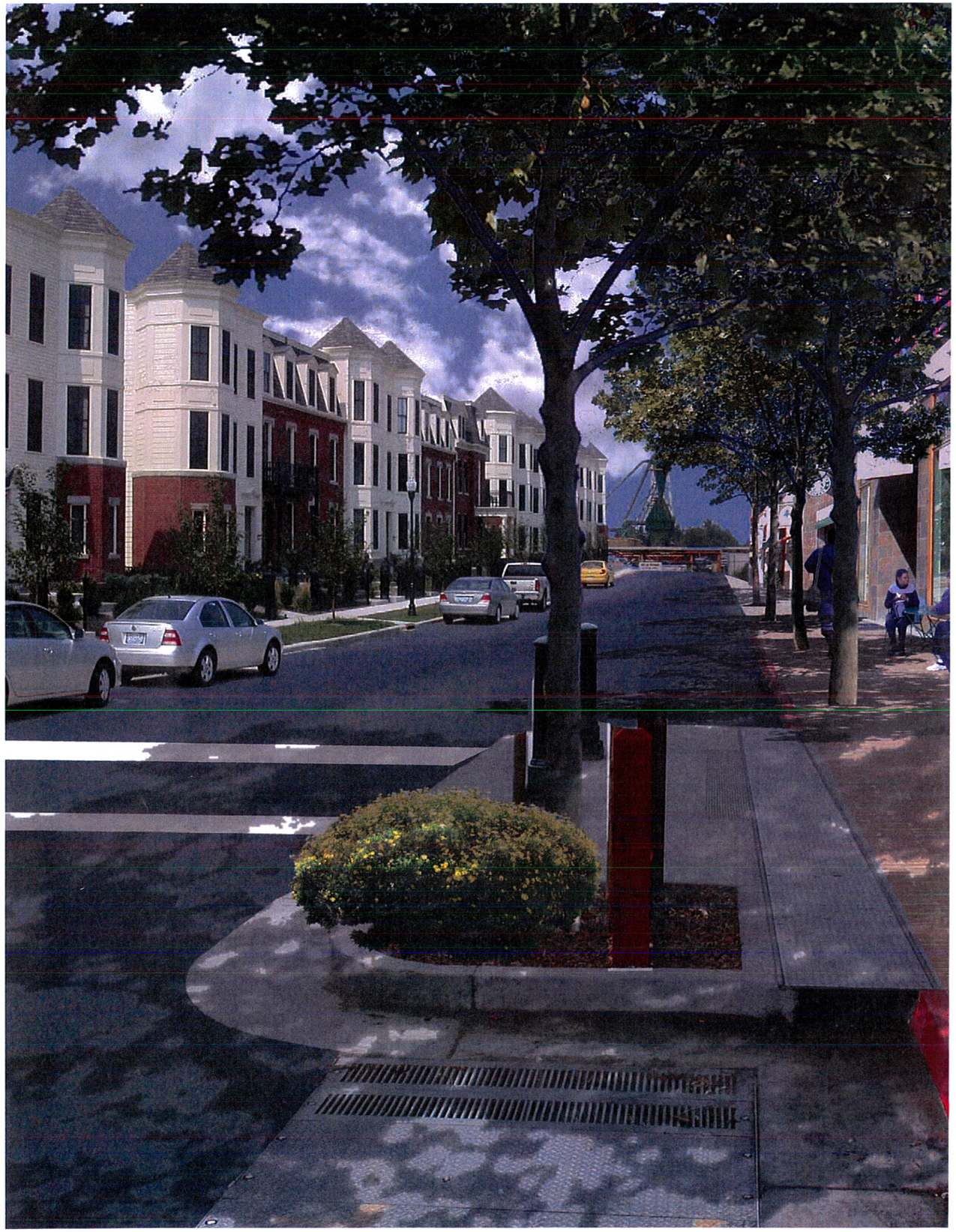
A copy of Lane County Farm Bureau's-sponsored study "Planning East Main Street", which examines alternatives for redevelopment and growth along Springfield's Highway 126 corridor, can be found at:
https://urbancollaborative.sharefile.com/?cmd=d&id=b02fd967f0234a6b

This study was undertaken by University of Oregon Professor Mark Gillem and his student work shop in the fall of 2008. You may contact George Grier, of Lane County Farm Bureau, with any questions: ggrier@efn.org.

EXHIBIT: 1 AGENDA ITEM: 2
LAND CONSERVATION & DEVELOPMENT COMMISSION
DATE: 11-5-09
PAGES: 40
SUBMITTED BY: George Grier

Planning
East Main Street

The results and products of landscape architecture studio
from the University of Oregon
Fall 2008



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Executive summary

BRIDGING COMMUNITIES THROUGH URBAN DESIGN

As Springfield citizens consider options for meeting the residential needs of the next generation, they need look no further than their own transportation corridors. Arterials like 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 East Main Street and other similar 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 Springfield's East Main Street, a Landscape Architecture Planning Studio at the University of Oregon studied the costs and benefits of converting East Main Street into a multiway boulevard. The benefits are substantial. Over three phases, the 5.7-mile section of East Main Street (from 22nd Street to the eastern edge of the Urban Growth Boundary) could accommodate 10,785 new homes in a variety of configurations – from a few small lot single-family bungalows to multi-family rowhouses, apartments, and condominiums. 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 130 million miles a year less than they would have if they lived at the edge of town. This translates into a reduction of over 142 million pounds of carbon dioxide every year.

