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

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Mark L. Gillem, PhD, AIA, AICP
Editor

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For more information, contact Mark Gillem, PhD, AIA, AICP
Assistant Professor, Department of Architecture and Landscape Architecture
University of Oregon
mark@uoregon.edu

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 rightly 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 unified 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 studios, 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

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.

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 lot single-family bungalows to multi-family rowhouses, 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 remarkably 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 studios identify these potential savings and costs? They began by conducting precedent studies of boulevards in other cities and meeting with boulevard designers. They studied similar streets in California: Octavia Boulevard in San Francisco, Shattuck Avenue in Berkeley, The Esplanade in Chico, and International Boulevard in Oakland. They then analyzed in detail Franklin Boulevard, West11th, and East Main Street and each street's associated land-use, environmental, zoning, social, and economic patterns. For Franklin Boulevard, they participated in several public design charrettes held in conjunction with the local chapter of the American Institute of Architects. Students then developed design principles for the corridor, designed flexible boulevard configurations, and prepared planning proposals and urban designs for phased redevelopment of the streets.

FORECASTING BOULEVARD BENEFITS

	Franklin Boulevard	West 11th	East Main Street	Total
Dwelling Units	8,400	9,127	10,785	28,312
VMT Reduction (miles/yr)	100,800,000	109,524,000	129,420,000	339,744,000
CO2 Reduction (lbs CO2/yr)	110,880,000	120,476,400	142,362,000	373,718,400
Farmland Preservation (acres)	646	702	830	2,178
Per HH Savings ($/yr)	3,240	3,240	3,240	3,240
Accidents avoided per year	272	296	349	917
Tax Revenue ($/yr)	16 ,800,000	18,254,000	22,924,000	57,978,000
ROW Cost ($)	9,504,000	47,515,934	30,642,840	87,662,774
Blvd Cost ($)	30,000,000	51,100,000	57,000,000	138,100,000
Total Cost ($)	39,504,000	98,615,934	87,642,840	225,762,774
Blvd Length (miles)	3.00	5	6	14
Bldgs Removed	37	90	29	156

"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.

LINKING THE REGION
This project considered West 11th Avenue, Franklin Boulevard and East Main Street as three pieces of one great boulevard linking two cities. For the purposes of this study, West 11th Avenue and East Main Street were further subdivided into three areas as shown above (West, Center, East).

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 replacing 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.

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.

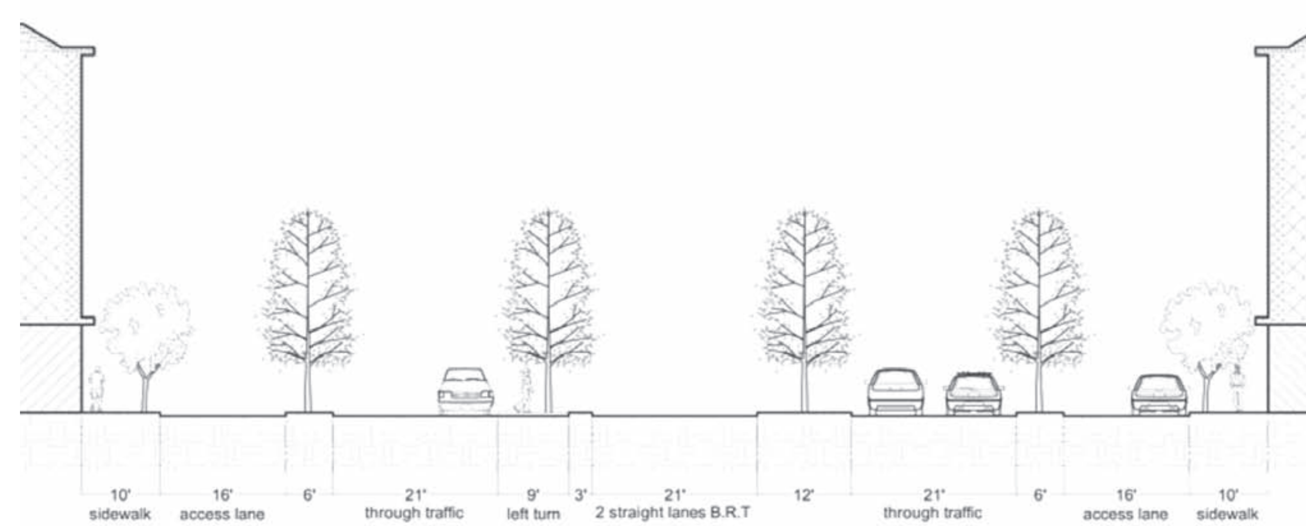

Figure 1: A typical multiway boulevard in 151′ right-of way.

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 start to 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 Holtzclaw (3). Holtzclaw's study of 28 communities in California evaluated the effects of neighborhood characteristics on motor vehicle usage per household and annual VMT per household. Holtzclaw 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 (4). 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 Mejias and Deakin 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). To be 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). Multiway 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 Deakin concluded that for their case study arterial (San Pablo Avenue) the unattractive streetscapes, high speeds (35 to 45 miles or 56 to 72 kilometers per hour), and large setback requirements limited development potential. Developers noted that this auto-oriented building pattern limited infill and mixed-use development (9). San Pablo Avenue 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; tree canopies are sparse or nonexistent; sidewalks are narrow (where they exist at all); and intermittent, bare-bones street furnishings 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.

Great streets can support substantial through traffic as well as mixed-use residential buildings.

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 through 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

FORECASTING ENVIRONMENTAL AND ECONOMIC BENEFITS

While economists routinely make forecasts based on a set of assumptions, planners responsible for the configuration of the built environment rarely take advantage of this approach to estimating the costs and benefits of development alternatives. As part of this project, preliminary environmental forecasting helped identify possible impacts of converting the arterial into a multiway boulevard. While these forecasts may not reflect actual events in the future, they do help policy-makers evaluate the possible impacts of development decisions. These forecasts start with the position that, as currently configured, these streets will not attract residential development. Traffic speeds, land use patterns, building forms, and landscaping are simply not conducive to mixed-use development. However, if converted to a multiway boulevard, these streets would likely attract mixed-use development. This has been the case with Octavia Boulevard in San Francisco and it is the pattern for multiway boulevards in Europe that carry similar levels of through traffic.

CONCLUSION

Oregon has a long history of innovations in land use and transportation but that history has largely bypassed the urban arterial. As an alternative to these arterials, multiway boulevards can be one of many strategies that can help communities struggling with congestion, environmental degradation, and livability. Environmental forecasts presented here make a compelling case for considering multiway boulevards. An improved arterial that separates through and local traffic, allows for on-street parking, supports transit, and enhances the bicycle and pedestrian experience 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

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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.

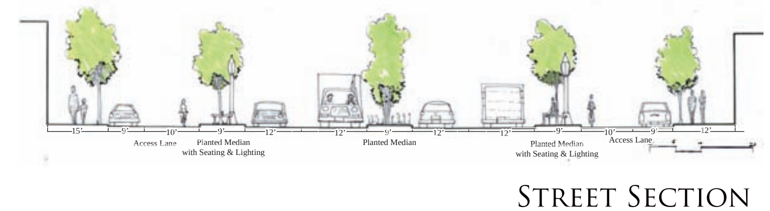
The access lanes function well for vehicles as well as for bicyclists, who are able to travel on the street without being subjected to quick-moving, high-volume car traffic. The access lane also provides a more pleasant walking experience for the pedestrian.

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-though 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.



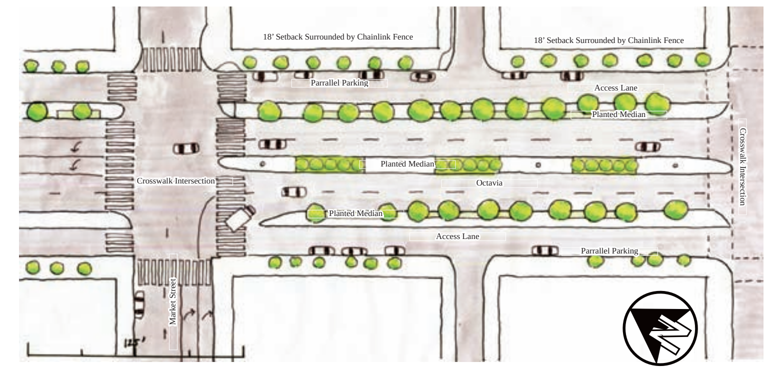



Photo: Liz Weigand

Mt. Diablo Boulevard

A PRECEDENT STUDY FROM LAFAYATTE, 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.

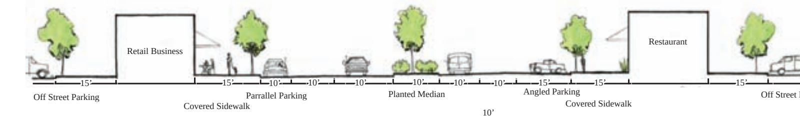
In some instances, low volume parking lots are also located directly off of the main boulevard. These lots, small and lined with abundant trees, are tucked inobtrusively between buildings.

In contrast with rear parking and small, tucked-in lots, the western end of the boulevard reverts to it's 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.



STREET SECTION

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.

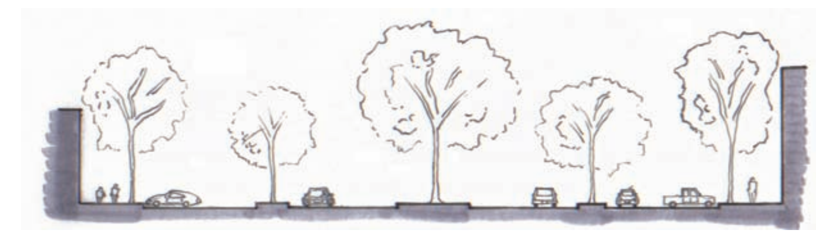
A mediterranean climate, architecture rich with character, vegetated medians and room to walk are elements that add to the uniqueness of Shattuck Ave.

