminate Option 4 because it only serves a very small portion of the Corridor, does not meet the goal of cost-effectively meeting current demand in the Corridor, and would not address several other Corridor objectives. This option, which has virtually no capital cost, can be considered by LTD as a potential service improvement as part of the Annual Route Review.

Eliminate Option 5 because the connection of the two corridors and matching their service levels would require a large increase in operating cost on the McVay Segment, which does not meet the goal of cost-effectively meeting current demand. The option of maintaining the existing service frequency on each of the two segments would result in less than half of the trips on the Main Street Segment continuing to the McVay Segment, which results in an inconsistent connection for riders and essentially negates the benefits of connecting (interlining) the two segments.

5.4 BRT Service Options

Four (4) BRT options were screened against the Goals and Objectives. Most of the BRT options addressed the Objectives at a "Good" or "Moderate" level (Table 5.4-1).

Table 5.4-1. Screening Summary BRT Service Options

		Options			
Goals	**Objectives**	**1. Franklin-Gateway; Main-McVay**	**2. Franklin-Main; Gateway-McVay**	**3. Franklin-Gateway; Main; McVay**	**4. Franklin-Main; Gateway; McVay**
Goal 1: Improve corridor transit service	1.1: Travel time	🟢	🟢	🟢	🟢
	1.2: Reliability	🟢	🟢	🟢	🟢
	1.3: Transfers	🟡	🟢	🔴	🟢
	1.4: Ridership	🟡	🟢	🟡	🟢
	1.5: Access				
	1.6: Equity				
Goal 2: Meet current and future transit demand in a cost-effective manner	2.1: Operating cost	🔴	🟡	🟡	🟢
	2.2: Capacity	🟢	🟢	🟢	🟢
	2.3 Return on Investment	🟡	🟢	🟡	🟢

Goals	Objectives	Options			
		1. Franklin-Gateway; Main-McVay	2. Franklin-Main; Gateway-McVay	3. Franklin-Gateway; Main; McVay	4. Franklin-Main; Gateway; McVay
	2.4: Environmental Impacts				
Goal 3: Support economic development, revitalization and land use redevelopment opportunities for the corridor	3.1: Support plans				
	3.2: Aesthetics				
	3.3: Main Street projects				
	3.4: Franklin improvements				
	3.5: Business impacts				
Goal 4: Enhance the safety and security of the corridor	4.1: Ped and bike safety				
	4.2: Transit user safety				
Goal 5: Enhance other modes of travel	5.1: Traffic impacts				
	5.2: Bike and ped connections				
PNGO Screening Recommendation (Retain or Eliminate)		**Eliminate**	**Retain**	**Eliminate**	**Retain**

Good =  Moderate =  Poor =  Unknown or Not Impacted = Blank

Project Team Recommendations

Retain Options 2 and 4 because they best meet the Goals and Objectives. The other two options do not provide for the east-west EmX connection that is consistent with the BRT system plan. In addition, the Franklin-Main connection results in the greatest reduction in transfers and the two segments have similar operational and service frequency requirements. Connecting segments that have matching service demand results in the most efficient provision of service.

Option 1 would require a significant increase in operating costs in the McVay Highway Segment to match the service frequency of the Main Street Segment. This would significantly increase LTD operating costs. The option of maintaining the existing service frequency on each of the two segments would result in an inconsistent connection and essentially negate the benefits of connecting (interlining) the two segments. In addition, this option is not consistent with the BRT Service Plan which includes an east/west (Franklin/Main) connection.

Option 3 requires that a greater number of riders transfer than the other options. In addition, Option 3 is not consistent with the BRT Service Plan which includes the east/west (Franklin/Main) connection as well as a north south (Gateway/McVay). This option does not provide either of those two connections.

5.5 BRT Lane Configurations

The three (3) lane configuration options were screened against the Goals and Objectives. All of the lane configuration options addressed the Objectives at a "Good" or "Moderate" level (Table 5.5-1).