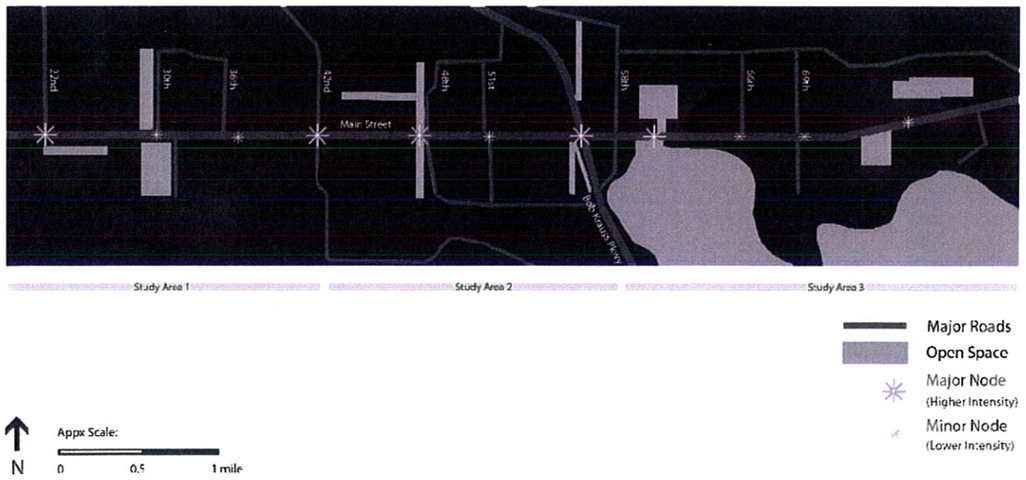
Moreover, the families living along the boulevard would save over $3,000 every year in automobile-related expenses as a result of their reduced driving. Since they are driving less, this would translate into an annual reduction of almost 2,000 accidents. And since these homes would be built on already developed land, this would result in a savings of up to 830 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 29 existing buildings over three phases, would cost approximately $27 million. And the cost of converting the street into a multiway boulevard over three phases would be roughly $57 million. But this total cost of slightly over $84 million would be offset by additional annual tax revenue of nearly $23 million a year at build out, which would equate to a remarkably short four-year payback.

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. 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 East Main Street and its associated land-use, environmental, zoning, social, and economic patterns. Students then developed design principles for the corridor, designed a flexible boulevard configuration, and prepared planning proposals and urban designs for phased redevelopment of East Main Street. Once their conceptual design was 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.

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.

Their work was supported by generous grants from the Oregon Transportation Research and Education Consortium and the Lane County Farm Bureau. This report summarizes the findings of the studio.



Background

U.S. DEPARTMENT OF TRANSPORTATION STRATEGIC PLAN

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. 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

"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."

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, Springfield 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). 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

East Main Street is an emerging multimodal facility. It currently supports 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 arterial has sidewalks in most locations, these are infrequently used for the same reasons. Sidewalks are

East Main Street is an emerging multimodal facility. It currently supports vehicles and a bus system. But transit alone will not transform an arterial into a multimodal facility.

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 East Main Street:

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

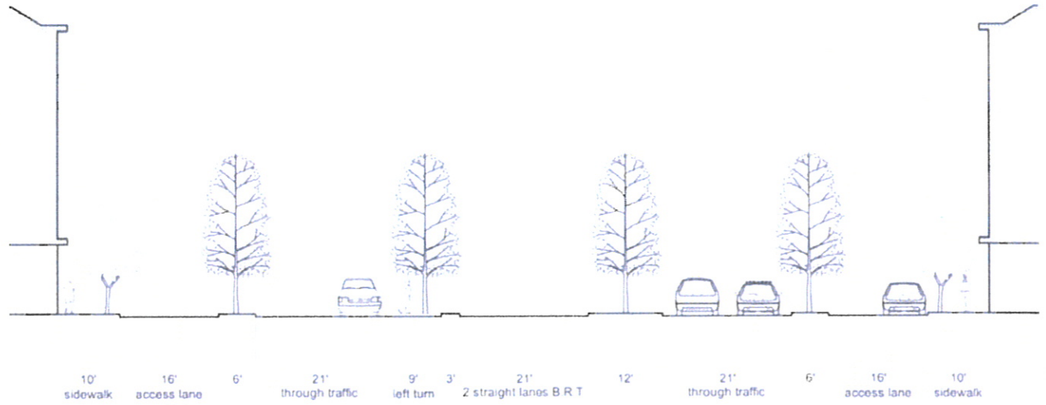


Figure 1: A typical multiway boulevard in 151′ right-of way.

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.

FINDINGS

Over the course of this project, members of the community - 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. Neighborhood leaders 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-way of up to 120 feet (36.5 m) cannot accommodate a multiway boulevard. A right-of-way of at least 151 feet (46.0 m) is required (see figure 1), which could be accommodated with minimal impact to any existing buildings. 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 a similar finding for East Main Street.

URBAN FORM AND RESIDENTIAL CAPACITY

The entire corridor could support over 10,000 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.