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 hardscape and surrounding buildings. 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.

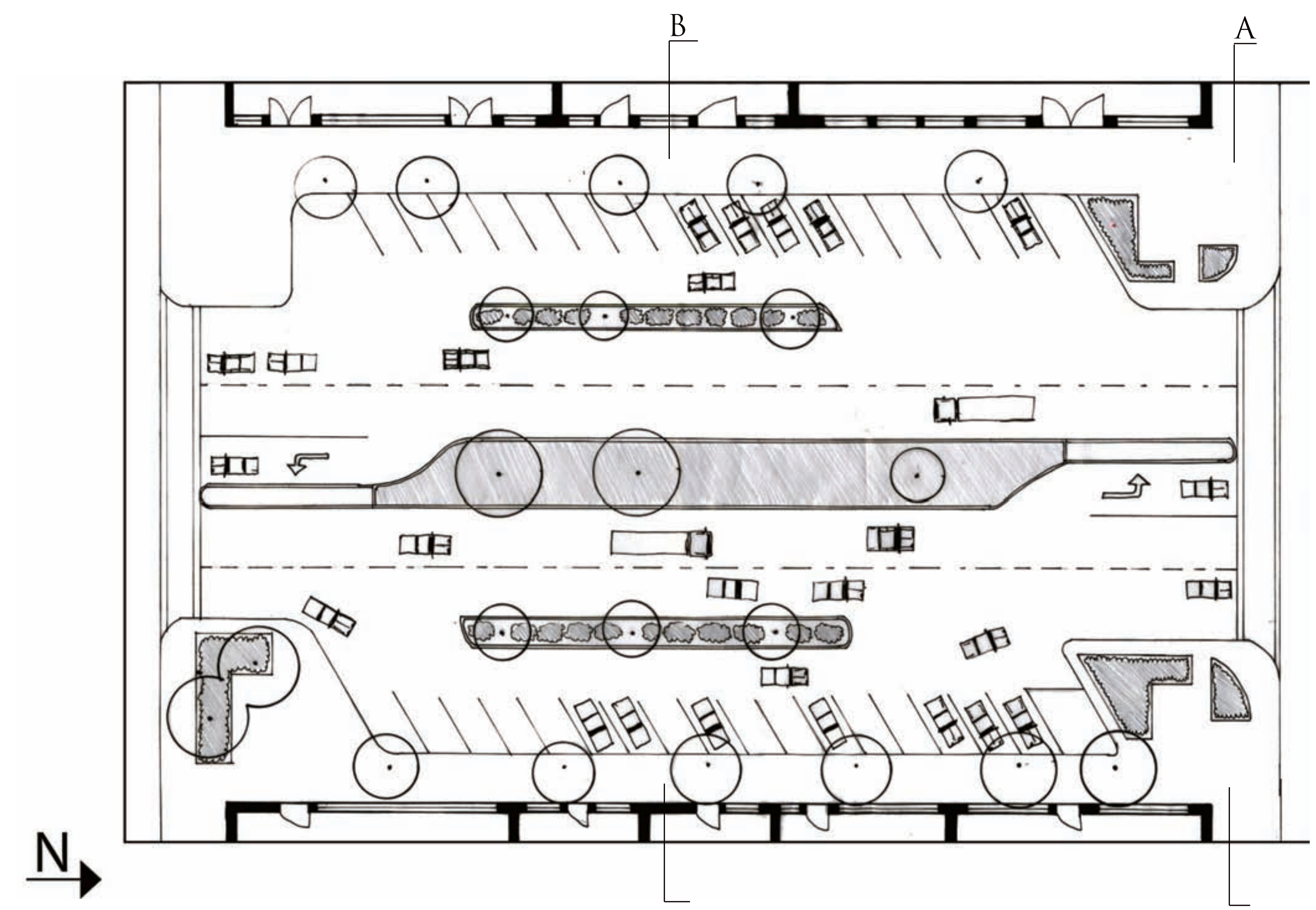
Service lane traffic is forced to merge onto the main traffic lane, interrupting the flow. With no designated bike lane, bikes are forced to move in and out of the service lane.

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.

Street Section A



Street Section B



Street Plan

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

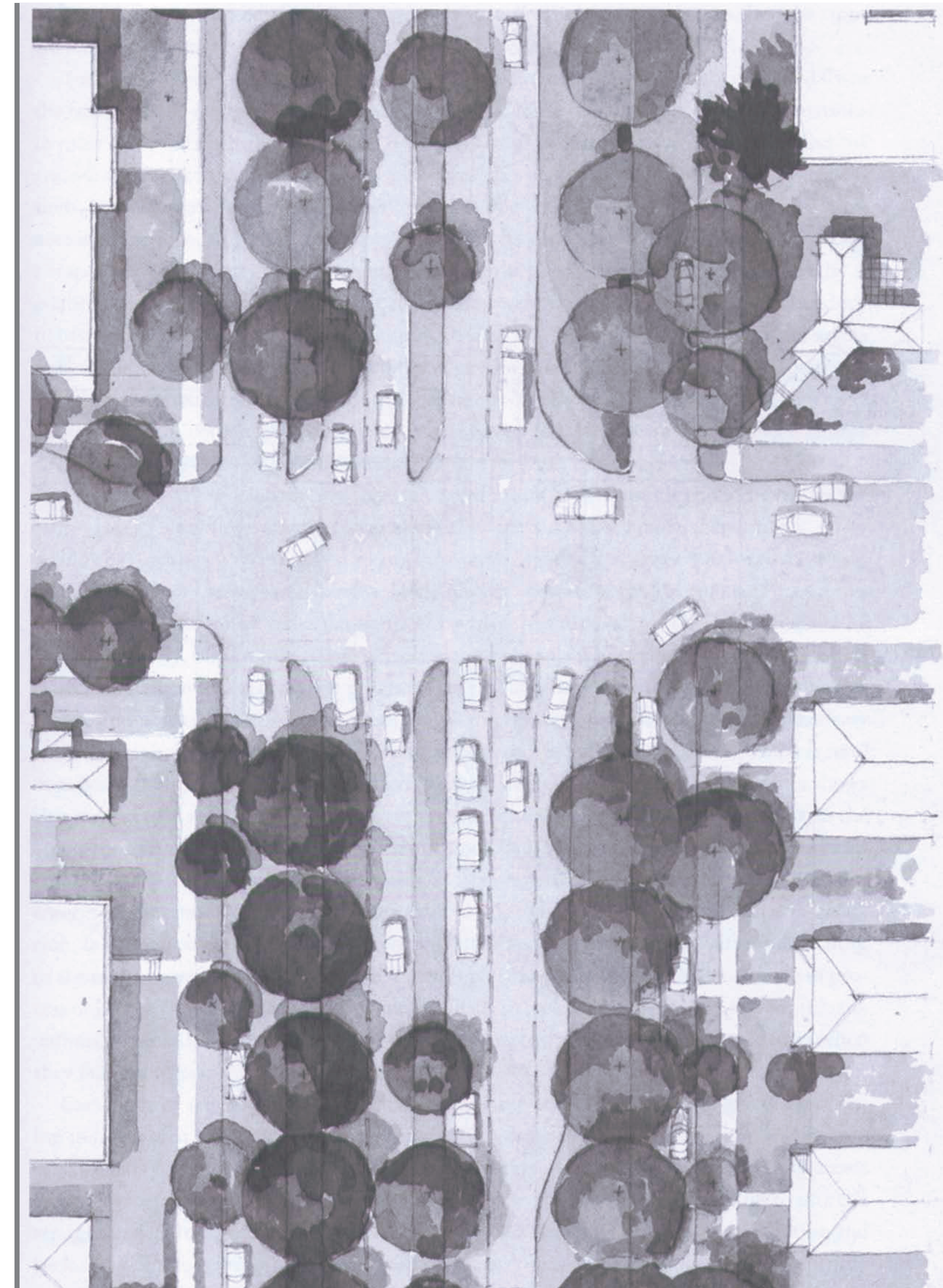
Weaknesses

■ 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



FROM *THE BOULEVARD BOOK* BY A. JACOBS

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.

Participants at the AIA 150 Charrette.

THE AIA150 WORKSHOP

In February 2007, the studio joined with members of the profession and community to prepare conceptual plans for the Franklin Corridor between Springfield and Eugene. The goal of this process was to jointly develop a set of planning goals and measurable objectives while beginning to create a development program in terms of specific land use goals, residential and commercial densities, open space needs, and the like.

The public workshop was held as part of the American Institute of Architects (AIA) AIA150, its 150-year celebration, which is part of AIA's national Blueprint for America. Hundreds of participants focused on the Franklin Corridor and riverfront for two days. They found themselves agreeing on a surprising number of issues.

At the first nights' reception held on February 2 , over 200 people gathered in the Atrium Building to learn how other communities have developed their boulevards, waterfronts, millraces, and downtown parks. They saw a variety of previous proposals for the 3.5-mile corridor – from plans for opening the millrace in Eugene's courthouse district to redeveloping Glenwood's waterfront. The next day over 100 citizens worked in diverse groups— with local residents, business owners, designers, students, and city officials. They spent 7 hours crafting their own ideas for the corridor. A similar two-day workshop was held later in Springfield at the historic Train Depot and that event attracted over 100 participants.

