The Boulevard Study: From Arterial to Asset -- Examining the Role of the Multi-Way Boulevard in Coordinated Transportation and Land Use Planning

Mark L. Gillem
University of Oregon

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The BOULEVARD STUDY
From Arterial to Asset – Examining the Role of the Multiway Boulevard in Coordinated Transportation and Land Use Planning

OTREC-RR-10-10
August 2010
THE BOULEVARD STUDY
From Arterial to Asset – Examining the Role of the Multiway Boulevard in Coordinated Transportation and Land Use Planning

Final Report

OTREC-RR-10-10

by

Mark L. Gillem, PhD, AIA, AICP
University of Oregon

for

Oregon Transportation Research and Education Consortium (OTREC)
P.O. Box 751
Portland, OR 97207

August 2010
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The Boulevard Study

Retrofitting Franklin Boulevard, West 11th, and East Main Street in the Eugene/Springfield Metropolitan Area

University of Oregon
Department of Architecture and Landscape Architecture
2007-2009

Mark L. Gillem, PhD, AIA, AICP
Editor
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Executive summary

BUILDING SAFE AND SUSTAINABLE COMMUNITIES THROUGH URBAN DESIGN

As citizens of the Eugene-Springfield metropolitan area consider options for meeting the residential needs of the next generation, they need look no further than their own transportation corridors. Arterials like West 11th, Franklin Boulevard, and East Main Street can be converted into multiway boulevards that can act as magnets for new residential and commercial development in the core of town.

These boulevards can accommodate through and local traffic, public transit, pedestrians, and infill residential and mixed-use development. However, given the current configuration of these arterials, residential developers might ignore these parts of town and opt to build at the edge of town. These existing arterials are eyesores with low-density auto-oriented strip development.

Given the right public investment, private development will be attracted once again to these corridors, which can relieve pressure on the existing Urban Growth Boundary and reduce development on prime farmland or other sensitive lands.

To identify the capacity and potential of West 11th, Franklin Boulevard, and East Main Street, research-based design studios at the University of Oregon conducted an applied research project that examined the opportunities and constraints to converting auto-oriented five-and six-lane arterials into multiway boulevards with transit as a way of reducing congestion, improving pedestrian and automobile safety, and supporting more mixed-use land uses. The study is well aligned with the Oregon Transportation Research and Education Consortium’s theme of integrating land use and transportation planning as well as U.S. Department of Transportation (USDOT) strategic objectives focused on improving safety, enhancing mobility, and minimizing transportation related environmental impacts.
Through a series of public workshops, planning studies, and research efforts, this study investigated the transportation and land use potential of replacing typical suburban arterials with multiway boulevards. In this project, the research team gathered public input on desired development patterns for the corridor, studied existing land use patterns along the corridor and determined current commercial and residential densities; projected future residential and commercial densities based on current land use and zoning regulations; determined minimum right-of-way requirements for multiway boulevards that meet the projected transportation demands of the corridor, which includes through traffic, transit, and local traffic; evaluated the right-of-way impacts of replacing the current facility configuration with a multiway boulevard that accommodates projected future demand; this included parcel analysis and estimated costs associated with expanding the right-of-way; and projected future residential and commercial densities based on the land use opportunities presented with the multiway boulevard.

The benefits to retrofitting these arterials are substantial. At build-out, the 14-miles of arterials could accommodate over 28,000 new homes in a variety of configurations—from a few small single-family bungalows to multi-family townhouses, apartments, and condominiums. At 2.5 residents per household, these new homes could accommodate 70,000 new residents or roughly half (46.7%) of the metropolitan area’s projected growth by 2050. The boulevards could also support over three million square feet of ground floor commercial space in mixed-use buildings aligned along the boulevard.

The residents living along the boulevard would support a more efficient transit system and, as a result of their adjacency to transit, would drive nearly 340 million miles a year less than they would have if they lived at the edge of town. This translates into a reduction of over 373 million pounds of carbon dioxide every year.

Moreover, the families living along the boulevard would save over $3,200 every year in automobile-related expenses as a result of their reduced driving. Since they are driving less, this would translate into an annual reduction of over 900 accidents. And since these homes would be built on already developed land, this would result in a savings of nearly 2,200 acres of farmland or other natural land at the edge of town that would otherwise be used for housing.

Of course, this would come at a cost. The right-of-way acquisition, which would result in a loss of 156 existing buildings over three phases, would cost approximately $88 million. And the cost of converting the street into a multiway boulevard over three phases would be roughly $138 million. But this total cost of nearly $226 million would be offset by additional annual tax revenue of nearly $58 million a year at build out, which would equate to a remarkable short four-year payback. It is important to note that the now canceled West Eugene Parkway was estimated to cost $168 million—and that just paid for a highway through industrial areas and sensitive environmental habitat. That project would not have had any of the long-term benefits associated with converting the existing arterials into multiway boulevards. But these retrofits would accomplish the same goals for throughput as the West Eugene Parkway. In the end, retrofitting these arterials would be a much better use of limited fiscal and environmental resources.