Table 5.5-1. Screening Summary BRT Lane Configurations

		Options		
Goals	**Objectives**	**1. High Exclusivity**	**2. Moderate Exclusivity**	**3. Low Exclusivity**
Goal 1: Improve corridor transit service	1.1: Travel time	🟢	🟢	🟡
	1.2: Reliability	🟢	🟡	🟡
	1.3: Transfers			
	1.4: Ridership	🟢	🟢	🟡
	1.5: Access			
	1.6: Equity			
Goal 2: Meet current and future transit demand in a cost-effective manner	2.1: Operating cost	🟢	🟡	🟡
	2.2: Capacity	🟢	🟢	🟡
	2.3 Return on Investment	🟡	🟢	🟢
	2.4: Environmental Impacts			
Goal 3: Support economic development, revitalization and land use redevelopment opportunities for the corridor	3.1: Support plans			
	3.2: Aesthetics			
	3.3: Main Street projects			
	3.4: Franklin improvements			
	3.5: Business impacts	🟡	🟢	🟢
Goal 4: Enhance the safety and security of the corridor	4.1: Ped and bike safety			
	4.2: Transit user safety			
Goal 5: Enhance other modes of travel	5.1: Traffic impacts			
	5.2: Bike and ped connections			
PNGO Screening Recommendation (Retain or Eliminate)		**Retain**	**Retain**	**Retain**

Good = 🟢 Moderate = 🟡 Poor = 🔴 Unknown or Not Impacted = Blank

Project Team Recommendations

Retain all three lane configuration options at this time. The more detailed concept designs and the screening based on the evaluation criteria will provide the specificity needed to assess the options in a more thorough manner. Key evaluation criteria that will assist in evaluating lane configuration options are transit travel time, service reliability, return on investment, and business impacts.

5.6 BRT Routing Main Street East Routing Options and Eastern Terminus

Four (4) BRT Main Street East Routing options and eastern Terminus options were screened against the Goals and Objectives. Many of the BRT options addressed the Objectives at a "Good" or "Moderate" level and a several options had scores of "Poor" (Table 5.6-1).

Table 5.6-1. Screening Summary BRT Routing Main – East End

		Options			
Goals	**Objectives**	**1. Thurston Station (with connector service)**	**2. Thurston High School (with connector service)**	**3. Thurston Road to 69th**	**4. Main to 72nd**
Goal 1: Improve corridor transit service	1.1: Travel time	🟢	🟢	🟡	🟡
	1.2: Reliability	🟢	🟢	🟡	🟡
	1.3: Transfers	🔴	🟡	🟢	🟢
	1.4: Ridership	🟢	🟢	🟡	🟡
	1.5: Access	🟢	🟢	🟡	🟡
	1.6: Equity				
Goal 2: Meet current and future transit demand in a cost-effective manner	2.1: Operating cost	🟢	🟡	🔴	🔴
	2.2: Capacity	🟢	🟢	🟡	🟡
	2.3 Return on Investment	🟢	🟡	🔴	🔴
	2.4: Environmental Impacts				
Goal 3: Support economic development, revitalization and land use redevelopment opportunities for the corridor	3.1: Support plans	🟢	🟢	🟡	🟡
	3.2: Aesthetics				
	3.3: Main Street projects				
	3.4: Franklin improvements				
	3.5: Business impacts				
Goal 4: Enhance the safety and security of the corridor	4.1: Ped and bike safety				
	4.2: Transit user safety				
Goal 5: Enhance other modes of travel	5.1: Traffic impacts				
	5.2: Bike and ped connections				
PNGO Screening Recommendation (Retain or Eliminate)		**Retain**	**Retain**	**Eliminate**	**Eliminate**

Good = 🟢 Moderate = 🟡 Poor = 🔴 Unknown or Not Impacted = Blank

Project Team Recommendations

It is recommended that Options 1 and 2 be carried forward to the next screening phase. These Options, which terminate at the Thurston Station or Thurston High School, result in lower operating cost and best return on investment because they avoid the need to extend high-frequency BRT service and BRT capital improvements east of 58th Street. In addition, those two options would include neighborhood connector service that can be tailored to best meet the needs of the east Springfield area in terms of routing, access, service frequency, and bus size. A neighborhood bus connecting with the BRT service at Thurston Station can be designed to have multiple routes that serve various neighborhoods, including the area south of Main Street. A hybrid of Options 1 and 2 which extends the BRT service to Thurston High School only during high student rider demand times can also be considered.