Participants chose either a geographic focus (Courthouse District, East Eugene, or Glenwood) or a system focus (transportation or natural). UsingWith students who have studied the area or system and a design professional, they rolled up their sleeves and got to work.

Two groups that addressed the systems linking Eugene and Springfield determined that the Willamette River is a social and an ecological asset. These groups hoped that the riverfront would be open to the public along its full length through the corridor, from the EWEB property through Glenwood to the bridge into downtown Springfield

These groups also wanted to extend "green fingers" from the river into developed areas. These could be streets graced with beautiful trees, avenues with planted medians, and real parks, with green nature rather than gray concrete. In Eugene, they would extend from the existing park blocks all the way to the river. In Glenwood, they would connect a realigned Franklin Boulevard to the river.

The two groups dealing with transportation linkages proposed nearly identical solutions for rebuilding Franklin in a way that accommodates its varied users – local and thru traffic, pedestrians, bikes, and busses. These groups proposed converting Franklin into a multi-way boulevard, with slow-moving access lanes on the side and thru traffic (vehicles and busses) in the middle. These boulevards have been used successfully in communities around the world and transform arterial streets, which Franklin is, from an eyesore that development turns its back on to an amenity that attracts appropriate infill and mixed-use buildings. One group called it a "great boulevard for a great city." Both groups showed how a multi-way boulevard could work in Eugene's Walnut Station Area and throughout much of Glenwood. Interestingly, the two groups also courageously considered realigning Franklin Boulevard in Glenwood to the south to accommodate more appropriately scaled projects along the river.

Two groups studied Eugene's emerging Courthouse District and connected the downtown to the river with an extension of the park blocks in order to weave together natural systems and the urban fabric. They also proposed opening the millrace and incorporating mixed-use commercial and residential buildings in the district. These groups also wanted to keep the riverfront open to the public as a parkway or esplanade.

Three groups studied the East Eugene area, which spans from Walnut Street to the University of Oregon. They also wanted a multi-way boulevard to attract more mixed use and pedestrian-scaled development, while also accommodating thru traffic. They described the existing millrace as a natural attraction and a desirable urban historic waterway that, if improved, could connect the city with the river. And all three groups supported increasing the density of building along Franklin Boulevard. But in a way that preserved the integrity of existing neighborhoods.

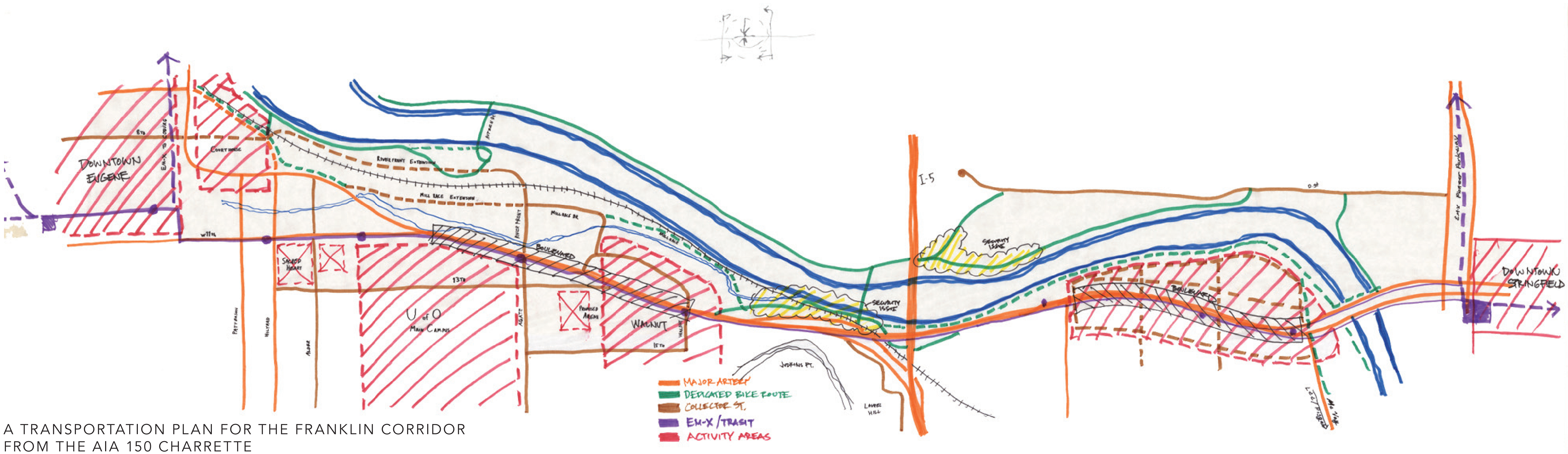
Two groups studied Glenwood and created visionary concepts that address the river and the road. In addition to suggesting that most of Franklin be converted into a multi-way boulevard, they connected Glenwood to the northside of the Willamette River with a new pedestrian foot bridge. These groups also kept the waterfront completely public and they showed how infill development over the long term can be structured around a grid system that connects the neighborhoods across Franklin Boulevard. They saw the boulevard and the river as unifying elements that could support sustainable developments with mixed-use buildings.

That's quite a lot of agreement, considering the varied backgrounds and intended agendas of many participants. There were dissenting voices, to be sure, and there may be more. But many of us who organized these events left the February workshop thinking "We might be on to something."

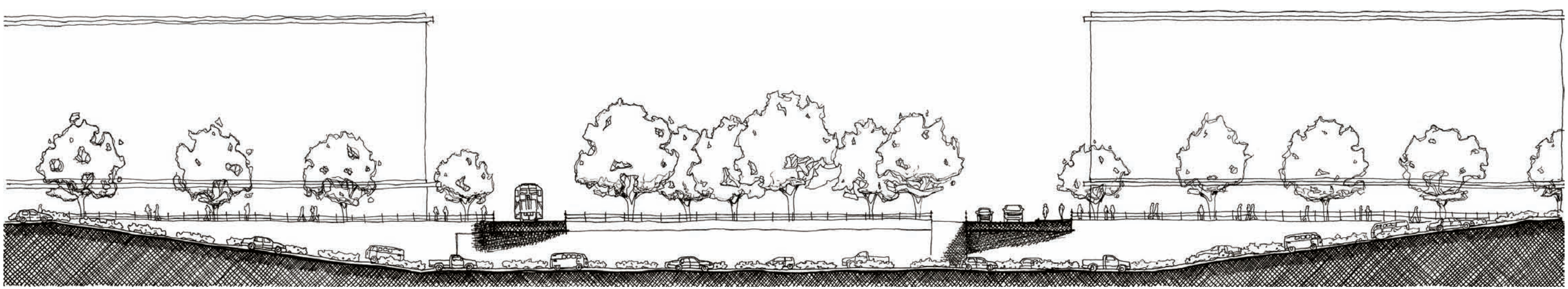
The participants created a language and a set of values that could help guide and inform planning the boulevard and riverfront. All too often, development is driven by competing interests with their own language – engineers, architects, environmentalists, developers, planners, property owners, and real estate agents all speak different languages. The corridor needs a "common" language for design that addresses shared values and interests. The words of that language can be considered principles or patterns that can guide future development. The AIA150 workshop and the student work was an important step in creating these common patterns: a public waterfront, a restored millrace, park blocks to the river, green fingers, multiway boulevards, mixed-use buildings, and uninterrupted bike paths.

