

# Executive Summary

## INTRODUCTION

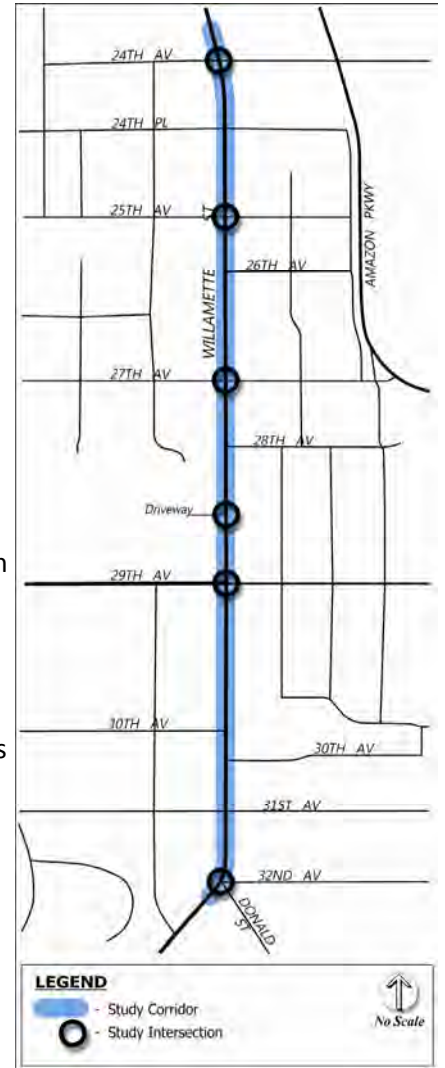
The South Willamette Street Improvement Plan (“Plan”) identifies options for people to easily and safely walk, bike, take transit, or drive in an eight-block section of South Willamette Street located between 24<sup>th</sup> Avenue and 32<sup>nd</sup> Avenue in Eugene, Oregon.

The goal of the Plan is to help South Willamette Street become a vibrant urban corridor accessible by bicycle, foot, car, and bus. The Plan aims to support the area’s businesses, encourage the district’s vitality, create balanced multi-modal transportation system, and foster well-informed community support for the project.

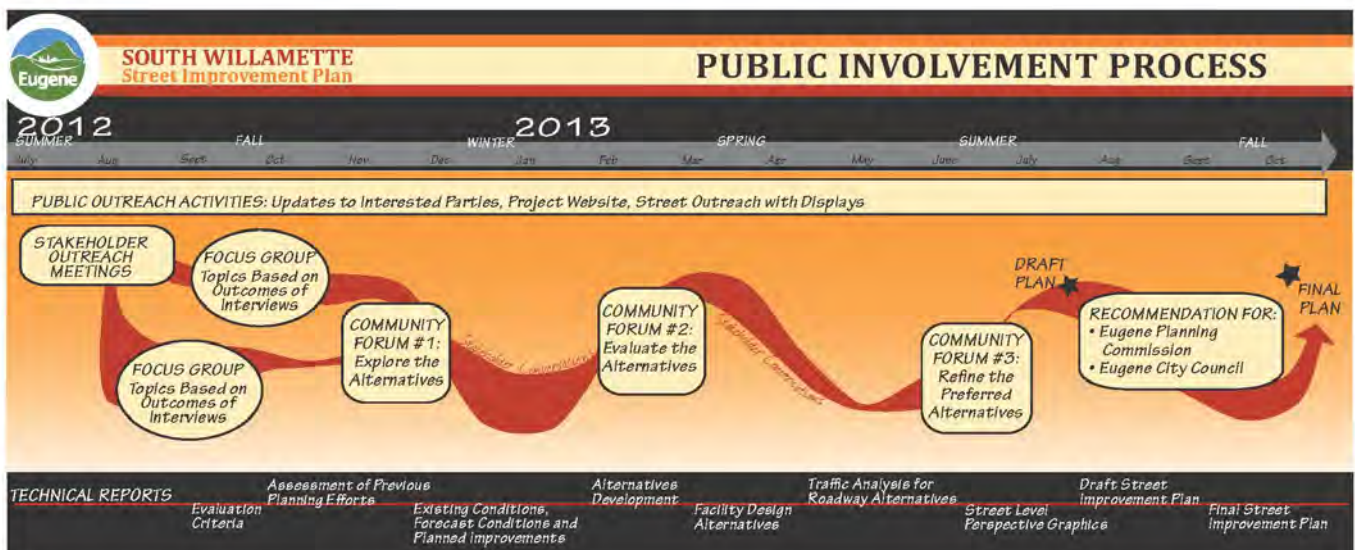
The Plan was developed through a collaborative process among various public agencies, key stakeholders and community members. The regional context was considered through a review of previous planning efforts for the area and the plan was developed in coordination with the Draft South Willamette Concept Plan (“Draft Concept Plan”). A broad level of public involvement was vital to the Plan development.

Throughout this project, the project team took time to understand multiple points of view, obtain fresh ideas and resource materials, and encourage participation from the community. The project team received public input through letters, phone calls, emails, and in-person at stakeholder outreach meetings and focus groups. Three community forums were held at key stages of the project and regular meetings were held with decision makers including City of Eugene Planning Commission and work sessions with the Eugene City Council.

In weighing all the considerations identified in this Plan, the community feedback and technical analysis, the consultant project team finds that **Alternative 3 (3-lanes with bike lanes)** represents the best solution for South Willamette Street.