5.7 BRT Main Street Downtown Routing Options

At this stage of the Study, there is not enough data and information detail to screen the three (3) BRT Main Street Downtown Routing options against the Goals and Objectives. The three options are:

- South A Street/Main Street couplet (bus travels with existing traffic flow)
- Two-Way on South A Street (westbound BRT travel would be contraflow to existing traffic flow)
- Two-Way of South A Street routing west of 10th or 14th Street, and South A Street/Main Street couplet east of 19th or 14th (westbound bus would be contraflow west of 10th or 14th Street)

It should be noted that an option to use Main Street for two-way BRT service was considered but eliminated prior to this screening step. That option would have resulted in a contraflow lane on Main Street for eastbound BRT travel, which would have required either the elimination of one of the two travel lanes or the removal of on-street parking, both of which were seen as having too great of an impact on traffic and/or downtown businesses and, thus, not reasonable solutions.

The three remaining options will be evaluated as part of the next screening step against the evaluation criteria. Key evaluation criteria to be used to assess these options will be transit travel time, population and employment within a quarter mile of stops, traffic impacts, and business impacts.

5.8 BRT Routing McVay South

Three (3) McVay Highway South Routing options were screened against the Study's Goals and Objectives. Two of the options scored at the "Good" and "Moderate" levels while one option had several "Poor" scores (Table 5.7-1).

Table 5.7-1. Screening Summary BRT McVay South Routing Options

Goals	Objectives	Options		
		1. McVay Highway (west side of I-5)	2. Old Franklin (east side of I-5)	3. Haul Road (east side of I-5)
Goal 1: Improve corridor transit service	1.1: Travel time	🟡	🟢	🟢
	1.2: Reliability	🟡	🟢	🟢
	1.3: Transfers			
	1.4: Ridership	🟢	🟡	🔴
	1.5: Access	🟢	🟡	🔴
	1.6: Equity			
Goal 2: Meet current and future transit demand in a cost-effective manner	2.1: Operating cost	🟡	🟢	🟢
	2.2: Capacity			
	2.3 Return on Investment	🟡	🟡	🔴
	2.4: Environmental Impacts	🟡	🟡	🔴
Goal 3: Support economic development, revitalization and land use redevelopment opportunities for the corridor	3.1: Support plans			
	3.2: Aesthetics			
	3.3: Main Street projects			
	3.4: Franklin improvements			
	3.5: Business impacts			
Goal 4: Enhance the safety and security of the corridor	4.1: Ped and bike safety			
	4.2: Transit user safety			
Goal 5: Enhance other modes of travel	5.1: Traffic impacts			
	5.2: Bike and ped connections			
PNGO Screening Recommendation (Retain or Eliminate)		**Retain**	**Retain**	**Eliminate**

Good = 🟢 Moderate = 🟡 Poor = 🔴 Unknown or Not Impacted = Blank

Project Team Recommendations

Retain options on McVay Highway and Old Franklin and eliminate the option on the Haul Road. The Haul Road requires construction of new roadways in potentially environmentally sensitive areas and would not serve existing development. It is rated as poor for ridership, access, return on investment, and potential environmental impacts.

5.9 BRT Station Spacing

The three (3) BRT Station Spacing options were screened against the Goals and Objectives. One of the Station Spacing options addressed the Objectives at a "Good" or "Moderate" level while two of the options also included one "Poor" score (Table 5.8-1).

Table 5.8-1. Screening Summary BRT Station Spacing

		Options		
Goals	**Objectives**	**1. Stations spaced less than 1/3 mile apart**	**2. Stations spaced approx. 1/3 mile apart**	**3. Stations spaced more than 1/3 mile apart**
Goal 1: Improve corridor transit service	1.1: Travel time	🔴	🟡	🟢
	1.2: Reliability	🟡	🟢	🟢
	1.3: Transfers			
	1.4: Ridership	🟡	🟢	🟡
	1.5: Access	🟢	🟡	🔴
	1.6: Equity			
Goal 2: Meet current and future transit demand in a cost-effective manner	2.1: Operating cost	🟡	🟢	🟢
	2.2: Capacity			
	2.3 Return on Investment			
	2.4: Environmental Impacts			
Goal 3: Support economic development, revitalization and land use redevelopment opportunities for the corridor	3.1: Support plans	🟡	🟢	🟡
	3.2: Aesthetics			
	3.3: Main Street projects	🟡	🟢	🟡
	3.4: Franklin improvements	🟡	🟢	🟡
	3.5: Business impacts			
Goal 4: Enhance the safety and security of the corridor	4.1: Ped and bike safety			
	4.2: Transit user safety			
Goal 5: Enhance other modes of travel	5.1: Traffic impacts			
	5.2: Bike and ped connections			
PNGO Screening Recommendation (Retain or Eliminate)		**Eliminate**	**Retain**	**Eliminate**

Good = 🟢 Moderate = 🟡 Poor = 🔴 Unknown or Not Impacted = Blank

Project Team Recommendations

The option with approximately 1/3 mile station spacing for BRT service has been shown based on existing EmX service to be the appropriate balance between access and operating efficiency. It should be noted that this represents an average stop spacing, and that distances greater than or less than 1/3

mile may be used depending on the location of activity centers and on adjacent land uses. For example, two major activity centers within a couple blocks of each other may each warrant a BRT station, while a stretch of a half mile or more without significant ridership generators may not warrant a stop.