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

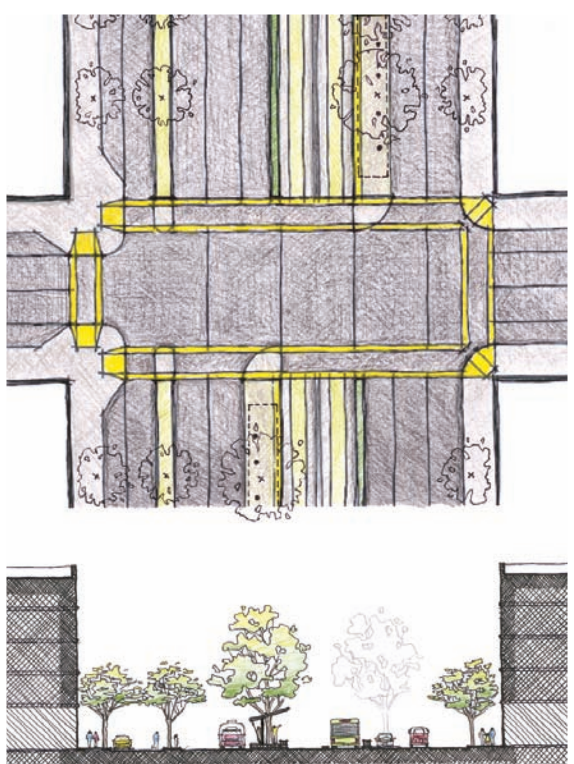
Green Fingers

CONNECTING COMMUNITIES TO THE RIVER

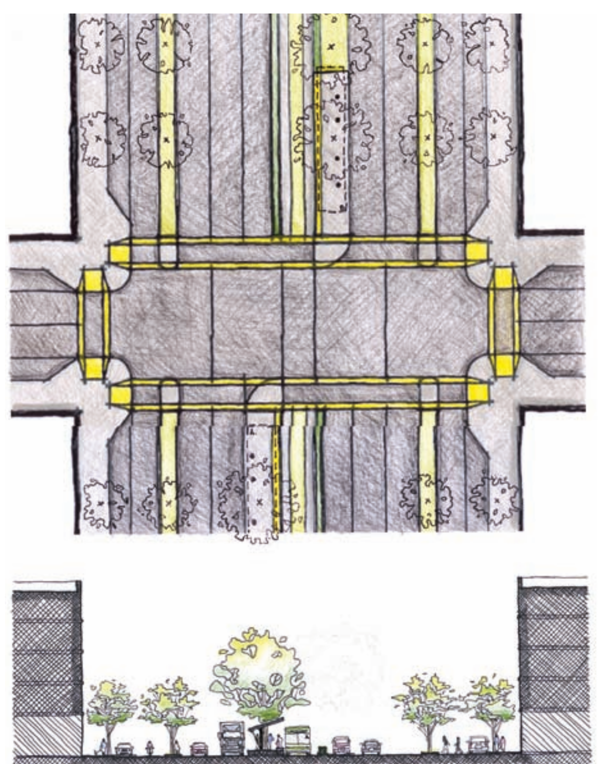
Boulevard design

THREE CONFIGURATIONS FOR MULTIWAY BOULEVARD

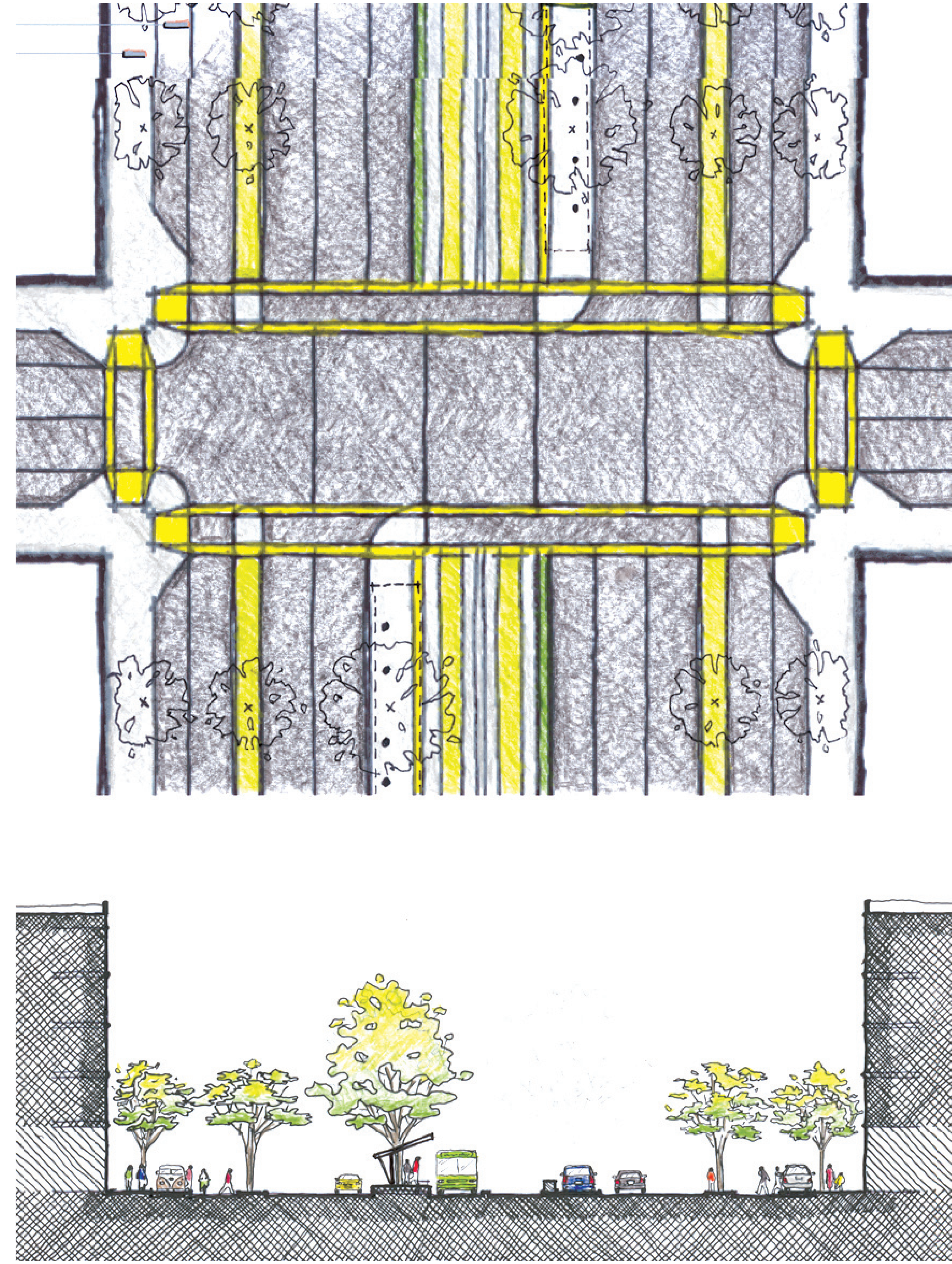
Option 1: 152' - 6" Right of way allows for two BRT lanes, two side-access lanes, and four through lanes