Project Study Corridor





## EXISTING CONDITIONS

Existing transportation facilities and travel conditions on South Willamette Street were evaluated to establish a baseline for assessing potential design alternatives and improvements to the corridor.

### Existing Transportation Facilities

The existing transportation facilities vary within the study area between 24<sup>th</sup> Avenue and 32<sup>nd</sup> Avenue. The facilities are summarized below:

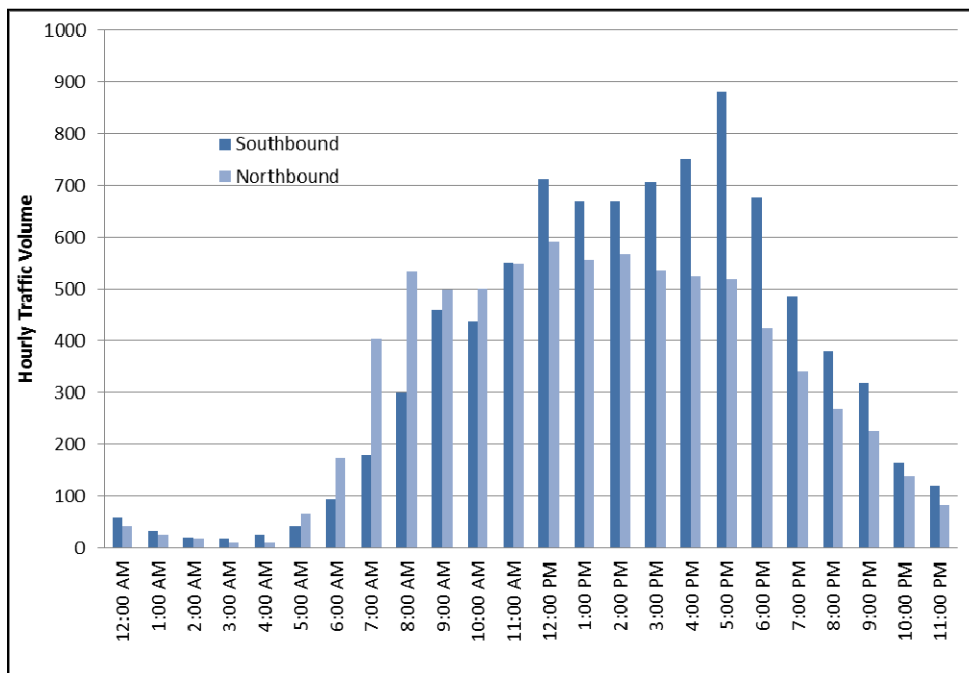
- **Roadway configuration:** includes a 4-lane section north of 29<sup>th</sup> Avenue, a 5-lane section near the 29<sup>th</sup> Avenue intersection, and a 3-lane section south of 29<sup>th</sup> Avenue.
- **Right-of-way:** width ranges from approximately 60 to 75 feet, with the widest section near the 29<sup>th</sup> Avenue intersection.
- **Number of driveways:** over 70 on the 0.8 mile corridor of Willamette Street.
- **Sidewalks:** present on both sides of Willamette Street for the full length of the study corridor, varying in width from approximately 5 feet to 9 feet. Most of the sidewalks in the study area are located curbside, with utility poles and other objects creating obstacles that impact accessibility.
- **Marked pedestrian crossings:** located at the five signalized intersections (at 24<sup>th</sup> Avenue, 25<sup>th</sup> Avenue, 27<sup>th</sup> Avenue, 29<sup>th</sup> Avenue, and 32<sup>nd</sup> Avenue).

- **Bike lanes:** exist approximately 250' south of 29<sup>th</sup> Avenue and continue south through 32<sup>nd</sup> Avenue. There are currently no bicycle facilities to the north of 29<sup>th</sup> Avenue.
- **Transit:** service consists of two bus routes operated by Lane Transit District through the corridor, with several bus stops located along Willamette Street.
- **Posted speed limit:** 25 mph

### Existing Travel Conditions

A wide variety of measures were used to evaluate existing travel conditions including traffic patterns, collision data, intersection operations and quality of travel for active modes and transit.

Traffic volumes vary by time of day and follow a typical directional pattern. The peak morning flow is heavier toward the downtown business district (northbound) and the peak afternoon traffic primarily moves away from downtown (southbound). Travel time on the corridor depends on the traffic volume and resulting delays that may occur.



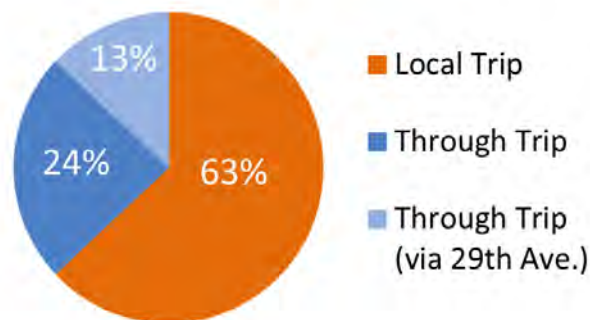
24-Hour Traffic Volumes (Willamette Street south of 27<sup>th</sup> Ave.)

Auto, pedestrian, bicycle and transit operations along Willamette Street were evaluated using multi-modal level of service (MMLOS) methodologies that measure user comfort along roadway segments. Motor vehicle traffic operations at study intersections were evaluated for a.m. and p.m. peak hours based on turn movement traffic counts.