5.10 Recommendation Summary

The project team's recommendations are summarized in Table 5.9-1.

Table 5.9-1. Project Team Recommendations Summary

Options	Project Team Recommendations: Retain	Project Team Recommendations: Eliminate
5.3: Enhanced Bus Options (page XX for more information)		
Enhanced Bus Options 1: Main Street (Figure 4.2-3)	●	
Enhanced Bus Option 2: McVay Highway (Figure 4.2-4)	●	
Enhanced Bus Option 3: Main Street Express (Figure 4.2-5)	●	
Enhanced Bus Option 4: Freeway Express (Figure 4.2-6)		●
Enhanced Bus Option 5: Main-McVay (Figure 4.2-7)		●
Section 5.3 Project Team Recommendations Eliminate Option 4 because it only serves a very small portion of the Corridor, does not meet the goal of cost-effectively meeting current demand in the Corridor, and would not address several other Corridor objectives. This option, which has virtually no capital cost, can be considered by LTD as a potential service improvement as part of the Annual Route Review. Eliminate Option 5 because the connection of the two corridors and matching their service levels would require a large increase in operating cost on the McVay Segment, which does not meet the goal of cost-effectively meeting current demand. The option of maintaining the existing service frequency on each of the two segments would result in less than half of the trips on the Main Street Segment continuing to the McVay Segment, which results in an inconsistent connection for riders and essentially negates the benefits of connecting (interlining) the two segments.		
5.4: BRT Service Options (page XX for more information)		
Bus Service Option 1: Franklin-Gateway; Main-McVay (Figure 4.2-8)		●
Bus Service Option 2: Franklin-Main; Gateway-McVay (Figure 4.2-9)	●	
Bus Service Option 3: Franklin-Gateway; Main; McVay (Figure 4.2-10)		●
Bus Service Option 4: Franklin-Main; Gateway; McVay (Figure 4.2-11)	●	
Section 5.4 Project Team Recommendations Retain Options 2 and 4 because they best meet the Goals and Objectives. The other two options do not provide for the east-west EmX connection that is consistent with the BRT system plan. In addition, the Franklin-Main connection results in the greatest reduction in transfers and the two segments have similar operational and service frequency requirements. Connecting segments that have matching service demand results in the most efficient provision of service. Option 1 would require a significant increase in operating costs in the McVay Highway Segment to match the service frequency of the Main Street Segment. This would significantly increase LTD operating costs. The option of maintaining the existing service frequency on each of the two segments would result in an inconsistent connection and essentially negate the benefits of connecting (interlining) the two segments. In addition, this		