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

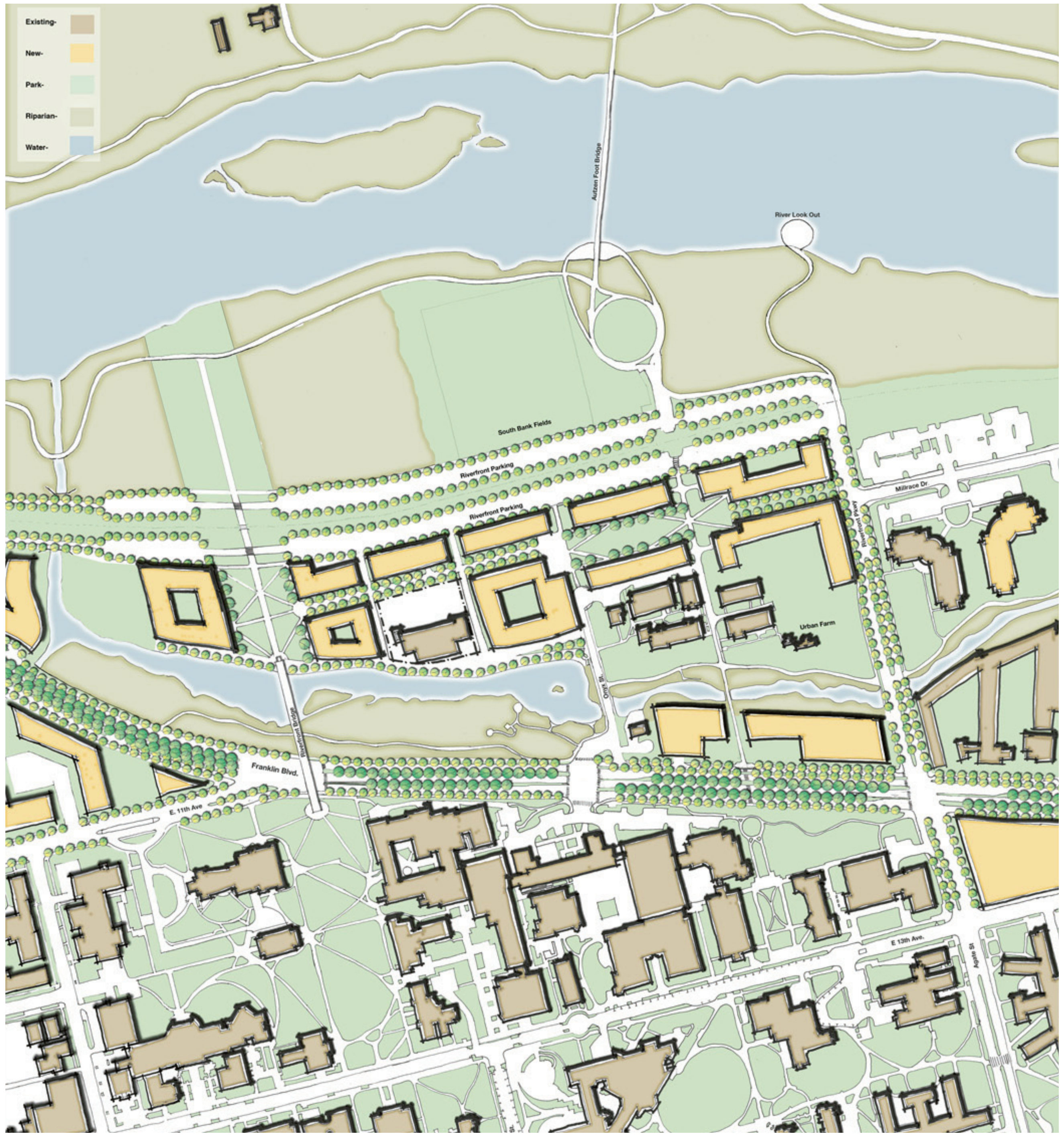
Eugene's Riverfront

ILLUSTRATIVE PLAN

REGULATING PLAN

UO's Riverfront

CONNECTING THE CAMPUS TO THE WILLAMETTE RIVER



ILLUSTRATIVE PLAN

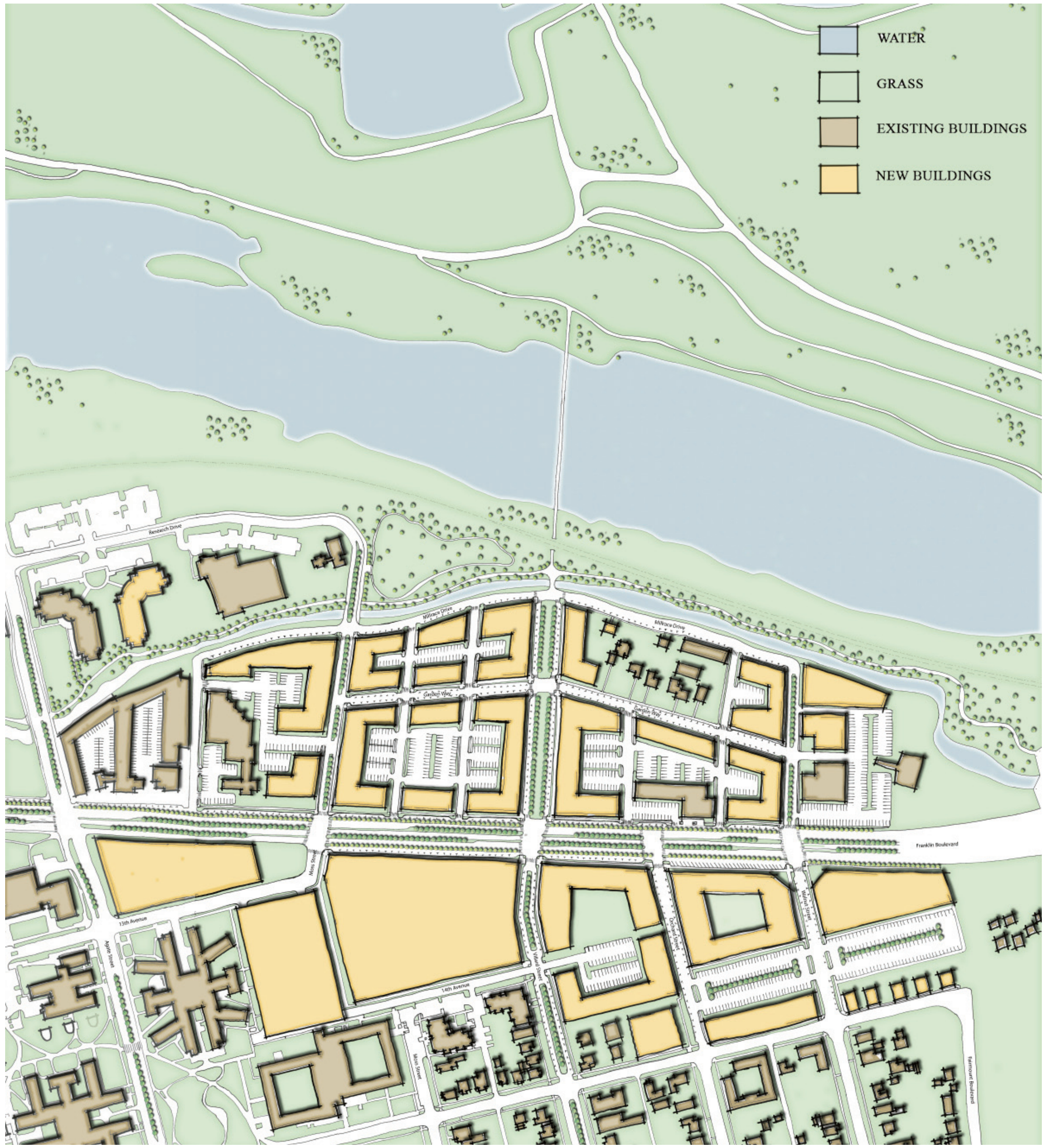
0 200'

REGULATING PLAN

0 200'

Walnut Station

DEVELOPING ALONG FRANKLIN BOULEVARD



ILLUSTRATIVE PLAN

0 200'

REGULATING PLAN

0 200'

Glenwood

REALIZING THE RIVERFRONT POTENTIAL

ILLUSTRATIVE PLAN

Glenwood

REALIZING THE RIVERFRONT POTENTIAL

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 multiway 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 68-73.) 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 five 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

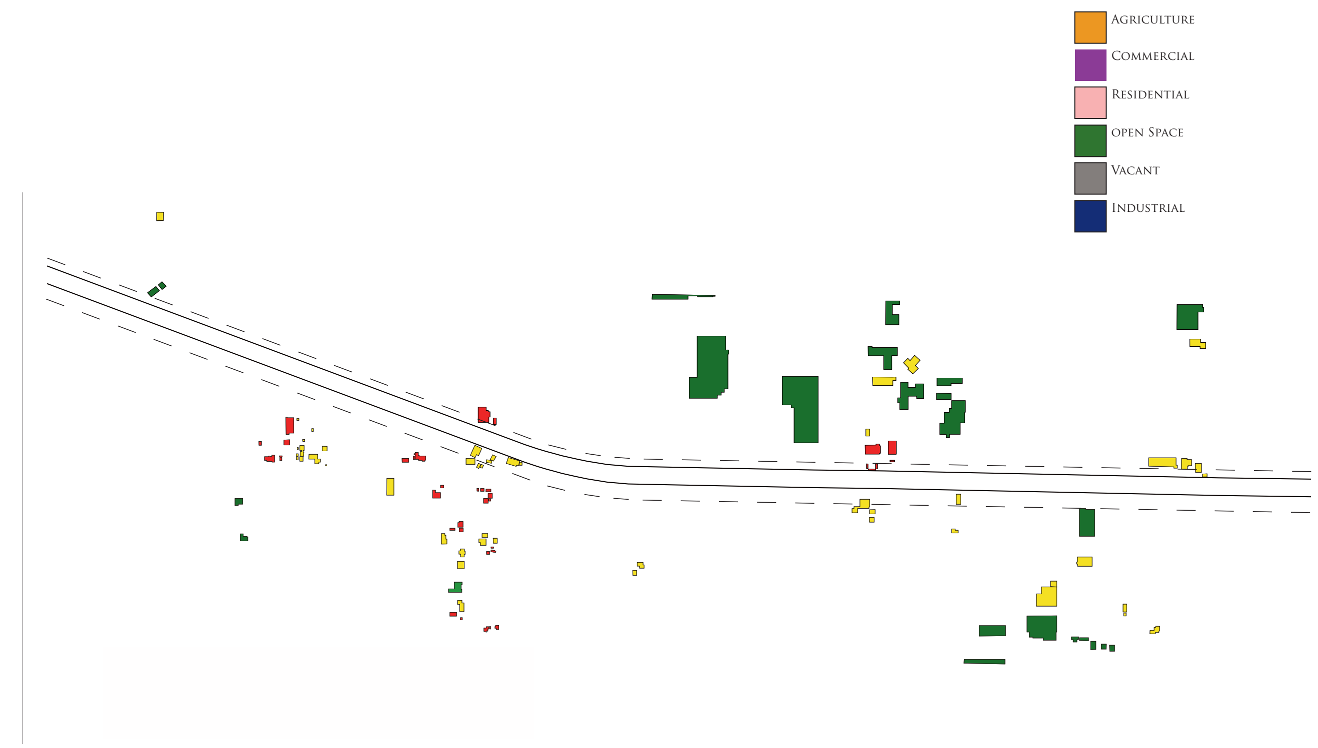
Multiway Boulevard with two access lanes returning to the through lanes. Total right-of-way required is 140 feet minimum. Access lanes can continue through the intersection where there are no bus stops.

Multiway Boulevard with one access lane continuing through the intersection. Total right-of-way required is 118 feet minumum.

Analysis: West Section

GREEN HILL ROAD TO DANEBO AVENUE

LAND USE



BUILDING CLASSIFICATION

OPEN SPACE

STREET CLASSIFICATION

Analysis: Center Section

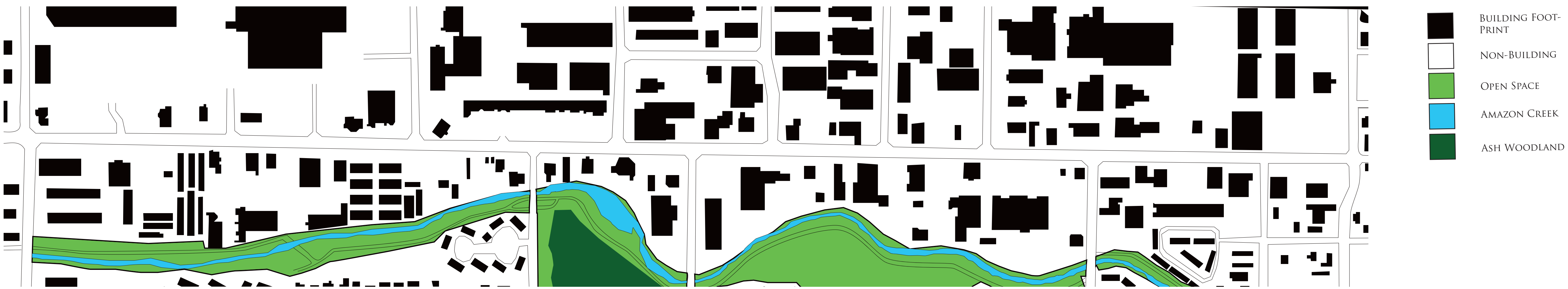
DANEBO AVENUE TO BAILEY HILL ROAD

BUILDING CLASSIFICATION

LAND USE

Analysis: East Section

BAILEY HILL ROAD TO GARFIELD STREET



OPEN SPACE

ZONING

Design: West Section

GREEN HILL ROAD TO DANEBO AVENUE

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

	Phase 1	Phase 2	Phase 3	TOTAL
Dwelling Units	0	870	1810	2,680
VMT Reduction (miles/yr)	0	10,440,000	21,720,000	32,160,000
CO2 Reduction (lbs CO2/yr)	0	11,484,000	23,892,000	35,376,000
Farmland Preservation (acres)	0	67	139	206
Per HH Savings ($/yr)	0	3,240	3,240	3,240
Accidents avoided per year	0	28	59	87
Tax Revenue ($/yr)	0	1,740,000	3,620,000	5,360,000
ROW Cost ($)	1,859,895	0	675,000	2,534,895
Blvd Cost ($)	12,100,000	0	0	12,100,000
Total Cost ($)	13,959,895	0	675,000	14,634,895
Blvd Length (miles)	1.21	0.00	0.00	1.21
Bldgs Removed for ROW	0	9	13	22