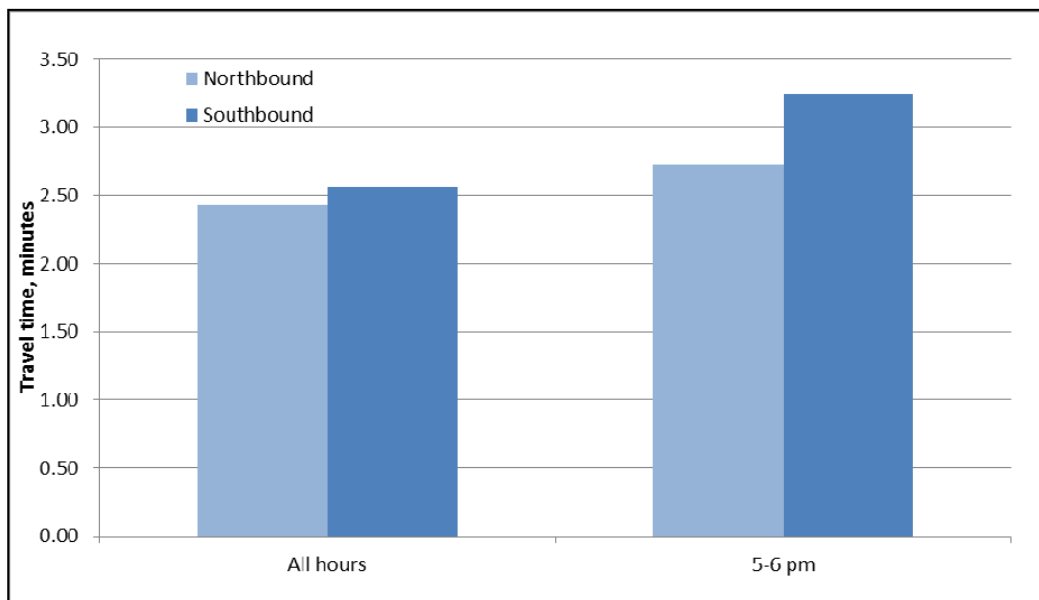
**Travel Conditions Highlights:**

- **16,500** daily traffic volume.
- **2.5** minutes daily average for end-to-end travel time on the corridor, increasing to approximately three minutes during the p.m. peak hour.
- More than **15%** of motor vehicles travel over 30 mph, exceeding the posted speed limit (25 mph) by 5 mph or more.
- **5.2** collisions per million vehicle-miles traveled is nearly double the statewide average (2.9) for urban city minor arterial streets.
- **100%** of study intersections meet the City of Eugene minimum operational performance standard (LOS D).

- **2%** of traffic is heavy vehicles.
- **63%** of Willamette Street travelers are “local” traffic - making a stop on Willamette Street or turning onto a local street. The remaining 37% are “through” travelers – those who do not stop and go directly north/south on Willamette Street between 24<sup>th</sup> Avenue and 32<sup>nd</sup> Avenue (24%), or make a turn at 29<sup>th</sup> Avenue (13%).