Options	Project Team Recommendations: Retain	Project Team Recommendations: Eliminate
option is not consistent with the BRT Service Plan which includes an east/west (Franklin/Main) connection. Option 3 requires that a greater number of riders transfer than the other options. In addition, Option 3 is not consistent with the BRT Service Plan which includes the east/west (Franklin/Main) connection as well as a north south (Gateway/McVay). This option does not provide either of those two connections.		
5.5: BRT Lane Configurations (page XX for more information)		
Lane Configuration Option 1: High Exclusivity		
Lane Configuration Option 2: Moderate Exclusivity		
Lane Configuration Option 3: Low Exclusivity		
Section 5.5 Project Team Recommendations Retain all three lane configuration options at this time. The more detailed concept designs and the screening based on the evaluation criteria will provide the specificity needed to assess the options in a more thorough manner. Key evaluation criteria that will assist in evaluating lane configuration options are transit travel time, service reliability, return on investment, and business impacts.		
5.6: BRT Routing Main Street East Routing Options and Eastern Terminus (page XX for more information)		
East Main Option 1: Thurston Station (with connector service)		
East Main Option 2: Thurston High School (with connector service)		
East Main Option 3: Thurston Road to 69th		
East Main Option 4: Main to 72nd		
Section 5.6 Project Team Recommendations It is recommended that Options 1 and 2 be carried forward to the next screening phase. These Options which terminate at the Thurston Station or Thurston High School, result in lower operating cost and best return on investment because they avoid the need to extend high-frequency BRT service and BRT capital improvements east of 58th Street. In addition, those two options would include neighborhood connector service that can be tailored to best meet the needs of the east Springfield area in terms of routing, access, service frequency, and bus size. A neighborhood bus connecting with the BRT service at Thurston Station can be designed to have multiple routes that serve various neighborhoods, including the area south of Main Street. A hybrid of Options 1 and 2 which extends the BRT service to Thurston High School only during high student rider demand times can also be considered.		
5.7: BRT Main Street Downtown Routing Options (see Section 5.7, page XX for more information)		
Downtown Routing Option 1: Main Street / South A Couplet		
Downtown Routing Option 2: South A Street (eastbound and westbound)		
Downtown Routing Option 3: South A Street to 10th or 14th; Couplet east of 10th or 14th		
Section 5.7 Project Team Recommendations At this stage of the Study, there is not enough data and information detail to screen the three (3) BRT Main Street Downtown Routing options against the Goals and Objectives. It should be noted that an option to use Main Street for two-way BRT service was considered but eliminated prior to this screening step because it would have required either the elimination of one of the two travel lanes or the removal of on-street parking, both of which were seen as having too great of an impact on traffic and/or downtown businesses and, thus, not reasonable solutions.		
5.8: BRT Routing McVay South (see Section 5.8, page XX for more information)		

Options	Project Team Recommendations: Retain	Project Team Recommendations: Eliminate
South McVay Option 1: McVay Highway (west side of I-5)	●	
South McVay Option 2: Old Franklin (east side of I-5)	●	
South McVay Option 3: Haul Road (east side of I-5)		●

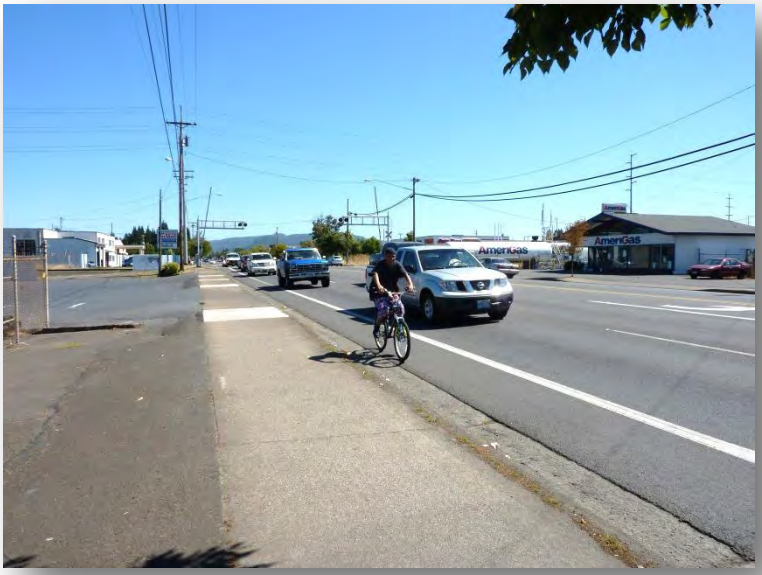
Section 5.8 Project Team Recommendations

Retain options on McVay Highway and Old Franklin and eliminate the option on the Haul Road. The Haul Road requires construction of new roadways in potentially environmentally sensitive areas and would not serve existing development. It is rated as poor for ridership, access, return on investment, and potential environmental impacts.

5.9: BRT Station Spacing (see Section 5.9, page XX for more information)		
Station Spacing Option 1: Stations routinely spaced less than 1/3 mile apart		●
Station Spacing Option 2: Stations spaced approximately 1/3 mile apart (can vary depending on adjacent uses)	●	
Station Spacing Option 3: Stations routinely spaced more than 1/3 mile apart		●

Section 5.9 Project Team Recommendations

The option with approximately 1/3 mile station spacing for BRT service has been shown based on existing EmX service to be the appropriate balance between access and operating efficiency. It should be noted that this represents an average stop spacing, and that distances greater than or less than 1/3 mile may be used depending on the location of activity centers and on adjacent land uses. For example, two major activity centers within a couple blocks of each other may each warrant a BRT station, while a stretch of a half mile or more without significant ridership generators may not warrant a stop.