How did the studio identify these potential savings and costs? They began by conducting precedent studies of boulevards in other cities and meeting with boulevard designers.

### FORECASTING BOULEVARD BENEFITS

<table>
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<tr>
<th></th>
<th>Franklin Boulevard</th>
<th>West 11th</th>
<th>East Main Street</th>
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<td>120,476,400</td>
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<td>702</td>
<td>830</td>
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<td>Per HH Savings ($/yr)</td>
<td>3,240</td>
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<tr>
<td>Accidents avoided per year</td>
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<td>296</td>
<td>349</td>
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<td>Tax Revenue ($/yr)</td>
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“Cities that were once considered the most-desired places to live or for businesses to locate are now seeking ways to unclog their increasingly congested roadways and regain their quality of life.”

– U.S. DEPARTMENT OF TRANSPORTATION

STRATEGIC PLAN

Once their conceptual designs were completed, they used empirical data to forecast the impacts of their proposals in terms of farmland preservation, reduction of vehicle miles traveled and carbon dioxide emissions, and per household savings.

This work was supported by generous grants from the Oregon Transportation Research and Education Consortium and the Lane County Farm Bureau. Additional support for the charrettes came from the American Institute of Architects, the City of Eugene, the City of Springfield, and the Lane Transit District. This report summarizes the findings of this multi-year study.
Background

RETROFITTING ARTERIALS IN SUPPORT OF URBAN INFILL

According to the US Department of Transportation (USDOT), by 2030, vehicle miles traveled (VMT) in the United States will increase by approximately 60 percent, which will lead to increased congestion, greater fiscal costs, and negative environmental impacts (1). Congested cities across the U.S. resort to remedies that are increasingly difficult to implement. Adding capacity is challenging given limited land availability, greater environmental constraints, and fiscal barriers. And USDOT has found that environmental concerns may limit transportation network expansions (1). Public transit has seen limited success in individual trips and can typically only be justified at greater levels of density than many communities currently support.

Existing arterials that combine local and through traffic contribute to this problem. Turning movements of local traffic along the arterial slow through traffic. They allow speeds that jeopardize pedestrian safety and negatively impact the quality of life along the arterial. These streets attract auto-oriented commercial land uses. The resulting urban form includes deeply setback strip malls, single story big-box stores, gas stations, and garages.

To combat sprawl, cities need to attract urban growth to urban cores rather than edges. Unfortunately, land within the developed core is typically dedicated to existing uses, including low-density housing and commercial development adjacent to strip arterials. Redefining these arterials offers an opportunity for infill development that can relieve growth pressures on farmland and capitalize on the benefits of greater residential densities. If arterials can safely and efficiently accommodate through and local traffic, they may also attract commercial and multi-family residential developments. One method is to convert these arterials into multiway boulevards that promote transportation variety and a broader range of land uses and building types. These boulevards, which are common throughout Europe, have dedicated through lanes separated from slow-moving local access lanes by landscaped medians. The access lanes can provide bike lanes as well as on-street parking to support ground floor retail uses. With the many opportunities for landscaping in the multiple medians, these boulevards also become attractive settings for mixed-use buildings and medium-density housing.

Hence, these arterials offer little incentive to developers or property owners interested in alternative land use types supportive of more efficient morphologies. Their negative attributes help push development to the edges of metropolitan areas, which threatens valuable farmland and contributes to the social, environmental, and economic costs of sprawl.

AN ALTERNATIVE TO SPRAWL

To combat sprawl, cities need to attract urban growth to urban cores rather than edges. Unfortunately, land within the developed core is typically dedicated to existing uses, including low-density housing and commercial development adjacent to strip arterials. Redefining these arterials offers an opportunity for infill development that can relieve growth pressures on farmland and capitalize on the benefits of greater residential densities. If arterials can safely and efficiently accommodate through and local traffic, they may also attract commercial and multi-family residential developments. One method is to convert these arterials into multiway boulevards that promote transportation variety and a broader range of land uses and building types. These boulevards, which are common throughout Europe, have dedicated through lanes separated from slow-moving local access lanes by landscaped medians. The access lanes can provide bike lanes as well as on-street parking to support ground floor retail uses. With the many opportunities for landscaping in the multiple medians, these boulevards also become attractive settings for mixed-use buildings and medium-density housing.

Like many communities across Oregon, the Eugene-Springfield metropolitan area is faced with growth, and development patterns currently employed will force that growth to the metropolitan edge. By 2050, Springfield’s population may grow from roughly 62,000 to 112,000 (2). Eugene’s population is projected to grow from roughly 150,000 to 250,000 (2). If that growth is accommodated using current development patterns, with single-use strip arterials surrounded by low-density subdivisions, the city’s Urban Growth Boundary (UGB) will need to expand substantially—unless alternative development patterns are used.