**Traveler Characteristics on Willamette Street (between 24th Ave. and 32nd Ave.)**

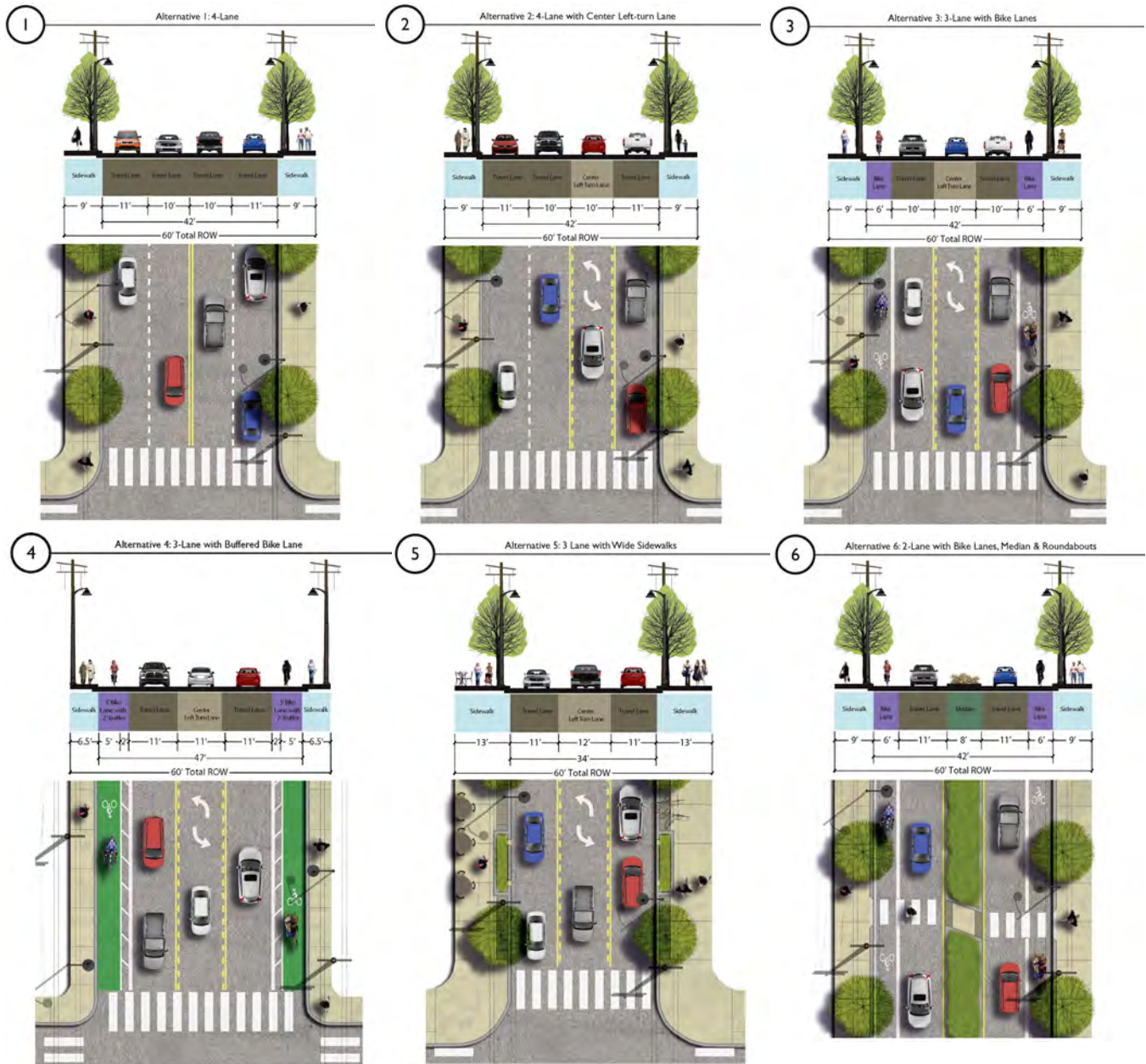


**Average Travel Times ( Willamette Street, between 24th Ave. and 32nd Ave.)**

## ALTERNATIVE CONCEPTS

Six conceptual roadway alternatives were proposed for consideration for the South Willamette Street Improvement Plan. The proposed alternatives were identified to support a long-term corridor vision, but also to facilitate development of a design plan that can be adopted and implemented in the short-term. The existing right-of-way was maintained in all alternatives to minimize cost.

The alternatives defined cross-section concepts that reflect a variety of community benefits and trade-offs for the corridor. Community Forum #1 (Explore The Alternatives), held in November of 2012, was critical in developing the range of options that were considered to meet community needs. Community Forum #2 (Evaluate the Alternatives), held in February of 2013, provided an opportunity to receive community feedback on which of the six proposed alternatives should be advanced.



**Conceptual Alternatives (Tier 1)**

## SCREENING EVALUATION

The six alternative concepts were refined to three based on both a technical review (Tier 1 screening) and public input received from the community and stakeholders. The Eugene City Manager has endorsed a triple-bottom-line approach to sustainability and analysis for City projects and programs providing for consideration of people, the planet, and prosperity (or equity, environment, and economy). In development of the Draft Eugene Transportation System Plan (Draft TSP), the Transportation Community Resource Group (TCRG) extensively vetted a sustainability rating system based on a triple-bottom-line analysis. The South Willamette Street Improvement Plan adapted the TCRG sustainability work to develop the Tier 1 screening criteria for qualitative assessment of the roadway alternatives.

The table to the right provides the assessment results, which show that Alternatives 3, 5, and 6 scored highest in the evaluation, though no alternative was clearly superior in all ways. In addition, based on public outreach, Alternative 3, 4, and 5 received the strongest community support.

Although the 4-lane alternatives (Alternative 1 and 2) scored the lowest on the evaluation criteria and received the least favorable public feedback, overall public input indicated the need for further analysis and discussion before reductions to motor vehicle capacity should be further considered. Therefore, the following three alternatives were selected for further refinement and more detailed analysis:

- 4-lane (Alternative 1)
- 3-lane with bike lanes (Alternative 3)
- 3-lane with wide sidewalks (Alternative 5)

Evaluation Criteria Scoring of Alternatives

Alternative		#1	#2	#3	#4	#5	#6
		4-Lane	4-Lane with Center Left-turn Lane	3-Lane with Bike Lanes	3-Lane with Buffered Bike Lanes	3-Lane with Wide Sidewalks	2-Lane with Bike Lanes, Median & Roundabouts
Access & Mobility	Reliability (For All Modes)	0	0	0	0	0	0
	Neighborhood Connectivity	0	0	1	1	0	1
	Motor Vehicle Travel Time	0	0	-1	-1	-1	-1
	Active Mode Travel Time	0	0	1	1	0	1
Safety & Health	Safety	0	0	1	1	1	1
	Security	0	0	1	1	1	1
	Emergency Response	0	0	-1	-1	-1	-1
Social Equity	Equity	0	0	1	1	1	1
	Economic Access	0	0	1	1	1	1
Economic Benefit	Freight Mobility	0	0	-1	-1	-1	-1
	Walkable/Bikeable Business District	0	0	1	1	1	1
	Business Vitality	0	1	0	0	0	-1
Cost Effectiveness	Fundability	1	0	0	-1	-1	-1
	Asset Management	1	1	1	1	1	1
	Project Benefits	1	1	1	1	1	1
Climate & Energy	Reduce Vehicle Miles Traveled	0	0	0	0	0	0
	Pedestrian Facilities	0	0	0	-1	1	0
	Bicycle Facilities	0	0	1	1	0	1
	Transit Facilities	0	0	0	0	1	0
Ecological Function	Stormwater Design	0	0	0	0	0	0
	Landscape Design	0	0	0	0	0	0
Community Context	Community Vision and Land Use	0	0	0	-1	1	0
	Transportation Planning Compatibility	0	0	0	0	0	0
TOTAL		3	3	7	4	6	5

## ALTERNATIVES REFINEMENT

Additional roadway design details and options for corridor implementation were developed for each of the three alternative concepts advanced. These refinements included segment cross sections, intersection configurations, bicycle and pedestrian connections to the corridor, and other design considerations. Cost estimates were also prepared for each alternative.