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6 Next Steps

The next steps in the study process are described in this chapter.

6.1 Narrowing Range of Transit Solutions

The SAC and the GT will review the findings of this Tier I PNGO Screening and determine which transit solutions best meet the Study's PNGO. The transit solutions best meeting the Study's PNGO will be advanced to the Tier II Screening-Level Evaluation for a more detailed level of screening. The decision regarding which transit solutions to advance into the Tier II Evaluation is anticipated in October 2014.

6.2 Tier II Evaluation

In the Screening-Level evaluation, the Evaluation Criteria will be used to determine how well each of the proposed transit solutions would meet the project's Goals and Objectives. The Evaluation Criteria are described in Section 2.6 and the Goals and Objectives are described in Section 2.5. Each of the transit solutions is scored based on the Evaluation Criteria – the higher the point total the better the option is in meeting the Study's Goals and Objectives. The resulting data and scoring will be used to assist in comparing and contrasting transit solutions.

There is no proposed weighting of the criteria. It is understood and expected that those evaluating the transit solutions will provide their own perspective on the importance of individual criteria in forming their opinions of the relative merits of the options.

The findings and recommendations from the Screening-Level Evaluation will be considered by the SAC and the GT in determining the range of most promising transit solutions, which are those solutions that have the greatest probability of addressing the identified Corridor transportation problems. The decision regarding which transit solutions hold the most promise for resolving transportation problems in the Corridor is anticipated in February 2015.

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ATTACHMENT A: GLOSSARY OF ACRONYMS, TERMS AND ABBREVIATIONS

The glossary below provides an at-a-glance guide to many of the terms that may be used throughout the project Study.

Acronyms and Abbreviations [Updated 05-21-14]

Acronyms & Abbreviations	Defined
AA	Alternatives Analysis
ADT	Average Daily Traffic
BAT Lane	Business Access and Transitway Lane
BMPs	Best Management Practices
BRT	Bus Rapid Transit
CATS	Central Area Transportation Study
CEQ	Council on Environmental Quality
COL	College
CPTED	Crime Prevention through Environmental Design
DCE	Documented Categorical Exclusion
DEIS	Draft Environmental Impact Statement
DEQ	Oregon Department of Environmental Quality
DLCD	Oregon Department of Land Conservation and Development
DO	Design Option
DSL	Oregon Department of State Lands
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EmX	Emerald Express, Lane Transit District's Bus Rapid Transit System
EPA	U. S. Environmental Protection Agency
ESA	Endangered Species Act
ESH	Essential Salmonid Habitat
EWEB	Eugene Water and Energy Board
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FEIS	Final Environmental Impact Statement
FTA	Federal Transit Administration
FTN	Frequent Transit Network
HBO	Home-based Other
HBW	Home-based Work
HCT	High Capacity Transit
ISTEA	Intermodal Surface Transportation Efficiency Act
ITS	Intelligent Transportation Systems
JLPAC	Joint Locally Preferred Alternative Committee
LCC	Lane Community College
LCOG	Lane Council of Governments
LOS	Level of Service
LPA	Locally Preferred Alternative
LRAPA	Lane Regional Air Protection Agency

Acronyms & Abbreviations	Defined
LRFP	Long-Range Financial Plan
LTD	Lane Transit District
LWCF	Land and Water Conservation Fund
MAP-21	Moving Ahead for Progress in the 21st Century Act
Metro Plan	Eugene-Springfield Metropolitan Area General Plan
MEV	Million Entering Vehicles
MIS	Major Investment Study
MDR	Medium Density Residential
MOS	Minimum Operable Segment
MOE	Measures of Effectiveness
MPC	Metropolitan Policy Committee
MPO	Metropolitan Planning Organization
MSA	Metropolitan Statistical Area
NEPA	National Environmental Policy Act
NHN	Non-home Based Non-work
NHW	Non-home Based Work
NOI	Notice of Intent
NOX	Nitrogen oxides
NPS	U.S. Department of Interior's National Park Service
NRHP	National Register of Historic Places
O&M	Operations and maintenance
OAR	Oregon Administrative Rule
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
OSP	Oregon State Police
PM	Particulate matter
ROW	Right-of-Way
RTP	Central Lane Metropolitan Planning Organization Regional Transportation Plan
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SCC	Standardized Cost Comparison
SCH	School
SHP	Home-based Shopping
SHPO	Oregon State Historic Preservation Office
STA	Special Transportation Area
SUB	Springfield Utility Board
TAZ	Transportation Analysis Zone
TDM	Transportation Demand Management
TE&S	Threatened, Endangered and Sensitive
TESCP	Temporary Erosion and Sediment Control Plan
TMA	Transportation Management Area
TMDLs	Total Maximum Daily Loads
TPR	Transportation Planning Rule
TransPlan	Eugene-Springfield Transportation System Plan
TSM	Transportation System Management
TSUB	Transportation System User Benefits
UGB	Urban Growth Boundary
VMT	Vehicle Miles Traveled

