

**EUGENE-SPRINGFIELD,
OREGON**

**EAST WEST PILOT BRT
LANE TRANSIT DISTRICT**

(BRIEF)

Table of Contents

EUGENE-SPRINGFIELD, OREGON (USA)	1
COUNTY CONTEXT AND SYSTEM DESCRIPTION	1
SYSTEM OVERVIEW	1
PLANNING AND IMPLEMENTATION BACKGROUND	1
SYSTEM DESCRIPTION	2
VEHICLES	4
FARE COLLECTION.....	4
RIDERSHIP	4
COSTS	4
ASSESSMENT	5

EUGENE-SPRINGFIELD, OREGON (USA)

Brief: East-West Pilot BRT

Lane Transit District

COUNTY CONTEXT AND SYSTEM DESCRIPTION

Lane County, Oregon, is located in the upper Willamette Valley, west of the Cascades. Springfield and Eugene, the two largest cities in the county, are located side by side along the Willamette River. The University of Oregon main campus is located in Eugene with 17,843 students and 3,536 faculty and staff (as of the year 2000). There are over 10,000 businesses in and around Eugene with 190,000 people living in both cities. Downtown Springfield is only 5 miles [8 km] east of downtown Eugene. Projected population growth in the Lane County region has spurred interest in developing a more comprehensive public transportation system. The population is projected to grow from 322,959 in 2000 to 413,000 in the year 2015. This increase raises serious issues regarding traffic congestion, air quality, and the use of public resources.

SYSTEM OVERVIEW

In its commitment to helping preserve the community's way of life, the Lane Transit District is planning to implement a bus rapid transit (BRT) system to serve Springfield and Eugene. The system seeks to emulate rail-based service through the application of a combination of low-cost, proven transit technologies. The proposed BRT system will be composed of high-frequency and fast transit services along major corridors (see [Figure 1](#)) with smaller buses providing access from neighborhoods to the BRT lines, nearby shopping, and employment. Planning is completed, with the Federal Transit Administration issuing a finding of "no significant impact" for environmental impacts associated with the first phase.

PLANNING AND IMPLEMENTATION BACKGROUND

A traffic congestion study indicated that the Eugene/Springfield area rated in the top two areas nationwide for projected increases in congestion. Achieving state-mandated goals for reducing the number of vehicle miles traveled is difficult without an alternative transportation strategy in place to address the rapid growth in the region's population and the increasing number of miles traveled. The increased congestion will adversely affect the current bus operations and efficiency. Bus travel times and associated operating costs are expected to increase.

After determining that bus rapid transit would cost less than a comparable light rail system, Eugene officials decided to implement bus rapid transit in a 10-mile [16-km] pilot corridor. This service will consist of a main trunk route and feeder routes to provide neighborhood connections (see [Figure 2](#)). Some of the features to be incorporated include easy boarding, low-floor BRT vehicles on the main corridor, smaller neighborhood buses, signal priority for BRT vehicles at intersections, dedicated BRT lanes, prepaid fares from ticket vending machines and passes to speed boarding, and comfortable transit stations.

Planners hope the new system will be competitive with the automobile and provide frequent bus service with little waiting on the main travel corridors.

The pilot corridor will be part of a long-range goal for implementing a metropolitan-wide BRT network. It will be composed of an east-west corridor extending 10 miles [16 km] from the Thurston area in east Springfield to west Eugene.

Initially, the first phase will be a 4-mile [6.5-km] segment with nine stations connecting downtown Eugene with downtown Springfield, the two major transit hubs. The environmental impact statement review indicated that there would be no significant adverse impact to the area. Construction of Phase 1 will begin in 2003 with service scheduled to begin in late 2004. The second phase involves extending the lines out to west Eugene on the western end and north Springfield on the eastern end. A preferred alignment will be selected by the fall of 2003. It is scheduled to start service on September 2005.

The concerns of the Lane Transit District in the planning, design, implementation, and operation of bus rapid transit include the following:

- Design, use, and maintenance of guideways;
- Limited selection of vehicles in the American bus market, lack of new designs, and long lead times for development of new vehicle designs;
- Making appropriate decisions on Intelligent Transportation Systems (ITS);
- Public acceptance and support for a non-automobile major transportation investment; and
- Funding for future phases.

Currently, planning and preliminary work on the pilot corridor is underway. The 10-mile [16-km] corridor has been broken into eight planning segments for preliminary engineering and public input. The purpose of the public process is to educate residents and businesses about the BRT project and to gather their input on corridor issues and concerns. The process includes one-on-one meetings with adjacent business owners, a project newsletter, and a series of interactive workshops for the residents and business owners. The input process is intended to be flexible and adaptive to the specific needs of each segment.

Since the inception of this project, the Lane Transit District Board of Directors has stated that they would not proceed with BRT without the approval of local municipalities. Collaboration between the transit agency and local jurisdictions will continue through final design and construction of Phase One and on all subsequent BRT lines.