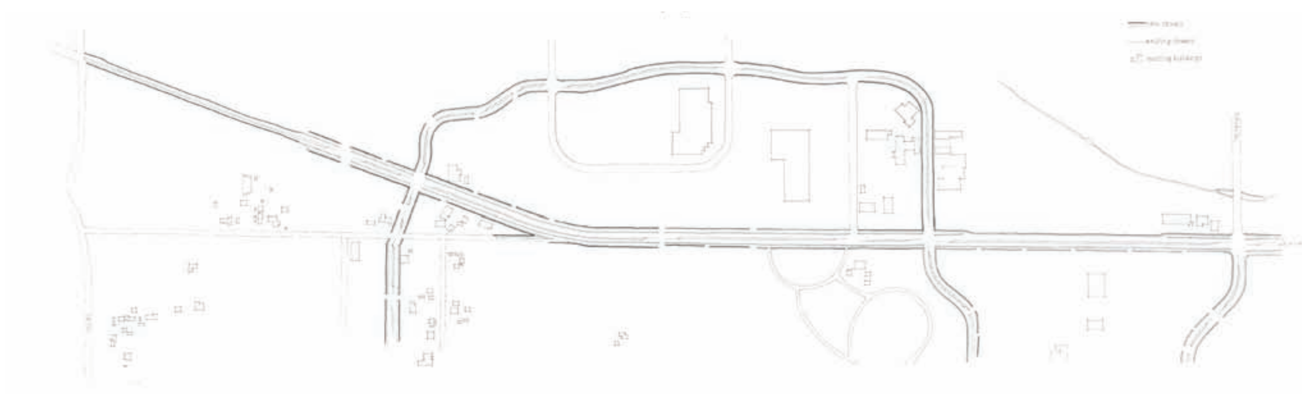
PHASE 1

PHASE 2

PHASE 3

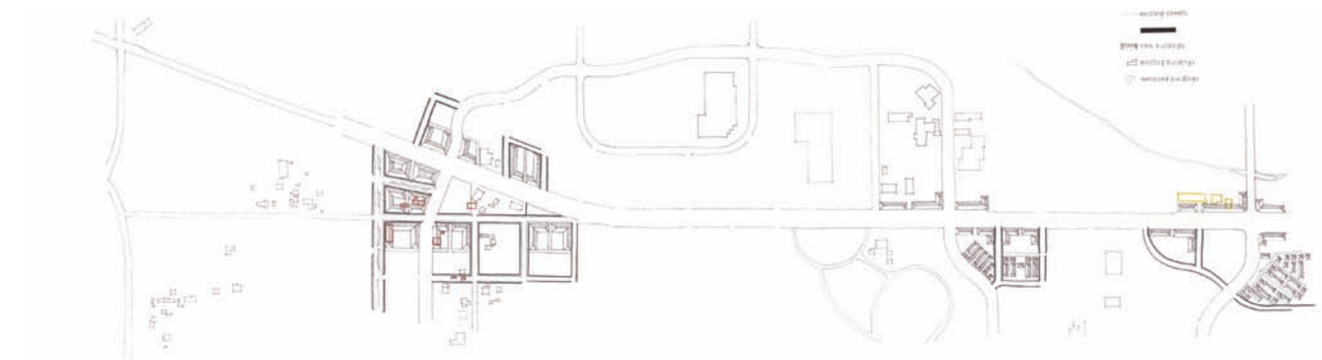
Design: West Section

GREEN HILL ROAD TO DANEBO AVENUE



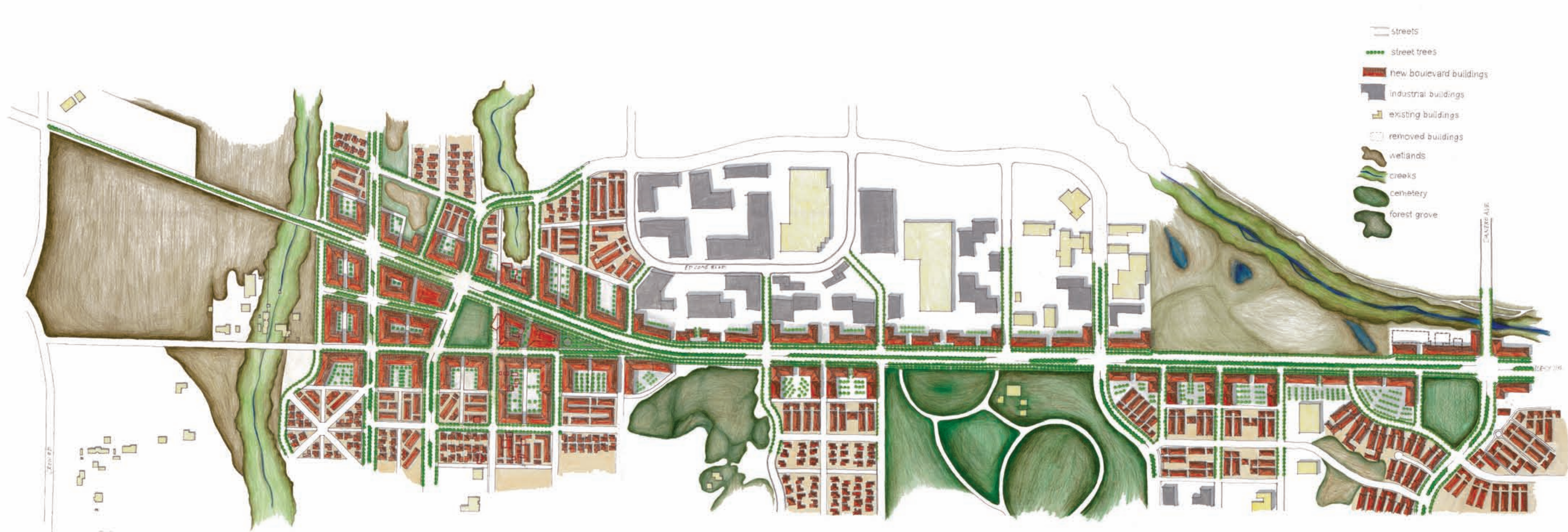
PHASE 1

0 400'



PHASE 2

0 400'



PHASE 3

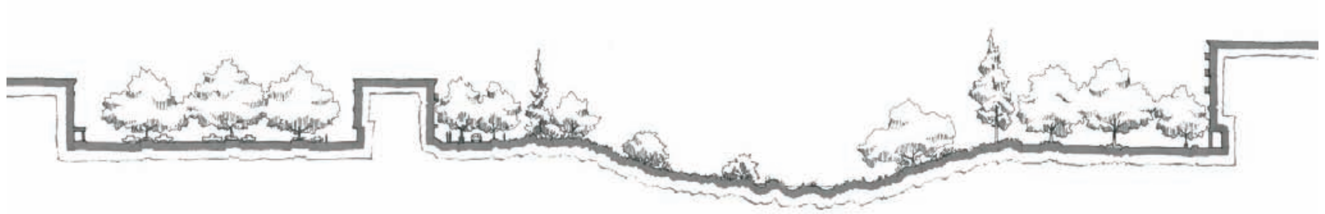
0 400'

Design: Center Section

DANEBO AVENUE TO BAILEY HILL ROAD

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

	Phase 1	Phase 2	Phase 3	TOTAL
Dwelling Units	1,796	554	1,203	3,553
VMT Reduction (miles/yr)	21,552,000	6,648,000	14,436,000	42,636,000
CO2 Reduction (lbs CO2/yr)	23,707,200	7,312,800	15,879,600	46,899,600
Farmland Preservation (acres)	138	43	93	274
Per HH Savings ($/yr)	3,240	3,240	3,240	3,240
Accidents avoided per year	58	18	39	115
Tax Revenue ($/yr)	3,592,000	1,108,000	2,406,000	7,106,000
ROW Cost ($)	26,669,999	0	0	26,669,999
Blvd Cost ($)	15,000,000	0	0	15,000,000
Total Cost ($)	41,669,999	0	0	41,669,999
Blvd Length (miles)	1.50	0	0	1.50
Bldgs Removed for ROW	0	17	27	44



PHASE 1

PHASE 2

PHASE 3

Design: Center Section

DANEBO AVENUE TO BAILEY HILL ROAD

PHASE 1

0 400'

PHASE 2

0 400'

PHASE 3

0 400'

Design: East Section

BAILEY HILL ROAD TO GARFIELD STREET

EXISTING CONDITION

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

	Phase 1	Phase 2	Phase 3	TOTAL
Dwelling Units	0	412	2482	2,894
VMT Reduction (miles/yr)	0	4,944,000	29,784,000	34,728,000
CO2 Reduction (lbs CO2/yr)	0	5,438,400	32,762,400	38,200,800
Farmland Preservation (acres)	0	32	191	223
Per HH Savings ($/yr)	0	3,240	3,240	3,240
Accidents avoided per year	0	13	80	93
Tax Revenue ($/yr)	0	824,000	4,964,000	5,788,000
ROW Cost ($)	6,336,000	11,975,040	0	18,311,040
Blvd Cost ($)	12,000,000	12,000,000	0	24,000,000
Total Cost ($)	18,336,000	23,975,040	0	42,311,040
Blvd/BRT Lane Length (miles)	1.20	1.20	0	2.40
Bldgs Removed for ROW	0	17	7	24