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, East Main Street 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, the street 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. The table below shows the various forecasts for the reconfiguration:

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	549	130	830
Per HH Savings ($/yr)	3,240	3,240	3,240	3,240
Accidents per year	356	1,302	309	1,967
Tax Revenue ($/yr)	3,906,000	14,276,000	4,742,000	22,924,000
ROW Cost ($)	18,357,120	8,240,760	669,960	27,267,840
Blvd Cost ($)	37,500,000	17,500,000	2,000,000	57,000,000
Total Cost ($)	55,857,120	25,740,760	2,669,960	84,267,840
Blvd Length (miles)	3.75	1.75	0.2	5.70
Bldgs Removed	4	23	2	29

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 inhistoric architecture and local businesses.

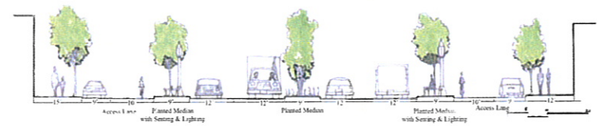
Historically, the area has been the scene of violent crime and drug activity. Since the restructuring of the boulevard, including Patricia's Green park, new life has been injected into the neighborhood. This is evident at the street front where local businesses flourish and at the park, where an average 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 boulevard. 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.



STREET SECTION

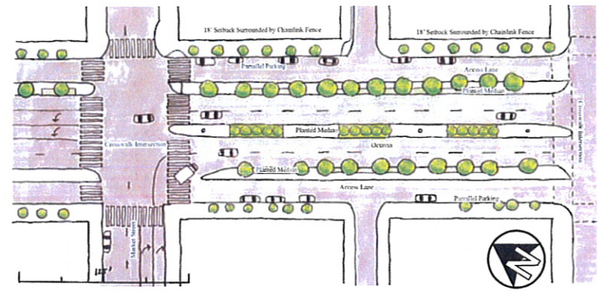


Photo: Liz Weigand

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.

The south end of the street is decidedly less active and functions more as a thouroufare for traffic exiting route 101. Housing has yet to be constructed along these blocks, which is likely the reason that fewer pedestrians are found.

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 it's

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 pedstrian 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.

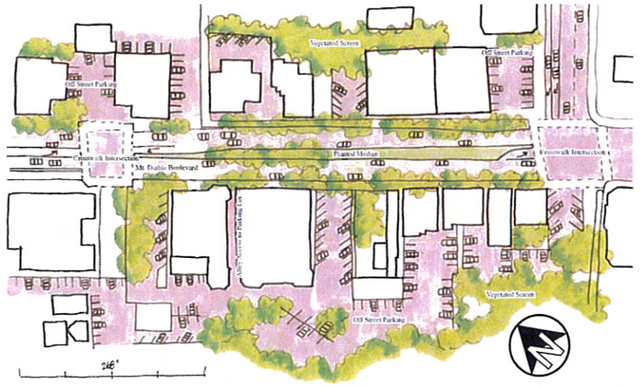
In contrast with rear parking and small, tucked-in lots, the western end of the boulevard reverts to it's earlier roots as a typical American strip-mall with large amounts of parking in front of stores. This model limits the amount of activity that can take place at the storefront level.

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 Moranga Road rises above the neighboring buildings and serves as a community icon.

STREET SECTION



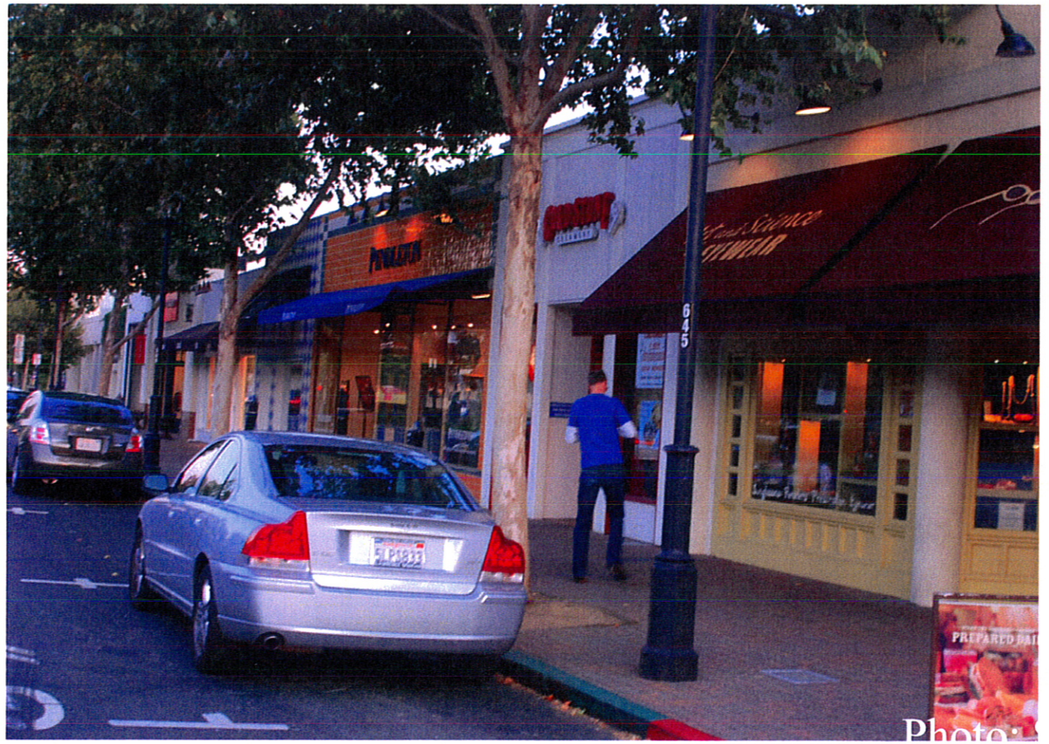


Photo:

Shattuck Avenue

A PRECEDENT STUDY FROM BERKELEY, CALIFORNIA

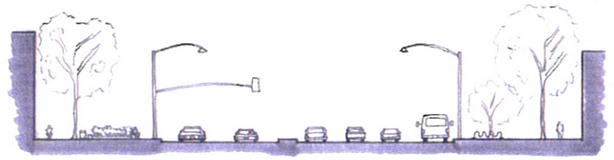
Berkeley is located on the east shore of San Francisco Bay. Berkeley's Shattuck Ave. has been called the "the heart of trendy Berkeley." With dining and shopping lining this corridor and its close proximity to UC Berkeley, it is easy to understand

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

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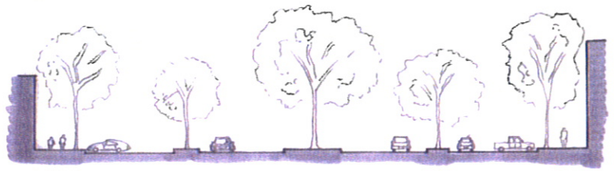

STREET SECTION B

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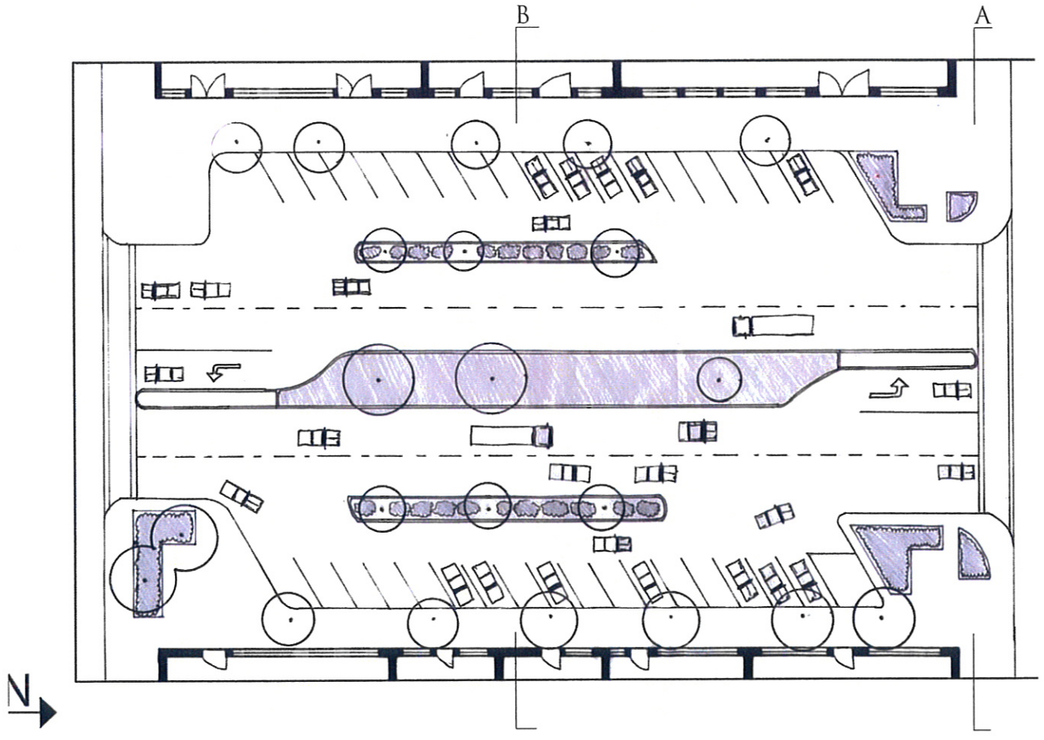
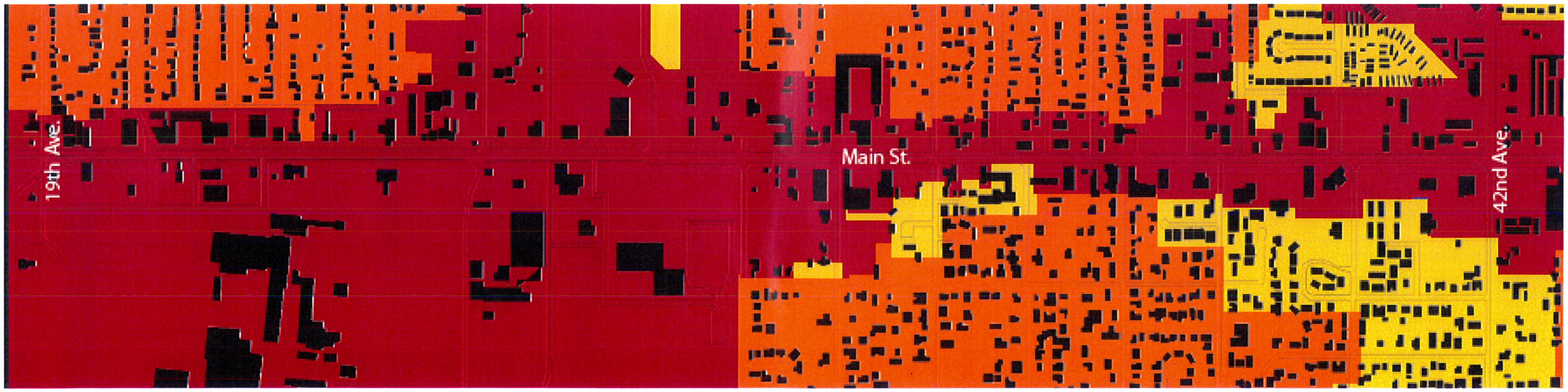