Acronyms & Abbreviations	Defined
VOCs	Volatile organic compounds

Terms [Updated 05-21-14]

Terms	Definitions
Accessibility	The extent to which facilities are barrier free and useable by persons with disabilities, including wheelchair users.
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.”
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.
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.
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 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."
Base Fare	The price charged to one adult for one transit ride; excludes transfer charges, zone charges, express service charges, peak period surcharges and reduced fares.
Business Access and Transitway Lane (BAT)	In general, a BAT lane is a concrete lane, separated from general-purpose lanes by a paint stripe and signage. A BAT lane provides 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.
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, HOV lanes, expressways, or ordinary streets. The vehicles are designed to allow rapid passenger loading and unloading, with more doors than ordinary buses.
Busway	Exclusive lane for buses
Clean Air Act Amendments of 1990 (CAAA)	The comprehensive federal legislation which 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.

Terms	Definitions
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.
Community Cohesion	A measure of how well residents can connect with one another within their community. These connections can occur at gathering places such as schools, community centers, parks, or transit stations. High home ownership rates and active neighborhood associations also contribute to higher levels of community cohesion.
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 (U.S. DOT), and is based on whether transportation plans and programs meet the provisions of a State Implementation Plan.
Cooperating Agency	Regulations that implement NEPA 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 SAFETEA-LU, 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.
Congestion Mitigation and Air Quality (CMAQ)	Federal funds available for either transit or highway projects which contribute significantly to reducing automobile emissions which cause air pollution.
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.
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.
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.
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.
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

Terms	Definitions
	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).
EmX	Lane Transit District's Bus Rapid Transit System, pronounced "MX", short for Emerald Express.
Environmental	A report subject to the requirements of the National Environmental
Assessment (EA)	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; statements are required by the National Environmental Policy Act (NEPA).
Environmental Justice	A formal federal policy on environmental justice was established in February 1994, with Executive Order 12898 (EO 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.
Exclusive Right-of-Way	A highway or other facility that can only be used by buses or other transit vehicles.
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 to specific locations; each fixed-route trip serves the same origins and destinations, unlike demand responsive and taxicabs.
Frequent Transit Network	The Frequent Transit Network (FTN) represents the highest orders of transit service within the region. The FTN represents corridors where transit service would be provided, but does not presume specific street alignments. Street alignments will be determined in future studies. FTN stops will be located

Terms	Definitions
	closest to the highest density development within the corridor. FTN Corridors will have the following characteristics: • Enables a well-connected network that provides regional circulation • Compatible with and supportive of adjacent urban design goals • Operates seven days a week in select corridors • Service hours are appropriate for the economic and social context of the area served • Coverage consists of at least 16 hours a day and area riders trip origins or destinations are within ¼ of a mile-straight line distance • Frequency is at least every 10-15 minutes in peak travel times • Speed is no less than 40 percent of the roadway speed limit • Coverage throughout the region is geographically equitable and serves Title VI protected populations • Transit service is reliable and runs on schedule
Geographic Information System (GIS)	Data management software tool that enables data to be displayed geographically (i.e., as maps).
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.
High Capacity Transit (HCT)	High capacity transit is any transit mode characterized by carrying a larger volume of passengers using larger vehicles and/or more frequent service than a standard fixed route bus system. High capacity transit can operate on exclusive rights-of-way such as a rail track or dedicated busway, or on existing streets with mixed traffic. The main goal of high capacity transit is to provide faster, more convenient and more reliable service for a larger number of passengers.
High Occupancy Vehicle (HOV) lane	Lanes, typically on freeways, that are used exclusively by carpools and buses. In some cases, HOV lanes are in effect for only a portion of the day and revert to general purpose lanes during non-peak travel periods
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).
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.
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 which involve or affect more than one mode of transportation, including transportation connections, choices, cooperation and coordination of various modes. Also known as "multimodal."
Joint Development	Ventures undertaken by the public and private sectors for development of land around transit stations or stops.
Kiss and Ride	A place where commuters are driven and dropped off at a station to board a public transportation vehicle.
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