In addition, some planned improvements are desired throughout the corridor and will be assumed for each

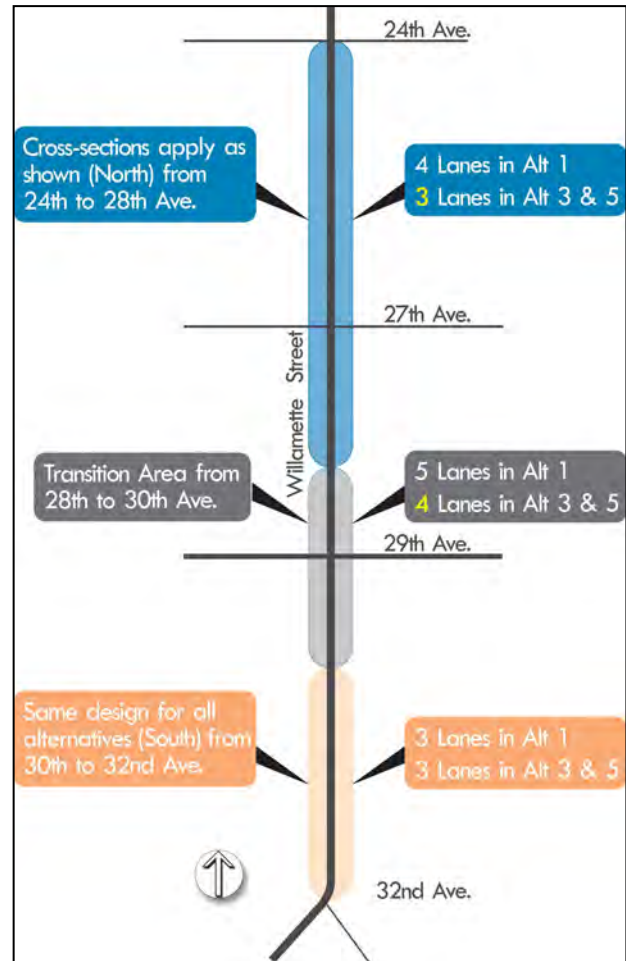


Illustration of Conceptual Alternatives (Tier 2)

alternative. These improvements include new pavement, improved drainage, wider sidewalks, and enhancements to pedestrian and bicycle access around Willamette Streets. Other improvements may vary depending on the location and alternative configuration.

## Potential Changes by Segment

The alternative cross section concepts previously illustrated apply on the north segment of Willamette Street, from 24<sup>th</sup> Avenue to near 28<sup>th</sup> Avenue. In the south segment of the study corridor, no differences are proposed for any alternative. Around 29<sup>th</sup> Avenue, a “transition area” will provide continuity between the corridor segments to the north and south, while best meeting the corridor’s identified needs and objectives.



Potential Cross-Section Changes by Segment

## Potential Changes at Intersections

**Woodfield Station Driveway Intersection:** It is recommended that a traffic signal at this intersection be considered as a design option in all alternatives. A traffic signal would provide better access for turning vehicles and an additional pedestrian crossing opportunity. Driveway modifications would likely be necessary on the east side of Willamette Street, across from the Woodfield Station Driveway.

**29<sup>th</sup> Avenue Intersection:** For Alternative 3 and 5, a proposed design option would include a 4-lane cross-section at 29<sup>th</sup> Avenue including a single northbound travel lane while retaining two southbound through travel lanes (and a left-turn lane.). Removing one of the two existing northbound travel lanes may be considered to accommodate bike lanes or wider sidewalks, respectively. Without reducing the number of vehicle lanes, additional right-of-way would be required to provide bike lanes or wider sidewalks. The two southbound lanes are needed to adequately serve the peak direction traffic demand at the intersection. The two southbound lanes would extend to beyond the Woodfield Station Driveway to provide additional vehicle storage space and capacity.

## Other Potential Refinements

- **Roundabouts** can improve traffic flow and safety when they are installed and are less expensive to operate and maintain compared to traffic signals. However, heavy vehicle operators may be opposed to roundabouts and significant property acquisition costs may be necessary to provide the right-of-way needed to construct appropriately-sized roundabouts. Traffic analysis results indicate that single lane roundabouts may not comfortably accommodate peak hour traffic demand at several intersections. Roundabouts are not explicitly included in the facility design of any alternative but may



**Conceptual Lane Configurations at Woodfield Station and 29th Ave. Intersections**

be considered further as potential design refinements.

- **Access Management** on public and private approaches will be considered to reduce the numerous conflict points for motor vehicles, pedestrians and bicyclists along the corridor. Access management strategies may include consolidating driveways, sharing access points between adjacent property owners, implementing turn lanes at driveways and parking circulation enhancements. Reducing conflict points is likely to result in fewer



crashes and increased capacity along the corridor. Managing access points along the corridor requires finding an appropriate balance between safety, mobility, and access. Preliminary consideration of access management strategies for the corridor indicates that recommended strategies will not be significantly different for any alternative compared to another.