STREET PLAN

Analysis: West Section

BUILDING CLASSIFICATION

ZONING



Analysis: Center Section

BUILDING CLASSIFICATION

Land Value/ Improvement Value > 2

Land Value/ Improvement Value < 2, Built after 1970 or historic value

Land Value/ Improvement Value < 2

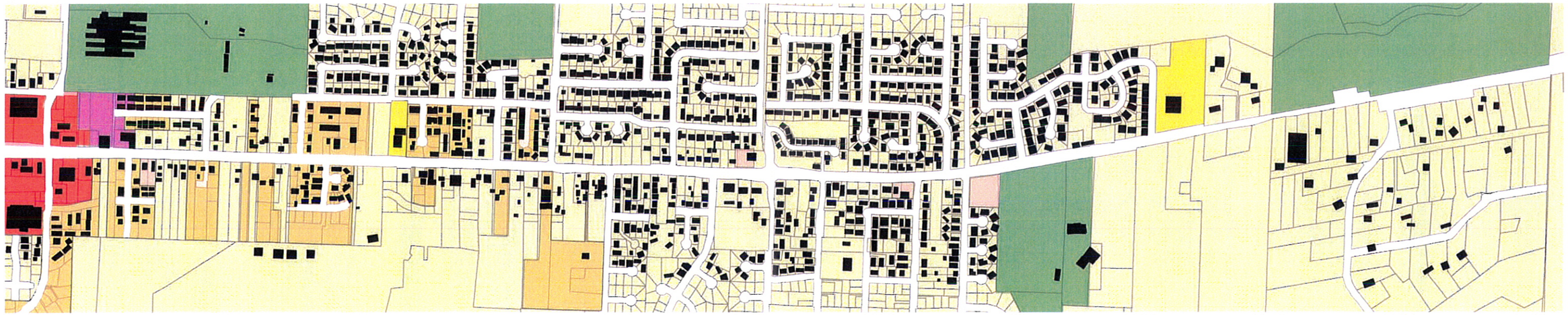
ZONING

HIGH DENSITY RESIDENTIAL (HDR)
MEDIUM DENSITY RESIDENTIAL (MDR)
LOW DENSITY RESIDENTIAL (LDR)
COMMUNITY COMMERCIAL (CC)
LIGHT MEDIUM INDUSTRIAL (LMI)
HEAVY INDUSTRIAL (HI)
PUBLIC LAND & OPEN SPACE (PLO)
GENERAL OFFICE (GO)

Analysis: East Section

BUILDING CLASSIFICATION

ZONING



Design: West

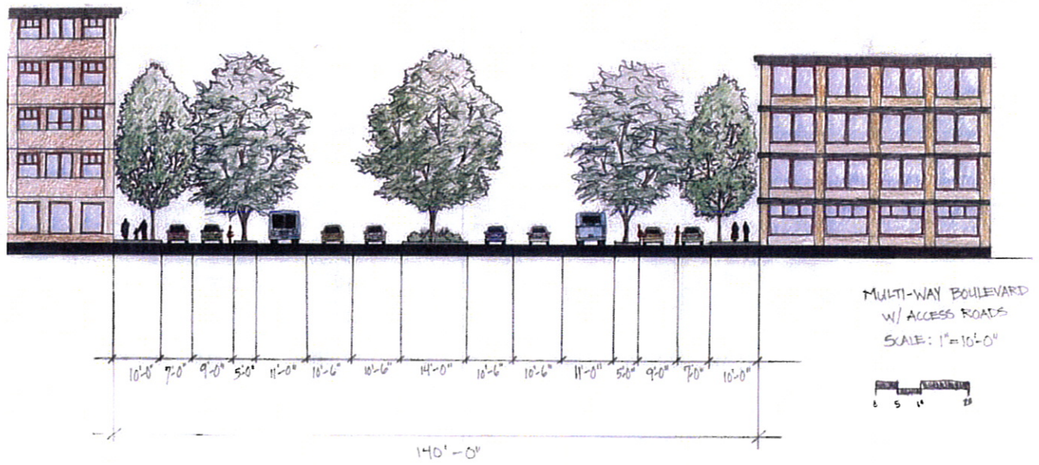
AN ENVIRONMENTAL AND ECONOMIC FORECAST
EAST MAIN STREET, SPRINGFIELD, OREGON: WEST SECTION