THE TRANSPORTATION LAND USE LINK

The link between transportation and land use is well established (3). Of significance to this study is the direct relationship between density, transit options, and VMT rates as described by Holtclaw (3). Holtclaw’s study of 28 communities in California evaluated the effects of neighborhood characteristics on motor vehicle usage per household and annual VMT per household. Holtclaw identified four neighborhood attributes that influence household transportation costs: residential density, transit accessibility, mixed use (as measured by distance between shopping and residential areas), and pedestrian accessibility (as measured by factors that encourage walking). His model to predict annual VMT rates is used in this study.
Most land around arterial streets today is zoned for commercial use. These zones exhibit well-documented auto-oriented characteristics, including deep setbacks, single-use buildings, ample parking lots between and in front of buildings, and little used sidewalks (10). These arterials and their land use designations work together to discourage alternative modes of transportation, more balanced development, and pedestrian accessibility. The result is increased congestion, increased VMT, and increased environmental impacts associated with this auto-focused landscape (5).

From a transportation and land use perspective, communities should support greater options for mobility, reduced reliance on automobiles, and improved pedestrian accessibility. When residents can bike from their home to their place of work, when they can take public transit instead of their private automobile, and when they can walk to a local market, their mobility options are increased, and their vehicle miles are decreased (6). Reduced vehicle use has benefits in terms of improved air quality and improved personal health (7).

**MULTIMODAL TRANSPORTATION FACILITIES**

Franklin Boulevard, West 11th, and East Main Street are emerging multimodal facilities. They currently support vehicles and a bus system. But transit alone will not transform an arterial into a multimodal facility. As Mejia and Deaklin note “… transit is only one of many influences on development and a transit-served site must compete with other sites in the region that may be more desirable in other respects” (9). Multimodal facilities should also safely incorporate bicycles and pedestrians. Even though the arterials have sidewalks in many locations, these are infrequently used. Sidewalks are especially problematic given that they are attached directly to the curb and unusually narrow for an arterial (4 to 6 feet, or 1.22 to 1.83 meters wide). Tobs effective for bicycles and pedestrians, research has found that one of the most critical factors is lateral separation of the mode and vehicle speed and volume (10). Multimodal boulevards are an effective way to achieve this lateral separation (8).

**URBAN ARTERIALS**

Urban arterials offer great settings for infill development if reformed into multiway boulevards, though they present challenges to overcome. In a survey of developers working in the San Francisco Bay Area, Mejias and Deaklin concluded that for their case study arterial (San Pablo Avenue), the two-way boulevards were an effective way to achieve this lateral separation (9). The arterial is like many urban arterials—it is a multilane roadway that accommodates through and local traffic and it is paralleled by auto-oriented strip development that links several jurisdictions. Freedman (11) offers a description of urban arterials that also applies to Oregon’s strip arterials:

"On the strip, auto-dependent development has long been paired with a conventional arterial typology—strip buildings are set back behind expansive parking lots, with only a minimal need for architectural quality. In such environments, pedestrian movement is normally only poorly accommodated. Crosswalk distances are long and without refuge. Trees canopies are sparse or nonexistent; sidewalks are narrow (where they exist at all), and intermittent, bare-bones strip luminaries convey the impression that no one would walk, bicycle, or sit at a transit stop there unless they had no other choice."

**MULTIWAY BOULEVARDS**

Perhaps the best way to address the limitations of the urban arterial and to transform it in a way that is supportive of multimodal transportation options is to convert it into a multiway boulevard (11). These boulevards, which are common across Europe, have several lanes of faster moving through traffic in the middle separated by medians from parking and access lanes on the sides (see Figure 1).

Multiway boulevards have been shown to support infill development, reduce congestion, and improve pedestrian safety (12, 13, 14). Ground level retail uses take advantage of on-street parking in the access lanes, and residential uses are attracted to the park-like quality of the landscaped boulevards. Given that slower vehicular speeds can reduce pedestrian fatalities (15), slower moving local access lanes also enhance pedestrian safety without reducing throughput. The ability to support greater residential densities can contribute to greater housing affordability (16). But given the wide right-of-way requirement, this street type is uncommon in the United States. Jacobs (14) has shown that these streets accommodate all necessary turning movements and are no less safe than standard arterials. Typically, signals control through traffic movements, including left turns. Signage regulates movements on the access lanes, which requires local traffic to yield.

**FINDINGS**

Over the course of the Franklin Boulevard portion of this study, which covered Eugene and Glenwood, many participants—including business owners, neighborhood activists, and planning commissioners—have gone from knowing nothing about multiway Boulevards to being supporters because the boulevard type has benefits that outweigh the liabilities. We would expect similar findings for East Main Street and West 11th. Neighborhood leaders in Eugene supported the idea of density along the arterial rather than in the neighborhoods. Their primary concern was the perceived increase to the pedestrian crossing distance. However, since the crossing distance in a multiway boulevard need not include the access lanes, which are typically designed as a pedestrian realm, the distance actually decreases across the through lanes. Property owners approved of the concept because it could accommodate through traffic, which is important for business visibility, and local traffic, which allows for easy customer access. Their most pressing concern was the expansion of the right-of-way. They were not overly concerned about limiting free right-turn access to existing curb cuts, which would happen with the median separating the access lanes from the through lanes. Entry into the access lanes only occurs at intersections.