- **Bus Pullouts** would remove stopped vehicles from travel lanes, but would likely require right-of-way acquisition and buses in the pullouts would need to merge back into the traffic stream. No bus pullouts are recommended for the corridor given the frequency of bus uses (five per hour south of 29<sup>th</sup> Avenue and two per hour north of 29<sup>th</sup> Avenue), right-of-way impacts, transit agency preference, and increased delay for merging.
- **Enhanced Bicycle Connections** could be provided with potential bicycle facility improvements nearby, connecting to, and crossing Willamette Street. These improvements may be combined with bike lanes on Willamette Street or considered independently. The bicycle improvements proposed for consideration include treatments for nearby bike routes and crossing improvements at the 24<sup>th</sup> Avenue and 29<sup>th</sup> Place intersections.
- **Enhanced Pedestrian Crossings** could support the wider sidewalks included in each alternative by improving opportunities to cross along Willamette Street. A variety of design treatments can be implemented to enhance the pedestrian crossings, including mid-block crossings, median pedestrian crossing refuges, leading pedestrian intervals, and modified pavement surfaces. The traffic signal proposed at the Woodfield Station Driveway and the bicycle crossing

improvement proposed at 29<sup>th</sup> Place would also provide new pedestrian crossings along the largest existing gaps between signalized crossings.

- **On-Street Parking** would likely have a very favorable benefit to the pedestrian environment, however, given the constrained right-of-way and community priorities, on-street parking is not considered in any of the three design alternatives. On-street parking may be reconsidered as part of long-term enhancements to the corridor.

### Alternative Cost Estimates

Planning-level cost estimates were developed for each alternative, with the facility designs specified in this memorandum. All costs shown are planning-level estimates in 2013 dollars and are subject to change. The most significant difference between alternative costs are due to reconstruction of sidewalks. The planning-level estimated costs for utility relocation (\$2.6 Million) are not included in the estimates shown below.

#### Planning-Level Cost Estimates (Million Dollars, in 2013 Dollars)

Alternative	Pavement Project	24 <sup>th</sup> to 29 <sup>th</sup> Ave	29 <sup>th</sup> to 32 <sup>nd</sup> Ave	Total
1	\$2.1	\$1.7	\$0.3	<b>\$4.1</b>
3	\$2.1	\$1.8	\$0.3	<b>\$4.2</b>
5	\$2.1	\$2.4	\$0.3	<b>\$4.8</b>

Pavement Project – City of Eugene project is planned to include paving, ADA accessibility, and stormwater improvements from 24<sup>th</sup> to 29<sup>th</sup> Avenue  
 24<sup>th</sup> to 29<sup>th</sup> Avenue – Additional costs vary by alternative  
 29<sup>th</sup> to 32<sup>nd</sup> Avenue – Additional costs same for all alternatives  
 \*All costs are planning-level estimates subject to change



## STREETSCAPE DESIGN OPTIONS

The elements of a unified streetscape that should be considered in conjunction with the roadway facility design alternatives include sidewalk space, utilities, and stormwater treatment. The design concepts are intended to balance comfort, safety, and appeal for all users and may be incorporated into all plan alternatives to varying degrees.

- Sidewalk Widening** will provide a more comfortable pedestrian environment that is accessible to more users and offers support for the success of future businesses as the area redevelops. Wider sidewalks may provide opportunities for landscaping, vegetation, storm water/drainage elements (e.g., bioswales), café seating, overhead signing, decorative lighting, bike parking, etc. It is assumed that sidewalks will be widened to construct the maximum allowable width within the existing right-of-way in each of the alternatives. Wider sidewalks, extending beyond the existing right-of-way, may be constructed incrementally as properties redevelop.
- Utility Relocation** to underground would improve the sidewalk environment by removing some barriers to pedestrian access and increase the available sidewalk space. Utilities (poles, hydrants, pedestals, etc.) currently located along the sidewalks result in an inconsistent and obstructed pedestrian environment.
- Green Streets** are facilities that treat and manage stormwater within the right-of-way. Those facilities create an ecological

function for our streets, in addition to the traditional mobility and access functions. Examples of green street facilities include flow-through planters, basins, sidewalk silva cells, filterras, and permeable paving. The choice of techniques will be affected by the width of the sidewalk corridor in a preferred alternative and will require detailed engineering analysis and consistency with existing City of Eugene stormwater standards.

The summary matrix below shows how easily some of the typical amenities of a streetscape can be accommodated within the sidewalk corridors depicted in the alternatives.

	Alt. 1	Alt. 3	Alt. 5
<b>Bus Stop Amenities</b>			
Enhanced Bus Shelters	⊗	⊗	●
<b>Sidewalk Character</b>			
Wide Sidewalks (10' or greater)	⊗	⊗	●
Paved furnishing zone	●	●	●
Planter strip	●	●	●
Outdoor seating/retail focus	⊗	⊗	●
Textured Crosswalk	●	●	●
<b>Sidewalk Furnishings</b>			
Bike Racks	⊗	⊗	●
Benches	⊗	⊗	●
Trash receptacles	●	●	●
<b>Lighting</b>			
Pedestrian scale (18' tall or shorter)	●	●	●
<b>Landscaping</b>			
Deciduous tree canopy	⊗	⊗	●
Street corner planting	⊗	⊗	●
Landscaped tree wells	●	●	●
Stormwater facilities	⊗	⊗	●
<b>Key</b>			
Comfortably Accommodated	●		
Constrained	⊗		

Streetscape Design Amenities Matrix

### TRANSPORTATION IMPACTS

Traffic analysis comparisons of the three alternatives advanced for the South Willamette Street Improvement Plan were performed for the year 2018. Results include estimates of intersection operations, delay, vehicle queuing, travel time, neighborhood traffic shift and multi-modal system performance for bicyclists, pedestrians and transit.