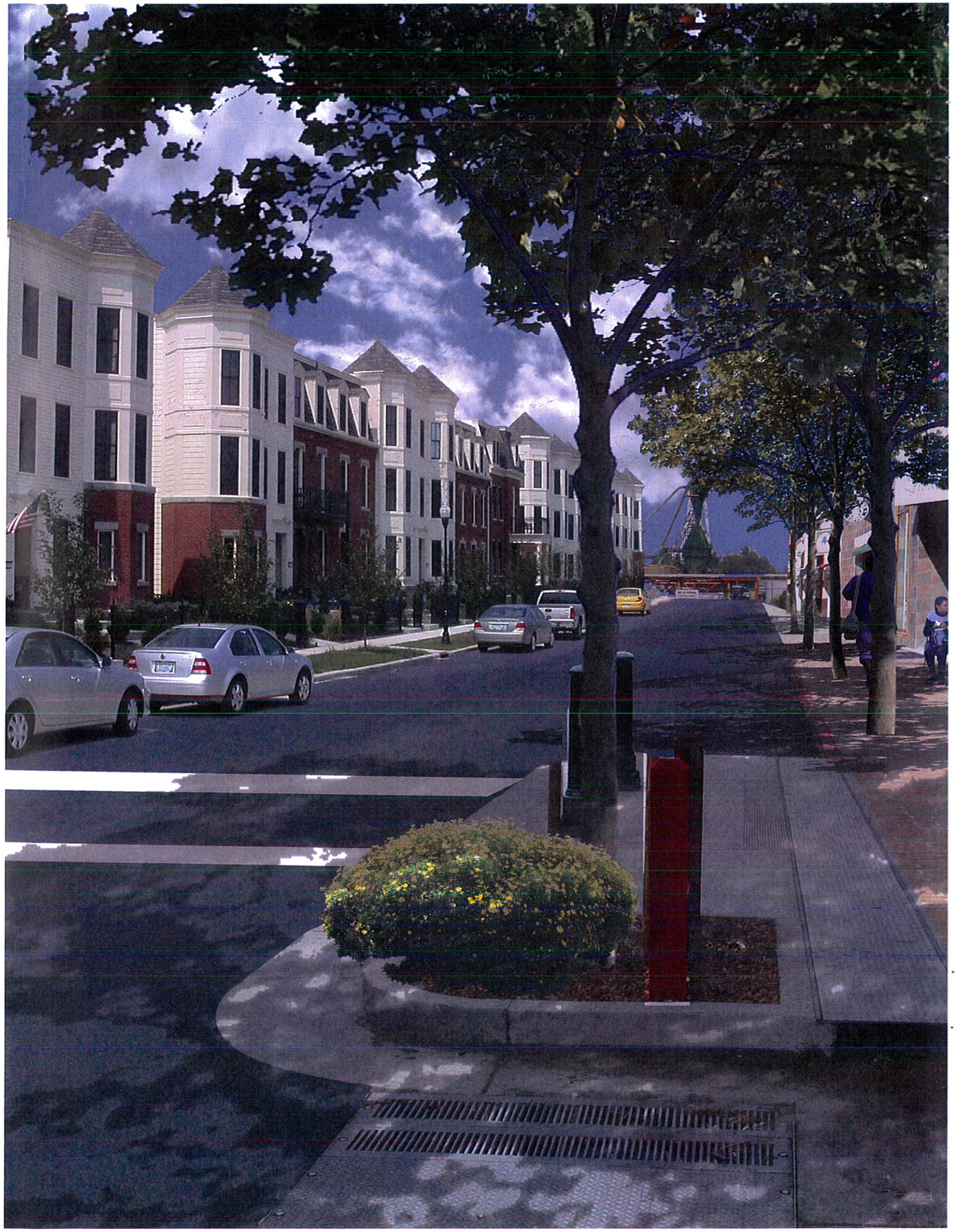
	PHASE 1	PHASE 2	PHASE 3	TOTAL
Dwelling Units	278	399	701	1,378
VMT Reduction (miles/yr)	3,336,000	4,788,000	8,412,000	16,536,000
CO2 Reduction (lbs CO2/yr)	3,669,600	5,266,800	9,253,200	18,189,600
Farmland Preservation (acres)	21	31	54	106
Per HH Savings ($/yr)	3,240	3,240	3,240	9,720
Accidents per year	51	73	128	251
Tax Revenue ($/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 ($)		4,408,990	2,669,960	7,078,950
Blvd Length (miles)	1.25	0.25	0.20	2
Bldgs Removed	0	9	2	11

PHASE 1

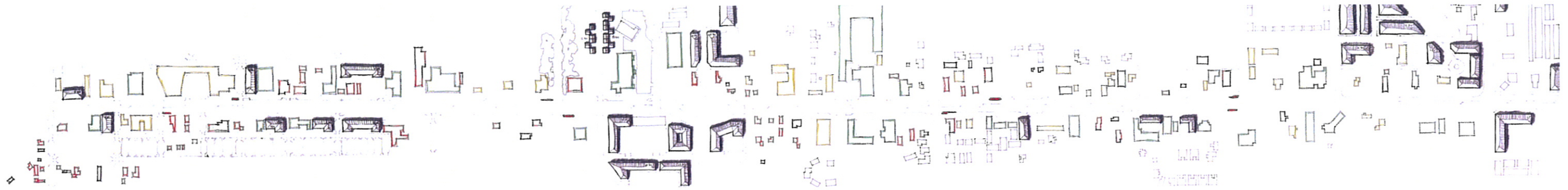
PHASE 2

Design: West


MULTI-WAY BOULEVARD
W/ ACCESS ROADS
SCALE: 1"=10'-0"
10'-0" 7'-0" 9'-0" 5'-0" 11'-0" 10'-6" 10'-6" 14'-0" 10'-6" 10'-6" 11'-0" 5'-0" 9'-0" 7'-0" 10'-0"
140'-0"