**RIGHT OF WAY**

The existing right-of-ways cannot accommodate a typical multiway boulevard with two access lanes, two through lanes, and two dedicated Bus Rapid Transit Lanes. A wider right-of-way would be needed, which
could be accommodated with minimal impact to any existing buildings. It is important to note that this extra width is, in part, due to the need to accommodate dedicated lanes for BRT. So expansion would be required anyway to support a BRT. In addition, the multiway boulevard can be adapted to various site conditions and may only have access lanes on one side. This adaptability makes the boulevard suitable for a range of urban conditions in the metropolitan area. The additional width would primarily come from parking lots and unused land on adjacent properties. The benefit to property owners is that they would get on-street parking in front of their properties that would be paid for and owned by the city.

LEVEL OF SERVICE AND VOLUME

As part of the Walnut Station study sponsored by the Oregon Transportation and Growth Management Program, David Evans and Associates performed traffic modeling, which found that converting the arterial into a multiway boulevard would have a minimal impact on LOS (18). Along the half-mile (0.8 km) stretch covered by this analysis, the boulevard performs at a LOS C/D with volume to capacity (v/c) ratios of 59 to 70. Traffic volume is expected to increase by 101% (north side PM peak) and 35% (south side PM peak) by 2025. With a multiway boulevard, the LOS is projected to remain at C/D, which is better than the city standard of LOS E, and v/c ratios are projected to be between .79 to .92. The modeling also found that intersection capacity is minimally impacted. We would expect similar findings for West 11th and East Main Street.

URBAN FORM AND RESIDENTIAL CAPACITY

The entire corridor could support over 28,000 dwelling units at densities not exceeding 30 dwelling units per acre and in buildings not exceeding five stories in height. At this level of density, off-street parking could be at-grade in parking areas located behind buildings, which is an important economic consideration given the prohibitive cost of structured parking. Moreover, the five-story maximum height would be the most acceptable to many of the stakeholders and allows for ground floor retail and up to four levels of housing above, which could be developed as stacked townhomes, condominiums, and apartment flats. Over three million square feet of new commercial space could be accommodated in ground floors of mixed-use buildings aligned along the boulevards. Depending on market demands, the ground floors could also support urban housing. This type of adaptability could be a magnet for new development. To be sure, some of these benefits may be achievable without a multiway boulevard, but this street type may best meet the complex needs of arterials designed to integrate transportation and land use.

REFERENCES

2. Data from Lane Council of Governments.
Octavia Boulevard

A PRECEDENT STUDY FROM SAN FRANCISCO

Octavia Boulevard is a section of Octavia Street, a north-south arterial that connects Route 101 with the Hayes Valley neighborhood and terminates in a neighborhood park.

Today the Hayes Valley neighborhood is rich in historic architecture and local businesses.

Historically, the area has been the scene of violent crime and drug activity. Since the restructuring of the boulevard, including Patricia’s Green park, new life has been injected into the neighborhood. This is evident at the street front where local businesses flourish and at the park, where an average day finds a healthy mix of children, adults, and dogs enjoying the sunshine.

Octavia employs a multi-way boulevard strategy to deal with a heavy traffic volume coming from the Route 101 exit. North and south-bound traffic are separated by a vegetated boulevard and each side is given two lanes. Access lanes line each side of the street, allowing for on-street parking and access to housing and businesses. The access lanes are separated from the high volume lanes by yet another vegetated median. Wide, tree-lined sidewalks are found adjacent to access lanes.

The access lanes function well for vehicles as well as for bicyclists, who are able to travel on the street without being subjected to quick-moving, high-volume car traffic. The access lane also provides a more pleasant walking experience for the pedestrian.

Rather than being uncomfortably close to traffic, the walker is a safe distance away, separated by two rows of trees, parked cars in the access lane, and a boulevard. The 15’ sidewalk adds to this walkability.

The cohesive tree and shrub planting not only buffers pedestrians from traffic but also acts as a sound buffer, helping to filter out the noise of some 50,000 autos per day. Additionally, the tree plan creates visual unity on the street from freeway to park block.

A possible critique of the system used here is that some cars use the access lane as a cut-through to avoid traffic. Had access lanes been made narrower and employed a traffic calming device at intersections, this likely would not be the case.