Travel volume forecasts for 2018 were developed using growth identified in the regional travel demand model developed by the Lane Council of Governments (LCOG). More delay is anticipated in 2018 as a result of expected growth in motor vehicle traffic volumes. Alternatives 3 and 5 are considered to be approximately equivalent for motor vehicle operations.

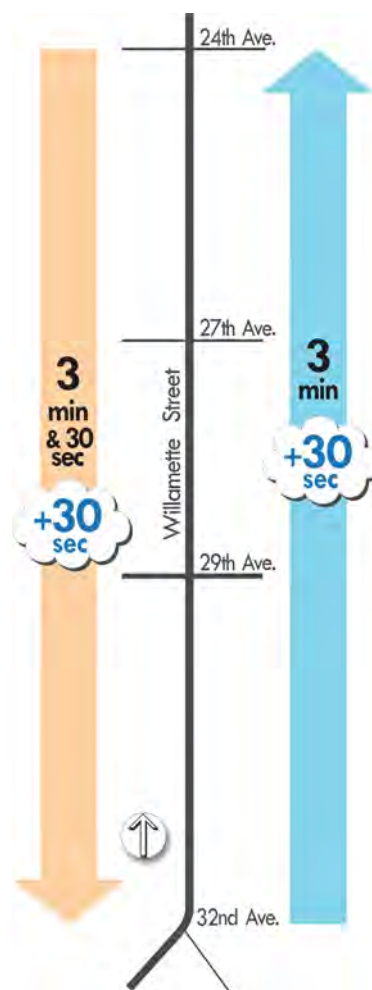
#### Transportation Impacts Summary for Alternatives 3 and 5 (as compared to Alternative 1)

- More motor vehicle delay is anticipated due to the reduction of travel lanes for motor vehicles.
- Traffic speeds will likely be reduced for through-moving vehicles, as a passing lane will be unavailable in some locations.
- Average travel times between 24<sup>th</sup> Avenue and 32<sup>nd</sup> Avenue are expected to increase by 30 seconds during the 2018 p.m. peak hour.
- Travel time reliability through the corridor may decrease.
- Intersection operations at Willamette Street and 29<sup>th</sup> Avenue may fall below the adopted minimum performance standard (LOS D) during the a.m. and p.m. peak (reaching LOS E). All other intersections operate within the performance standards for all time periods evaluated for 2018.
- Vehicle queues at the locations where motor

vehicle lanes are reduced for through travel may expect to see queues approximately double in length.

- Up to 500 vehicles per day (3% of daily traffic) may reroute to other roadways, with approximately two-thirds of the traffic shifting east to Hilyard Street and/or Amazon Parkway.
- Bicyclist and pedestrian comfort (MMLOS) would improve significantly in Alternatives 3 and 5, respectively.

Case studies in Seattle and Vancouver, WA as well as Orlando, FL demonstrated successful examples of previous corridor conversions from four vehicle lanes



**Change in Estimated Average Travel Times (2018 p.m. peak hour) for Alternatives 3 & 5**

to three. The corridors were generally similar to Willamette Street, with before/after comparisons indicating that vehicle speeds were reduced, the number of crashes was reduced, and pedestrian and bicycle access was improved. No significant problems were identified for motor vehicle traffic operations.

## CONCLUSIONS

The public involvement process has identified a variety of needs and preferences for the range of users who travel, live, work, and shop on South Willamette Street. Each proposed alternative provides relative positive and negative impacts that may be perceived differently by individuals. Within the limited right-of-way available in the developed mixed-use Willamette Street corridor, trade-offs must be carefully considered. Ultimately the alternative selected should reflect a balanced approach that best meets the transportation needs of the users of Willamette Street and best reflects the goals and objectives of the community.

In weighing all the considerations identified in this Plan, the community feedback and technical analysis, the consultant project team finds that **Alternative 3 (3-lanes with bike lanes) represents the best solution for South Willamette Street.** Alternative 3 ranked highest in the screening evaluation, based on criteria reflecting community values adapted from a sustainability process vetted by the Transportation Community Resource Group in development of the Draft Eugene Transportation System Plan. These make clear that considerations of safety, health, energy, equity, economic vitality, and access are at least as important to the Eugene community as mobility.

Alternative 3 was also the most favorably ranked configuration based on responses received at the Community Forum #3 (Refine the Alternatives),

## DRAFT TRANSPORTATION GOALS

Eugene's Draft Transportation System Plan (TSP) identifies four goals describing the desires of the community with regards to its transportation system:

- **Goal 1:** Create an integrated multimodal transportation system that is safe and efficient; supports local land use and economic development plans; reduces reliance on single occupancy automobiles; and enhances community livability.
- **Goal 2:** Advance regional sustainability by providing a transportation system that improves economic vitality, environmental health, social equity, and well-being.
- **Goal 3:** Strengthen community resilience to changes in climate, increases in fossil fuel prices, and economic fluctuations through adaptations to the transportation networks.
- **Goal 4:** Distribute the benefits and impacts of transportation decisions fairly and address the transportation needs and safety of all users, including youth, the elderly, people with disabilities, and people of all races, ethnicities and incomes.