PHASE 2

PHASE 3

Design: East Section

BAILEY HILL ROAD TO GARFIELD STREET

PHASE 1

0 400'

PHASE 2

0 400'

PHASE 3

0 400'

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 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

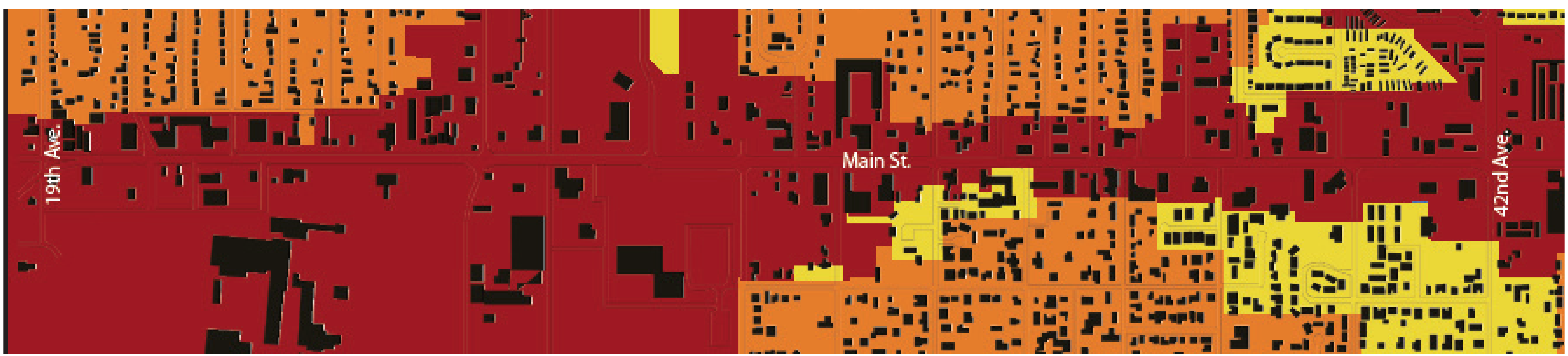
	PHASE 1	PHASE 2	PHASE 3	TOTAL
Dwelling Units	1,953	7,138	1,694	10,785
VMT Reduction (miles/yr)	23,436,000	85,656,000	20,328,000	129,420,000
CO2 Reduction (lbs CO2/yr)	25,779,600	94,221,600	22,360,800	142,362,000
Farmland Preservation (acres)	150	550	130	830
Per HH Savings ($/yr)	3,240	3,240	3,240	3,240
Accidents avoided per year	63	231	55	349
Tax Revenue ($/yr)	3,906,000	14,276,000	4,742,000	22,924,000
ROW Cost ($)	18,566,235	11,406,645	669,960	30,642,840
Blvd Cost ($)	37,500,000	17,500,000	2,000,000	57,000,000
Total Cost ($)	56,066,235	28,906,645	2,669,960	87,642,840
Blvd Length (miles)	3.75	1.75	0.2	5.70
Bldgs Removed	4	23	2	29

Analysis: West Section

19TH STREET TO 42ND STREET

BUILDING CLASSIFICATION

- Land Value/ Improvement Value > 2
- Land Value/ Improvement Value < 2
- Land Value/ Improvement Value < 2



ZONING

Residential: Low, Medium

Commercial: Community, Neighborhood

General Office

Religious

Open Space

Analysis: Center Section

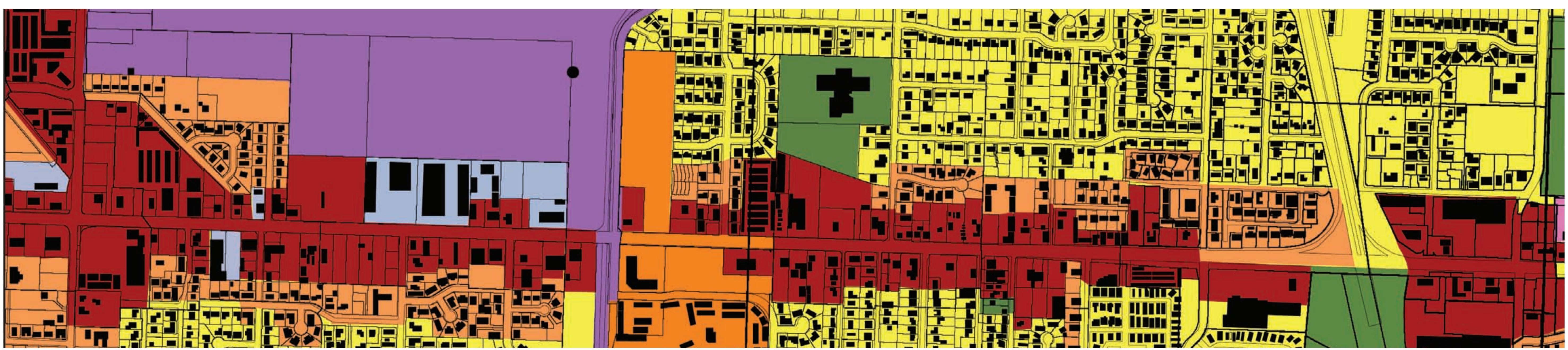
42ND STREET TO 58TH STREET

BUILDING CLASSIFICATION

Land Value/
Improvement Value > 2

Land Value/
Improvement Value < 2

Land Value/
Improvement Value < 2



ZONING

Residential

Low

Medium

Commercial

Community

Neighborhood

General Office

Religious

Open Space

Analysis: East Section

58TH STREET TO 79TH STREET

BUILDING CLASSIFICATION

Land Value/ Improvement Value > 2

Land Value/ Improvement Value < 2

Land Value/ Improvement Value < 2

ZONING

Residential: Low, Medium

Commercial: Community, Neighborhood, General Office

Religious

Open Space

Design: West Section

19TH STREET TO 42ND STREET

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

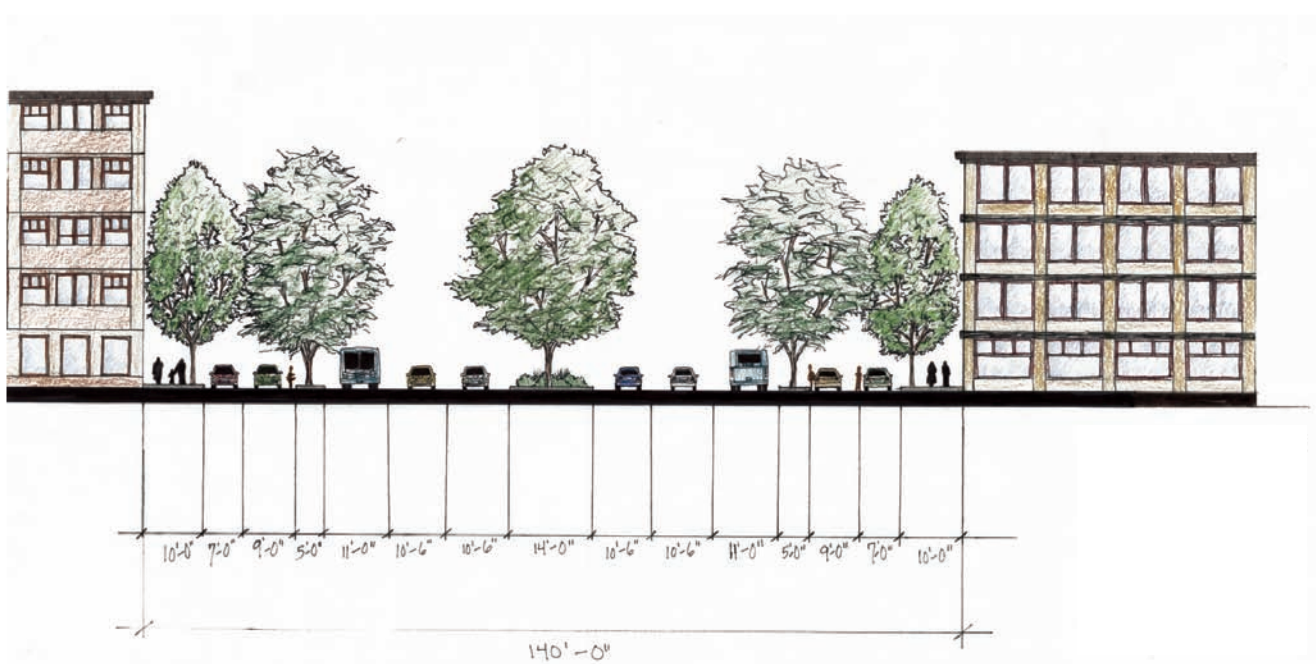
	PHASE 1	PHASE 2	PHASE 3	TOTAL
Dwelling Units	278	399	701	1,378
VMT Reduction (miles/yr)	3,336,000	4,788,000	8,412,000	16,536,000
CO2 Reduction (lbs CO2/yr)	3,669,600	5,266,800	9,253,200	18,189,600
Farmland Preservation (acres)	21	31	54	106
Per HH Savings ($/yr)	3,240	3,240	3,240	3,240
Accidents avoided per year	9	13	23	45
Tax Revenue ($/yr)	556,000	798,000	2,756,000	4,110,000
ROW Cost ($)	4,114,890	1,908,990	669,960	6,693,840
Blvd Cost ($)	12,500,000	2,500,000	2,000,000	17,000,000
Total Cost ($)	16,614,890	4,408,990	2,669,960	23,693,840
Blvd Length (miles)	1.25	0.25	0.20	1.70
Bldgs Removed	0	9	2	11