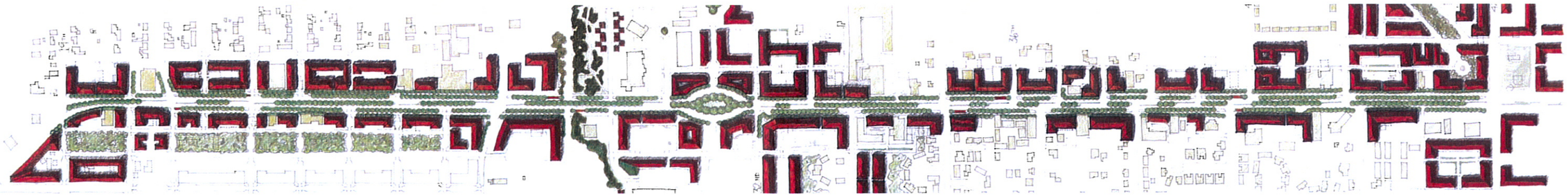


Design: West Section



PHASE 1

PHASE 2



PHASE 3

Design: Center Section

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

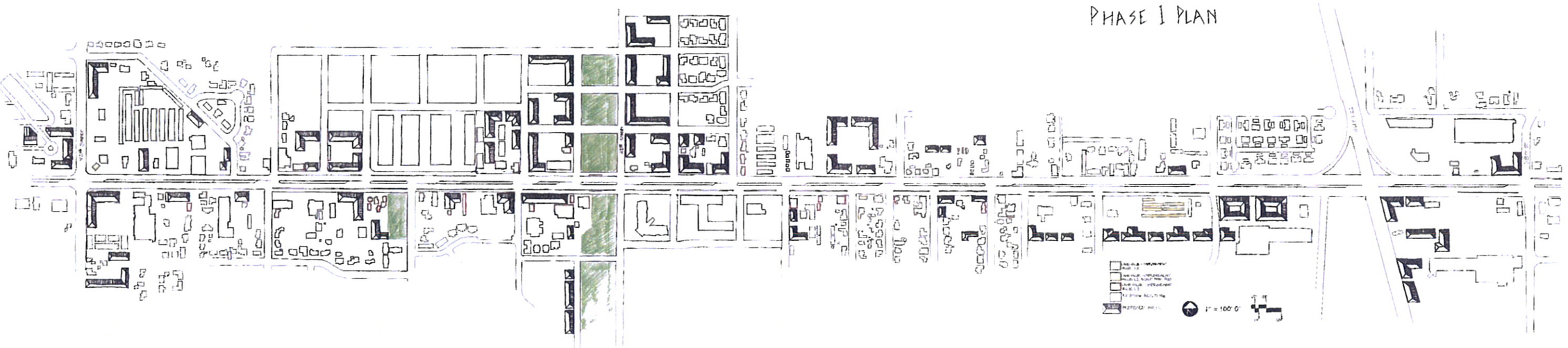
	PHASE 1	PHASE 2	PHASE 3	TOTAL
Dwelling Units	1,000	6,020	NA	7,020
VMT Reduction (miles/yr)	12,000,000	72,240,000	NA	84,240,000
CO2 Reduction (lbs CO2/yr)	13,200,000	79,464,000	NA	92,664,000
Farmland Preservation (acres)	77	463	NA	540
Per HH Savings ($/yr)	3,240	3,240	NA	6,480
Accidents per year	182	1,098	NA	1,280
Tax Revenue ($/yr)	2,000,000	12,040,000	NA	14,040,000
ROW Cost ($)	418,230	6,331,770	NA	6,750,000
Blvd Cost ($)	3,000,000	15,000,000	NA	18,000,000
Total Cost ($)		21,331,770	NA	21,331,770
Blvd Length (miles)	0.30	1.50	NA	2
Bldgs Removed	0	13	NA	13