SYSTEM DESCRIPTION

The bus rapid transit system will operate with a variety of corridor treatments. Most of the route will operate on an exclusive transitway. However, it is recognized that not all

locations in the identified corridor will have the right-of-way for such operations, and will require mixed traffic operations (i.e., a bridge). It is expected that operations will include electronically guided transit as well as more traditional transit lanes. In areas with bus lanes, a different pavement treatment will help differentiate the lanes from general-purpose lanes. Another special situation involves a single lane being used to accommodate BRT vehicles traveling in two directions (time separated). Block signaling will be used with priority given to the peak-direction bus movements in the single-lane busways (see [Figure 3](#)).

Median transitways will be utilized at three locations in the first phase of the pilot corridor. Each of these applications differs in environment, lane demarcation, and bus direction. On the section of the pilot BRT route that utilizes Franklin Boulevard adjacent to the University of Oregon, the transitways are located in a tree-lined, landscaped median strip. Franklin Boulevard is a heavily traveled, four-lane urban arterial with left-turn lanes and restricted access. Depending on the location of the trees, one or two single-lane transitways are to be provided. To minimize spatial needs and the impact to the landscaped median, BRT vehicles will operate in guided mode.

Approaching downtown Eugene, a single-lane, two-way, median transitway will be used for approximately two blocks. The BRT vehicles will operate in guided mode with vehicle entry controlled by a system of “block” traffic signals. Existing on-street parking will be removed to accommodate the transitway. Left-turn access is currently restricted. Toward the eastern end of the first phase of the pilot corridor, a two-lane median busway is proposed. BRT vehicles will be unguided in this section of the corridor, and unrestricted access will be provided across the transitways. The transitway, however, will be provided with some form of tactile demarcation to denote the bus facility. BRT vehicles will share left-turn pockets at intersections to eliminate the need for further road widening. [Figure 4](#) shows proposed median transitway concepts.

Some of the bus transit system features include the following:

- Exclusive transit lanes, including electronically guided vehicles;
- ITS, including transit signal priority and real-time passenger information;
- Limited stops with improved facilities;
- Barrier-free fare payment systems and prepaid fares and passes to simplify boarding;
- Park-and-Ride lots located along the BRT routes;
- Easy-to-board, low-floor express buses on main traffic corridors; and
- Improved stops and stations with shelters, lighting, and passenger information.

All stations will include amenities such as ticket machines, benches, shelters, bike storage, lighting, and information displays. This is in an effort to create a new public image of the BRT system as having similar service and reliability as rail systems.

Guided buses combine the flexibility of bus transit with the conveniences and permanence of rail transit at a relatively low cost. The guidance will be magnetic, differential global positioning systems (dgps), and dead reckoning. This guided BRT design allows for reduced lane-width requirements. Steering is automated through the electronic guidance, which only requires pavement under the wheel tracks. This provides an opportunity for the inclusion of additional green space between the tracks. The guided bus technique allows for “precision docking” at the stations.

Service levels are planned to operate with 10-minute headways during the day on weekdays and 20-minute headways during evenings and weekends. The service level will be increased and adjusted in the future based on the ridership demand. Using detailed computer modeling, it is expected that the BRT system during peak-hour conditions in 2020 will decrease bus travel time by 40 percent, from 27 minutes to 15 minutes.

Phase One is to be constructed primarily within the right-of-way of existing streets. The biggest challenge is to fit exclusive transitways within the existing corridor. The BRT line will use a combination of guideways, transit lanes, and travel in mixed traffic. A combination of both single-lane and double-lane guideways and transit lanes will be used. The BRT line will deviate from the main arterial street in one section of the corridor.

VEHICLES

The Lane County Transit District has selected the Phileas vehicle. The Phileas is quiet, clean, and has a “rail-like” appearance. The vehicle has a more “European” appearance and conveys a “rail-like” image and identity that is fast and modern. The Phileas is a hybrid electric vehicle. Vehicle components that contribute to operational efficiency include low floors and multiple doors. In the first phase, it is estimated that six vehicles will be required, with four in service and two as spares. The vehicle is 60 feet in length.

FARE COLLECTION

Fare collection will be barrier-free with a proof-of-payment system. Ticket machines will be installed at all stations. The receipts will be time-stamped and will be used as proof of payment along with passes and valid transfers from other buses. Random fare checking will be conducted. Various ITS technologies will be used to reduce travel times and improve passenger convenience. Some technology that can be used includes traffic signal priority, automated vehicle location systems, real-time passenger information systems, and advanced fare collection and ticket-issuing technology.

RIDERSHIP

In the year 2015, P.M. peak-hour, peak-direction ridership with the transitway is estimated at 575 passengers. This increase is 46 percent over the estimated 395 passengers without the transitway.