PHASE 1


PHASE 2

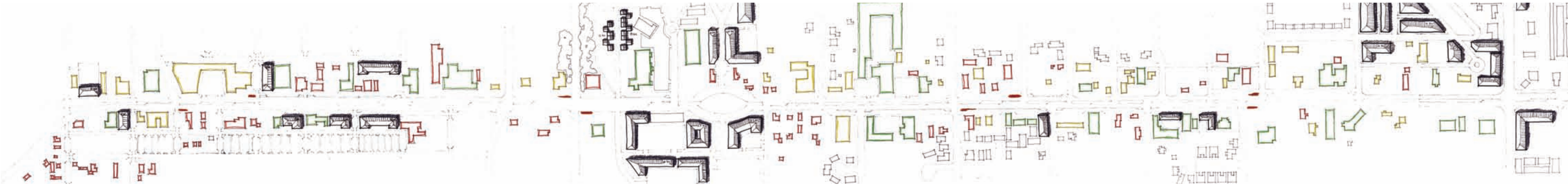
Design: West Section

19TH STREET TO 42ND STREET



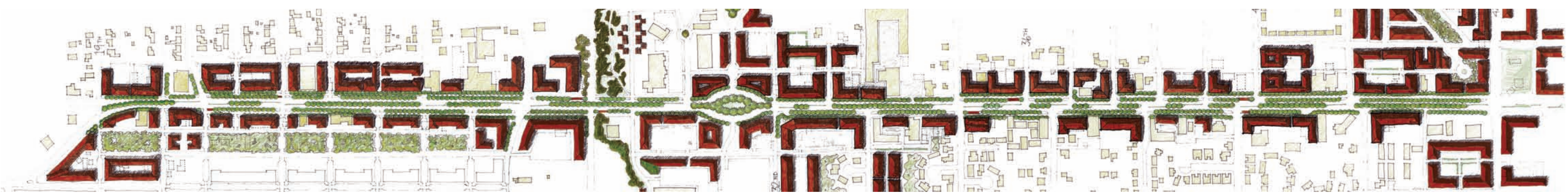
Design: West Section

19TH STREET TO 42ND STREET



PHASE 1

PHASE 2



PHASE 3

Design: Center Section

42ND STREET TO 58TH STREET

PHASE 1

PHASE 2

PHASE 3

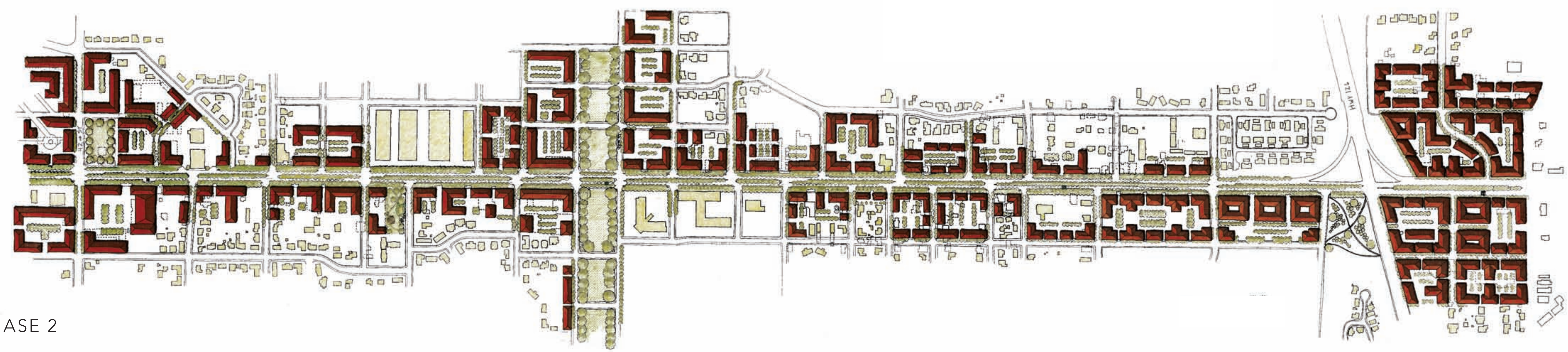
AN ENVIRONMENTAL AND ECONOMIC FORECAST
EAST MAIN STREET, SPRINGFIELD, OREGON: CENTRAL SECTION

	PHASE 1	PHASE 2	PHASE 3	TOTAL
Dwelling Units	1,000	6,020	NA	7,020
VMT Reduction (miles/yr)	12,000,000	72,240,000	NA	84,240,000
CO2 Reduction (lbs CO2/yr)	13,200,000	79,464,000	NA	92,664,000
Farmland Preservation (acres)	77	463	NA	540
Per HH Savings ($/yr)	3,240	3,240	NA	3,240
Accidents avoided per year	32	195	NA	227
Tax Revenue ($/yr)	2,000,000	12,040,000	NA	14,040,000
ROW Cost ($)	627,345	9,497,655	NA	10,125,000
Blvd Cost ($)	3,000,000	15,000,000	NA	18,000,000
Total Cost ($)	3,627,345	24,497,655	NA	28,125,000
Blvd Length (miles)	0.30	1.50	NA	1.80
Bldgs Removed	0	13	NA	13

Design: Center Section

42ND STREET TO 58TH STREET

PHASE 1



PHASE 2

Design: East Section

58TH STREET TO 79TH STREET

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

	PHASE 1	PHASE 2	PHASE 3	TOTAL
Dwelling Units	675	719	993	2,387
VMT Reduction (miles/yr)	8,100,000	8,628,000	11,916,000	28,644,000
CO_2 Reduction (lbs CO_2/yr)	8,910,000	9,490,800	13,107,600	31,508,400
Farmland Preservation (acres)	52	56	76	184
Per HH Savings ($/yr)	3,240	3,240	3,240	3,240
Accidents avoided per year	22	23	32	77
Tax Revenue ($/yr)	1,350,000	1,438,000	1,986,000	4,774,000
ROW Cost ($)	13,824,000	0	0	13,824,000
Blvd Cost ($)	22,000,000	0	0	22,000,000
Total Cost ($)	35,824,000	0	0	35,824,000
Blvd Length (miles)	2.20	0	0	2.20
Bldgs Removed	4	1	0	5

PHASE 1

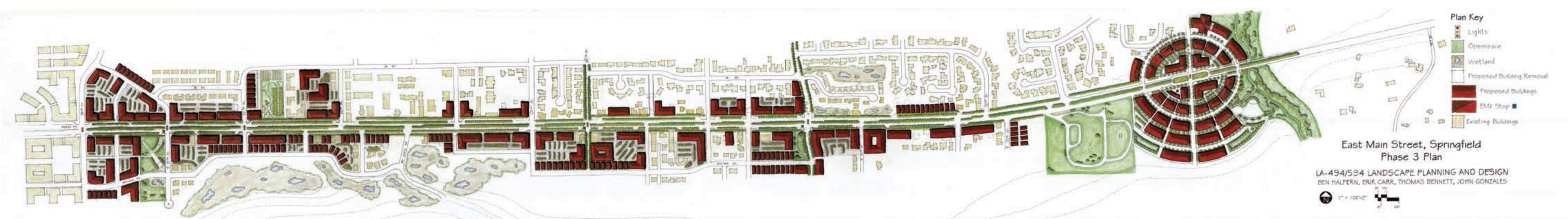
PHASE 2

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

Undergraduate Students
Jesse Golden
Kelsey Jensen
Lisa Kroner
Carl Liebhardt
Edghar Lopez
Eilidh MacLean
Mackenzie Moffitt
Tyler Nishitani
Danny Novick
Sheena Shook
Lauren Worland
Martina Young

Graduate Students
Ryan Cesca
Eric Knobelspiesse

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Instructors:
Mark L. Gillem, PhD, AIA, AICP
Assistant Professor

Rob Ribe, PhD
Professor

Allen Lowe
Adjunct Professor

Lanbin Ren
PhD Student

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Undergraduate Students
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Rebecca Bland
Kelly Brenner
Chuncey Freeman
John Gonzales
Ben Halpern
Ryan Heidt
Sam Jones
Genevieve Middleton
Suzanne Munsell
Nathan Otani
Erin Ponte
Sam Sabin
Laura Zanetto

Graduate Students
Stephanie Bailey
Thomas Bennett
Erik Carr
Barry Gordon
Barbara Knapp
Sandra Koike
Edward Love
Justin Simms
Liz Weigand

Reviewers
Mary Archer
Anita Van Asperdt
Chuck Bailey
Brian Barnett
Renee Benoit
Erik Bishoff
Tom Boyatt
Graham Carey
Tom Connor
Howard Davis
Anne DeLaney
Paul Dustrud
Susan Emmons
Phil Farrington
Michael Fifield
Kitti Gale
George Grier
Eric Gunderson
Jim Hanks
Bob Hastings
Kingston Heath
Kenny Helphand
David Helton
Amanda Hills
Larry Hirons
Montira Horayangura
Robin Hostick
David Hulse
Rob Inerfeld
Bart Johnson
Pat Johnston
Rene Kane
Peter Keyes
Don Khale
Matt Koehler
Kristi Krueger
Ron Lovinger
Allen Lowe
Kevin Matthews
Tim McCabe
Brian McCarthy
Marcy McInelly
Robert Melnick
Amy Miller Dowell
Kevin Nute
Kitty Piercy
Emily Proudfoot
Rob Ribe
Leslie Ryan
Becky Thomas
Linda Pauly
Art Paz
Jim Pettinari
Dan Pyle
Chris Ramey
Marc Schlossberg
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Christine Thompson
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Diane Wiley
Sue Wolling
Anita Yap
Rob Zako

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