At the north end of the street, the high-volume lanes terminate, allowing only the access lanes to continue. At this point the street ceases to be a thoroughfare and becomes instead a quiet neighborhood street lined by businesses and housing. The park is the centerpiece of these blocks. Sidewalks remain wide here, allowing excellent opportunities for outdoor dining and shopping.
Mt. Diablo Boulevard
A PRECEDENT STUDY FROM LAFAYETTE, CALIFORNIA

Mt. Diablo Boulevard runs through downtown Lafayette, parallel to nearby Route 24, a major arterial connecting the area to San Francisco.

Unlike a typical thoroughfare, Mt. Diablo Boulevard is also a vibrant public space; shopping, banking, outdoor dining, and strolling all occur here.

Sidewalks along the boulevard are wide, accommodating a variety of uses. Many restaurants and cafes use moveable seating to allow outdoor dining in good weather. The wide walk allows ample room for diners as well as strolling couples and families.

However, the most unique and innovative feature of Mt. Diablo Boulevard is not found on its streetfront, but rather in the parking solution behind the boulevard. Instead of relying heavily upon on-street parking, large, shady lots have been built behind shops. These lots gather pedestrians at paseos, which connect to the streetfront. The paseos are wide, and include shop entries, trees, and arched entryways. These paseos provide a pleasant transition between parking and pedestrian uses.

Several sections of the boulevard feature not only behind-street parking with paseos, but also wide, tree-lined sidewalks and shop entries in the rear. This creates choices for the user, whether they arrive on foot or in a vehicle. The enhanced rear of street adds to the appeal of the boulevard as a whole.

In some instances, low volume parking lots are also located directly off of the main boulevard. These lots, small and lined with abundant trees, are tucked inobtrusively between buildings.

In contrast with rear parking and small, tucked-in lots, the western end of the boulevard reverts to its earlier roots as a typical American strip-mall with large amounts of parking in front of stores. This model limits the amount of activity that can take place at the storefront level.

A vibrant mix of local and national businesses inhabit the eastern end of the street. Restaurants, small retailers, banks, and a grocery store provide a healthy mix of goods and services.

Architecture is varied, adding to the character of the street. Mixed building heights, colors, and the use of awnings add visual interest. Business entries are angled back, allowing extra room for coming and going. A clocktower on the corner of Mt. Diablo Boulevard and Moraga Road rises above the neighboring buildings and serves as a community icon.
Shattuck Avenue

A PRECEDENT STUDY FROM BERKELEY, CALIFORNIA

Berkeley is located on the east shore of San Francisco Bay. Berkeley’s Shattuck Ave. has been called the “the heart of trendy Berkeley.” With dining and shopping lining this corridor and its close proximity to UC Berkeley, it is easy to understand why this is such a busy area of the city.

A mediterranean climate, architecture rich with character, vegetated medians and room to walk are elements that add to the uniqueness of Shattuck Ave.

The street accommodates a range of transportation, from vehicle to walking and biking. Pedestrians are safely separated from busy traffic by the service lane. Trees and vegetation fill all medians, softening the hardcape and surrounding building. Crosswalks at each intersection give pedestrians a safe place to walk and are a reasonable walking distance from each other. Mixed-use buildings line Shattuck, from juice bars and full restaurants to pharmacies and residential complexes.

Service lane traffic is forced to merge onto the main traffic lane, interrupting the flow. With no designated bike lane, bikes are forced to move in and out of the service lane.

Opportunity for seating outside of shops is not utilized, creating unused space. The width of the crosswalk from one side of the street to the other is long and may be a safety issue for some pedestrians.
The Esplanade

A PRECEDENT STUDY FROM CHICO, CALIFORNIA

25,000 ADT

Center Roadway
■ 2 lanes each direction plus left turn lanes in center median every second block
■ Signals at every second intersection

Access Roadway
■ 1 lane plus parallel parking
■ Two-way traffic in some access lanes
■ Through traffic is allowed
■ Controlled with Stop signs not signals

Dimensions
Right of Way 165 ft
Center Roadway total 64 ft
Through lanes 27 ft
Center median 10 ft
Access roadway 20 ft
Sidewalk Width varies from 5ft –12ft
Typical block length 400 ft

Side median
■ 28 ft on east side
■ 10 ft on west side
■ trees are spaced 30-35 ft apart

Strengths
■ Tree-lined access roads are dark and cool on hot sunny summer days
■ Shrubs along median strips partially hide fast moving car in the central lanes along with discouraging jaywalking
■ Stop sign at every intersection so you cannot build up speed for very long

Weaknesses
■ There are no crosswalk markings so a specific pedestrian zone is not established
■ Longer blocks encourage speed along access roadways

Lessons for Franklin
■ Crosswalk markings establish crossing
Franklin Boulevard
FROM ARTERIAL TO ASSET

The Franklin Boulevard studio was held at the University of Oregon during Winter quarter, 2007. The studio was designed to educate students on the transportation and land-use connection while also providing a much needed study for the community.

The students were both architecture and landscape architecture majors and a mix of graduate and undergraduate students. The studio was held as part of the American Institute of Architects’ 150-year anniversary celebration. A major part of the studio was a public workshop that focused on forming concepts for the redesign. Students, local design professionals, and community members participated in the workshop.