Terms	Definitions
	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)	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 (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.
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.
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 Locally Preferred Alternative is the alternative selected through the Alternatives Analysis process completed prior to or concurrent with NEPA analysis. This term is also used to describe the proposed action that is being considered for New Starts or Small Starts funds.
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 rail 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 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

Terms	Definitions
	study is to provide a framework for developing a package of potential solutions that can then be further analyzed during an Environmental Impact Statement (EIS) process.
Moving Ahead for Progress in the 21st Century Act (MAP-21)	The current federal transportation bill. Bill is for two years and set to expire in October 2014. Hill included significant changes toi federal funding programs and changed the evaluation criteria for the New Starts/Small Starts Program
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	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.
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, operating characteristics and right-of-way separation from other traffic.
Modal Split	A term which describes how many people use alternative forms of transportation. Frequently used to describe the percentage of people using private automobiles as opposed to the percentage using public transportation.
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 requires preparation of an Environmental Impact Statement (EIS) 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. Projects qualifying for funding under FTA's New Starts Program have a total project cost greater than $250 million and/or are requesting greater than $75 million in FTA funding
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).
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.

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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."
Park & 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.
Peak/Base Ratio	The number of vehicles operated in passenger service during the peak period divided by the number operated during the base period.
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.
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."
Ridership	The number of rides taken by 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.
Safe, Accountable, Flexible, Efficient Transportation Equity Act : A Legacy for Users (SAFETEA-LU)	Federal transportation bill passed by Congress July 29, 2005, signed by the President August 10, 2005. Included new and revised program guidance and regulations (approximately 15 rulemakings) with planning requirements related to public participation, publication, and environmental considerations. SAFETEA-LU was originally intended to cover FY 2005 through FY 2009, but through various extension continued until 2012.

Terms	Definitions
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.
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.
Small Starts Program	The Small Starts Program is part of FTA's New Starts Program. FTA's New Starts/Small Starts Program provides funding for new rail or busway projects, the improvement and maintenance of fixed guideway systems, and the upgrading of systems. Capital assistance grants provide up to 80% of the net project costs. Projects qualifying for funding under FTA's Small Starts Program must have a total project cost less than $250 million and requesting less than $75 million in FTA funding.
State Implementation Plan (SIP)	A state plan mandated by the Clean Air Act Amendments of 1990 (CAAA) 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.
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.
Title IV	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.
Throughput	The number of users being served at any time by the transportation system.
Transit Oriented Development (TOD) or Nodal Development	An initiative 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 BRT priority lane generally with a concrete lane with or without concrete tracks with grass-strip divider and a curb separation, traverseable 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 which 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). Sub area in which multiple transportation facilities are experiencing congestion, safety or other problems.
Vehicle Hours of Delay	Cumulative delay experience by transit vehicles during high traffic periods.

Terms	Definitions
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 LOS. If the volume exceeds the capacity of the roadway (volume divided by capacity exceeds 1.00), congestion exists.
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.
WEEE	West Eugene EmX Extension

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APPENDIX B: REFERENCES

The following reference documents are available at Lane Transit District Administration (Glenwood) and the city of Springfield (City Hall – Transportation Planning office).

Evans, John and Reesor, David. (2014). Memorandum to Main-McVay Study Governance Team. Main-McVay Transit Study: Range of Possible Transit Solutions.

Evans, John and Reesor, David. (2014). Memorandum to Main-McVay Study Governance Team. Stakeholder Advisory Committee Recommended Revisions to the Study's Problem Statement, Needs Statement and Evaluation Criteria.

Lane Transit District and City of Springfield. (2014). Main-McVay Transit Study, Baseline Existing and Future Conditions.

Lane Transit District and City of Springfield. (2014). Main-McVay Transit Study, Service Screening Evaluation.

Viggiano, Stefano and Wannamaker, Lynda. (2014). Memorandum to Main-McVay Transit Study Stakeholder Advisory Committee. Mode Alternatives Recommendations for Main-McVay Transit Study.

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