The Draft TSP also identifies objectives that are grouped into the eight Sustainable Transportation Access Rating System (STARS) categories:

- Safety and Health
- Social Equity
- Access and Mobility for All Modes
- Community Context
- Economic Benefit
- Cost Effectiveness
- Climate and Energy
- Ecological Function

The Draft TSP goals and objectives cover a wide range of community needs and provided the foundation for evaluating the improvement alternatives identified in the South Willamette Street Improvement Plan.

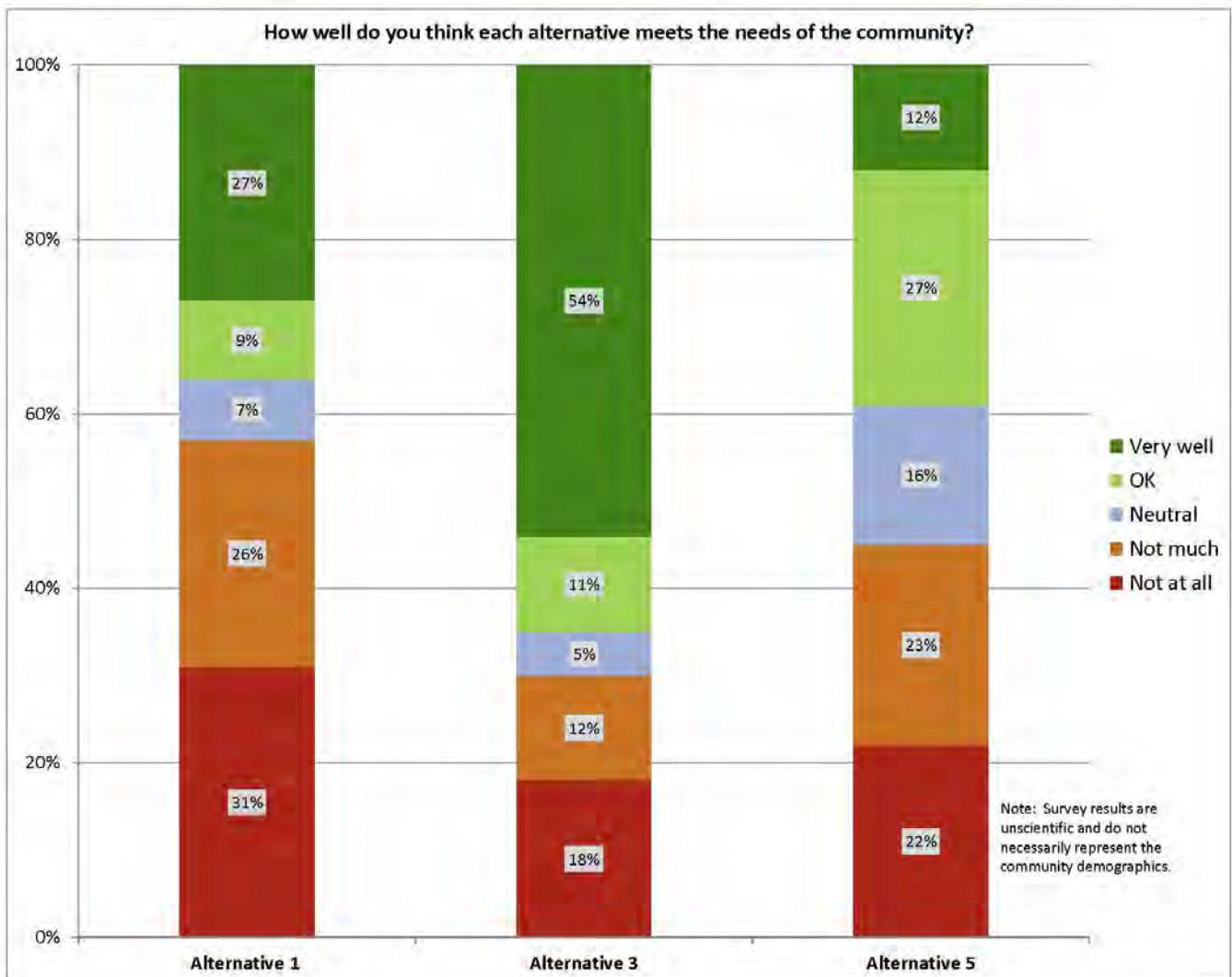


held in June 2013, and via online survey. These outreach efforts indicated a clear preference from participants and respondents for improved access and safety.

Potential motor vehicle impacts include peak hour travel time increases that most respondents considered to be acceptable. The transportation analysis findings for Alternative 3 also identify potential benefits such as reduced speeding, improved safety, and more comfortable left-turn movements. With the refinements recommended, most notably keeping two through travel lanes southbound at 29<sup>th</sup> Avenue, a considerable effort has

been made to minimize the potential negative impacts to motor vehicle mobility.

Alternative 3 enhances pedestrian and bicyclist comfort and safety, drawing people to the corridor who previously avoided it. Because the majority of Willamette Street travelers are turning at driveways or local streets, not simply passing through the corridor as quickly as possible, the potential benefits of improved safety and ease of access may also outweigh concerns about travel time. Reviews of roadway conversions in similar circumstances show the potential for implementation of Alternative 3 to result in successful outcomes across all methods of travel.



Online Public Survey Response