Franklin Boulevard was studied for several reasons. Because it is a major route between Eugene and Springfield, as well as having close proximity to the University of Oregon Campus, the boulevard consistently sees heavy vehicular traffic. The Emerald Express (EmX), a bus rapid transit line, was added to the corridor 2007, enhancing the potential for new development. Despite its proximity to the university, which is mostly a pedestrian zone, Franklin Boulevard does not include adequate pedestrian amenities.

The corridor also runs parallel to the Willamette River and a heavily used pedestrian path. Throughout the term, attention was paid to how a new design for Franklin Boulevard might take advantage of nearby natural resources.

A key objective of this urban design studio was to teach students how to develop transportation, land use, open space, and building typology proposals for the redevelopment of the Franklin corridor from Springfield to Eugene.

The studio was conducted in four main steps:

1. Students conducted precedent studies of other successful boulevards and urban spaces. For this effort, the students traveled to California to research successful multiway boulevards in other cities.

2. Students studied existing development proposals for the area and conducted site analyses.

3. Students helped facilitate two public charrettes to gather community members and professionals’ ideas about how the new street could look and function.

4. Students worked in small teams to develop proposals based on this research and on the charrette ideas.

Students were required to develop plans, sections, perspectives, and physical models of their proposals. Students also developed a “form-based code” for the corridor that included illustrative and regulating plans, street sections, open space designs, and building envelope standards. Some of these products are shown on the following pages.
The AIA 150 Workshop

In February 2007, the studio joined with members of the profession, academia, and community to present conceptual ideas for a new boulevard through downtown Eugene. The goal of the process was to create a comprehensive strategy for economic development and revitalization of the corridor. The next day, more than 100 citizens worked in teams of five to produce conceptual ideas for the corridor. The teams then presented their ideas at a public presentation, held on February 12, at the University of Oregon's Whiteaker Center.

Social and Ecological Value

The team also wanted a multi-way boulevard to attract more mixed use and pedestrian-friendly development, while also accommodating the traffic. They described the corridor as a public park-like area with a variety of uses, including retail, residential, and commercial. The boulevard would be a central feature, connecting the city's main transportation nodes, providing a direct line to the Willamette River. The project would also include bike and pedestrian paths, as well as green spaces and public art installations.

The schedule for the workshop included a full day of presentations, followed by a series of breakout sessions, where participants were divided into smaller groups to work on specific areas of the corridor. The groups were asked to develop ideas for pedestrian-friendly development, mixed-use buildings, and uninterrupted bike paths.

The final day of the workshop concluded with a public presentation, where the teams presented their ideas to the community. The presentation included a variety of proposals for the 3.5-mile corridor, from plans for opening the millrace to development of green sections, open space, and pedestrian pathways.

The participants were encouraged to bring their ideas forward and to consider the community's needs and desires. The workshop was a success, with participants from across the community coming together to create a vision for the future of the corridor.

The AIA 150 Workshop participants agreed that the corridor is a social and ecological asset. They also wanted a multi-way boulevard to attract more mixed use and pedestrian-friendly development, while also accommodating the traffic. They described the corridor as a public park-like area with a variety of uses, including retail, residential, and commercial. The boulevard would be a central feature, connecting the city's main transportation nodes, providing a direct line to the Willamette River. The project would also include bike and pedestrian paths, as well as green spaces and public art installations.
Transportation systems

A GREAT BOULEVARD FOR A GREAT CITY

A TRANSPORTATION PLAN FOR THE FRANKLIN CORRIDOR FROM THE AIA 150 CHARRETTE

REPLACING THE DOWNTOWN EUGENE OVERPASS WITH A RECESSED BOULEVARD TO OPEN LAND FOR DEVELOPMENT
Green Fingers
CONNECTING COMMUNITIES TO THE RIVER
Boulevard design

THREE CONFIGURATIONS FOR MULTIWAY BOULEVARD

Option 1: 152' - 6" Right of way allows for two BRT lanes, two side-access lanes, and four through lanes

Option 2: 130'-6" right of way allows for two BRT lanes, one side-access lane and four through lanes

Option 3: 140'-6" right of way allows for one BRT lane, two side-access lanes and four through lanes

Option 1: 152' - 6" Right of way allows for two BRT lanes, two side-access lanes, and four through lanes
Transforming Franklin

ACCOMMODATING TRAFFIC, PEOPLE AND BUSINESS

EXISTING CONDITION: AN EYESORE

STEP 1: PUBLIC INVESTMENT IN THE PUBLIC REALM

STEP 2: LANDSCAPING MATURES

STEP 3: PRIVATE INVESTMENT IS ATTRACTED TO THE PUBLIC BOULEVARD

IMAGES FROM URBAN ADVANTAGE AND THE OREGON DEPARTMENT OF TRANSPORTATION
Eugene's Riverfront

ILLUSTRATIVE PLAN

REGULATING PLAN
West 11th Avenue

MAKING ROOM FOR GROWTH

The West 11th and East Main Street studio was held at the University of Oregon during Fall term 2008. The main objectives of the studio were to educate students in the preparation of planning and urban design proposals for infill development along edge arterials in Eugene and Springfield.