COSTS

It has been estimated that the first phase of BRT will cost \$13 million (\$3.25 million per mile for a 4-mile [6.5-km] system). \$8.8 million will come from the federal government

as appropriated by Congress in 1999 and 2000. This provides for 80 percent of the initial phase costs, with Lane Transit District matching the remaining percent. One million dollars of the local capital will be committed for the planning of future BRT phases in each of the fiscal years 2001 and 2002. Funds for construction for vehicles and future phase implementation have yet to be secured.

ASSESSMENT

The Lane County BRT presents an innovative and environmentally responsible approach to a medium-sized urban area. Further analysis may be desirable to ensure the workability of the single-lane operations at stations.

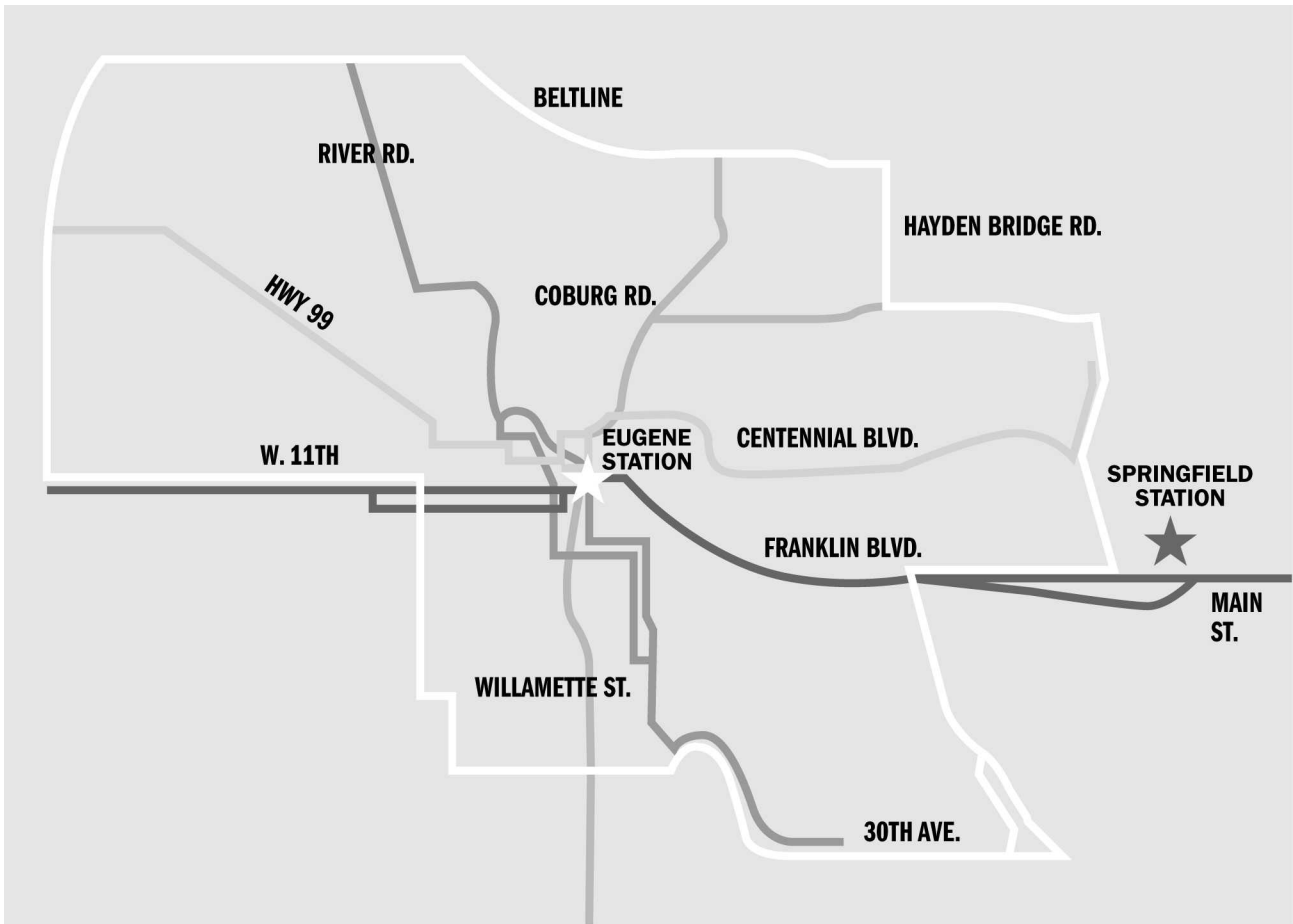


Figure 1: Major Transit Corridors



Figure 2: Main Trunk and Neighborhood Routes



Figure 3: Single-Lane Transitway with Station



Figure 4: Proposed Median Concept (with Ped./Bike Amenities)