Unsafe and inefficient arterials dominate the inner urban landscape. They are surrounded by low-density, auto-oriented development. In part to avoid these corridors, new development moves to the outer urban landscape and contributes to sprawl. But what if these corridors could be transformed from eyesores that repel development to magnets that attract development? This question was addressed throughout the term. In addition, students learned about and followed a planning process that incorporated precedent studies, site and suitability analyses, design objective development, corridor planning.

Working in small teams, students developed proposals for the redevelopment of an urban corridor, either West 11th Avenue in Eugene or East Main Street in Springfield. They studied an alternative arterial type defined as a multilane boulevard that is known to attract urban infill. They analyzed their selected case study corridor and its associated land-use, environmental, social, and economic patterns in either Eugene or Springfield. (A selected sample of the analysis diagrams are shown on pages 48-53 and pages 66-73.) Students then designed a boulevard for their corridor and prepared planning proposals and urban designs for redevelopment. Students forecasted the impacts of their proposals in terms of farmland preservation, reduction of vehicle miles traveled and carbon dioxide emissions, and per household savings.

The class was divided into six groups. Three groups worked on the Eugene corridor and three on the Springfield corridor. Each corridor was further divided into an east, center, and west section. Team size was between 3 and 5 members.

The class also conducted field research of boulevards and corridor developments in California. In addition, students were required to attend a two-day photo-simulation workshop where they learned how to graphically portray positive changes to urban corridors. A generous grant from the Lane County Farm Bureau funded travel costs and participation in the simulation workshop.
Design: Boulevard Configurations

Multiway Boulevard with two access lanes returning to the through lanes. Total right-of-way required is 140 feet minimum. Access lanes can continue through the intersection where there are no bus stops.

Multiway Boulevard with one access lane continuing through the intersection. Total right-of-way required is 118 feet minimum.
Analysis: West Section
GREEN HILL ROAD TO DANEBO AVENUE

LAND USE

OPEN SPACE

BUILDING CLASSIFICATION

STREET CLASSIFICATION
Analysis: Center Section

DANEBO AVENUE TO BAILEY HILL ROAD

BUILDING CLASSIFICATION

LAND USE
## Design: West Section

**GREEN HILL ROAD TO DANEBO AVENUE**

### AN ENVIRONMENTAL AND ECONOMIC FORECAST
**WEST 11TH STREET, EUGENE, OREGON: WEST SECTION**

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**PHASE 1**

**PHASE 2**

**PHASE 3**
Design: West Section

GREEN HILL ROAD TO DANEBO AVENUE

PHASE 1

PHASE 2

PHASE 3
Design: Center Section

DANEBO AVENUE TO BAILEY HILL ROAD

AN ENVIRONMENTAL AND ECONOMIC FORECAST
WEST 11TH STREET, EUGENE, OREGON: CENTRAL SECTION

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Phase 1

Phase 2

Phase 3
Design: Center Section

DANEBO AVENUE TO BAILEY HILL ROAD

PHASE 1

PHASE 2

PHASE 3
Design: East Section

BAILEY HILL ROAD TO GARFIELD STREET

EXISTING CONDITION

AN ENVIRONMENTAL AND ECONOMIC FORECAST
WEST 11TH STREET, EUGENE, OREGON: EAST SECTION

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<td>3,240</td>
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<td>80</td>
<td>93</td>
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<td>11,975,040</td>
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<td>1.20</td>
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<td>17</td>
<td>7</td>
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</table>
Design: East Section

BAILEY HILL ROAD TO GARFIELD STREET
East Main Street

MAKING ROOM FOR GROWTH IN SPRINGFIELD

The Springfield section of the study covered East Main Street from 19th Street to 79th Street. East Main Street is in dire need of upgrades. Above all, it is one of the most dangerous streets in Oregon.

Traffic generally travels 8 mph over the limit in 40-45 mile speed zones. More than 25,000 cars per day use some stretches of East Main Street. Pedestrians are in danger along the wide open 5 and 6 lane arterial. In fact, with one to four pedestrian fatalities every year, Springfield has a pedestrian death rate similar to Eugene and the latter has nearly three times the population. One Springfield police officer has said, “Main Street is our killer’s street.” Since Springfield is actively looking for residential land to accommodate its projected future growth, East Main Street can be an attractive and affordable alternative to expanding the Urban Growth Boundary. Since an upgrade to the street will also increase property values for adjacent businesses, it may be well received. From a pedestrian standpoint, the multiway boulevard configuration is significantly safer than the current model. In the following examples, student teams studied various right-of-way configurations and found that retrofitting the arterial is a realistic alternative.

AN ENVIRONMENTAL AND ECONOMIC FORECAST
EAST MAIN STREET, SPRINGFIELD, OREGON

<table>
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<td>3,240</td>
<td>3,240</td>
<td>3,240</td>
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<td>3</td>
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Analysis: West Section
19TH STREET TO 42ND STREET

BUILDING CLASSIFICATION

ZONING

Residential
Commercial
Low
Medium
Community Neighborhood
General Office
Religious
Open Space

Land Value/ Improvement Value > 2
Land Value/ Improvement Value < 2
Land Value/ Improvement Value < 2
Analysis: Center Section

42ND STREET TO 58TH STREET

BUILDING CLASSIFICATION

<table>
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<th>Land Value/ Improvement Value</th>
<th>Land Value/ Improvement Value</th>
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<td>&gt; 2</td>
<td>&lt; 2</td>
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ZONING

Residential

Commercial

LOW    MEDIUM   COMMERCIAL   NEIGHBORHOOD   GENERAL OFFICE   RELIGIOUS   OPEN SPACE
Analysis: East Section

58TH STREET TO 79TH STREET
## Design: West Section

19TH STREET TO 42ND STREET

**AN ENVIRONMENTAL AND ECONOMIC FORECAST**
EAST MAIN STREET, SPRINGFIELD, OREGON: WEST SECTION

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<td>Accidents avoided per year</td>
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Design: West Section
19TH STREET TO 42ND STREET
Design: West Section
19TH STREET TO 42ND STREET

PHASE 1

PHASE 2

PHASE 3
### Design: Center Section

#### 42ND STREET TO 58TH STREET

#### PHASE 1

**AN ENVIRONMENTAL AND ECONOMIC FORECAST**

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<td>7,020</td>
</tr>
<tr>
<td>VMT Reduction (miles/yr)</td>
<td>12,000,000</td>
<td>72,240,000</td>
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<td>84,240,000</td>
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<tr>
<td>CO2 Reduction (lbs CO2/yr)</td>
<td>13,200,000</td>
<td>79,464,000</td>
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<td>92,664,000</td>
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<tr>
<td>Farmland Preservation (acres)</td>
<td>77</td>
<td>46.3</td>
<td>NA</td>
<td>540</td>
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<tr>
<td>Per HH Savings (B$/y)</td>
<td>3,240</td>
<td>3,240</td>
<td>NA</td>
<td>3,240</td>
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<tr>
<td>Accidents avoided per year</td>
<td>32</td>
<td>195</td>
<td>NA</td>
<td>227</td>
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<td>Tax Revenue (B$/yr)</td>
<td>2,000,000</td>
<td>12,040,000</td>
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<tr>
<td>ROW Cost ($)</td>
<td>627,345</td>
<td>9,497,655</td>
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<tr>
<td>Bldg Cost ($)</td>
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<td>15,000,000</td>
<td>NA</td>
<td>18,000,000</td>
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<td>Total Cost ($)</td>
<td>3,627,345</td>
<td>24,497,655</td>
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<td>28,125,000</td>
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<tr>
<td>Bldg Length (miles)</td>
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<tr>
<td>Bldgs Removed</td>
<td>0</td>
<td>13</td>
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#### PHASE 2

#### PHASE 3
Design: Center Section

42ND STREET TO 58TH STREET

PHASE 1

PHASE 2
Design: East Section

58TH STREET TO 79TH STREET

AN ENVIRONMENTAL AND ECONOMIC FORECAST
EAST MAIN STREET, SPRINGFIELD, OREGON: EAST SECTION

<table>
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<th>PHASE 1</th>
<th>PHASE 2</th>
<th>PHASE 3</th>
<th>TOTAL</th>
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<td>Dwelling Units</td>
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<td>VMT Reduction (miles/yr)</td>
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<td>CO2 Reduction (lbs CO2/yr)</td>
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<td>Farmland Preservation (acres)</td>
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<td>Per HH Savings ($/yr)</td>
<td>3,240</td>
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<td>3,240</td>
<td>3,240</td>
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<tr>
<td>Accidents avoided per year</td>
<td>22</td>
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<td>32</td>
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<td>Tax Revenue ($/yr)</td>
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<td>Blvd Cost ($)</td>
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<td>22,000,000</td>
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<td>Bridges Removed</td>
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PHASE 1

PHASE 2
Design: East Section
58TH STREET TO 79TH STREET

PHASE 1

PHASE 2

PHASE 3
Acknowledgements

Franklin Blvd Urban Design Studio
Winter 2007, University of Oregon
Instructor: Mark L. Gillem, PhD, AIA, AICP, Assistant Professor
Graduate Students: Ryan Cesca, Eric Knobelspiese

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OTREC is dedicated to stimulating and conducting collaborative multi-disciplinary research on multi-modal surface transportation issues, educating a diverse array of current practitioners and future leaders in the transportation field, and encouraging implementation of relevant research results.