PHASE 1

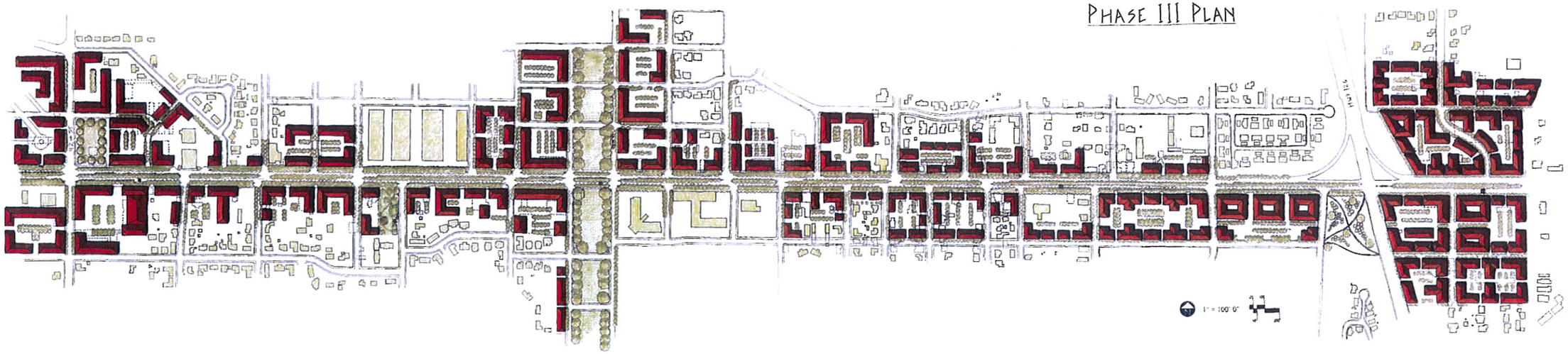
PHASE 2

PHASE 3

Design: Center Section



PHASE 1



PHASE 2

Design: East Section

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
CO2 Reduction (lbs CO2/yr)	8,910,000	9,490,800	13,107,600	31,508,400
Farmland Preservation (acres)	52	55	76	184
Per HH Savings ($/yr)	3,240	3,240	3,240	9,720
Accidents per year	123	131	181	435
Tax Revenue ($/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 ($)		0	0	0
Blvd Length (miles)	2.20	0.00	0.00	2
Bldgs Removed	4	1	0.00	5

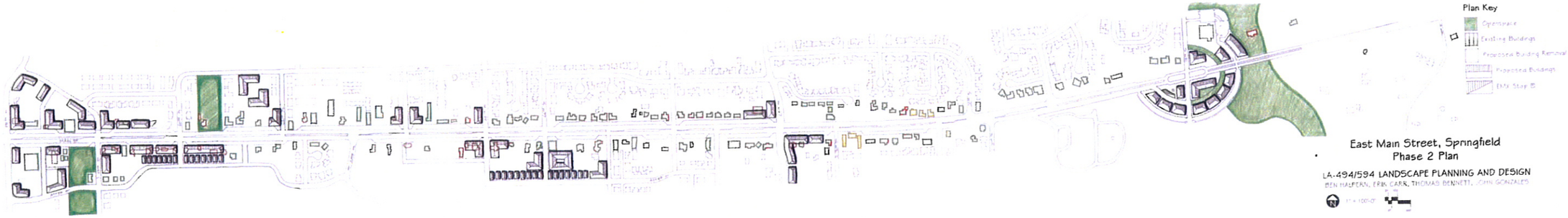
PHASE 1

PHASE 2

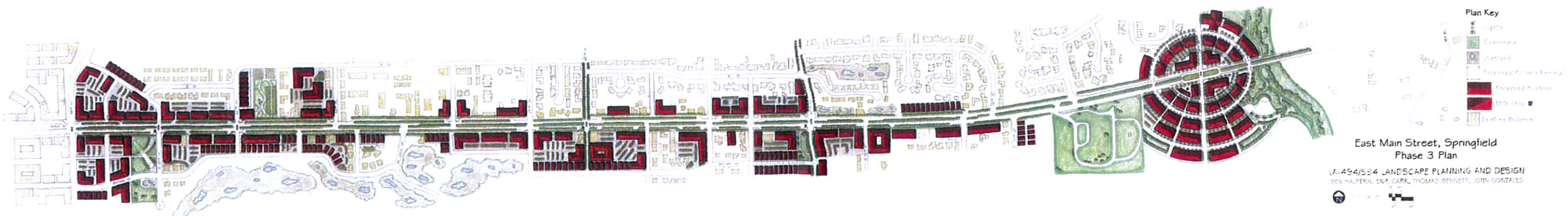
Design: East Section

ONSE EXERAESTO DOLUM DOLOBORTISIM DOLORE VELIQUAT.

PHASE 1



PHASE 2



PHASE 3

Acknowledgements

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f r i e n d s o f e u g e n e

White Paper on Infill and Climate Change
Kevin Matthews
2009.1104

EXHIBIT: 2 AGENDA ITEM: 2
LAND CONSERVATION & DEVELOPMENT COMMISSION
DATE: 11-5-09
PAGES: 7
SUBMITTED BY: Kevin Matthews

Summary — Location Matters

Infill, nodal development, and other increases in residential density around the urban edge — in outlying, high-VMT parts of the urban growth area — are counterproductive, in the sense that they create substantial negative impacts while failing to achieve the positive planned objectives of infill. Given the negative cost-benefit of this type of infill, as a matter of planning policy and implementation, it should be avoided.

To direct residential growth appropriately, while meeting state-adopted emissions reductions targets, the priority focus should be shifted away from infill in existing residential neighborhoods, toward multi-story residential/commercial mixed-use in the large fraction of urban core areas currently zoned commercial.

Geography is Fundamental

Since the land use code update (LUCU) of 2000, our local land use regulations in Eugene have encouraged residential infill. But we know that as well as accommodating some amount of growth, residential infill also causes impacts on established neighborhoods. Clearly we are not encouraging infill for its own sake, but for specific stated reasons.

Infill is encouraged in Eugene in order to meet particular community goals - especially, for the benefits of densification, and compact growth. In the Oregon statewide land use planning framework, these benefits are largely organized around the important and measurable goal of reducing vehicles miles traveled (VMT).

What if there are particular areas of Eugene where it can be shown systematically that infill doesn't contribute to most of the general community benefits of compact growth, and even has negative effects? If there are such areas, what purpose would be served by encouraging or allowing infill in them?

Locating and regulating infill is a balancing act between some general community benefits on one hand, and some local and cumulative impacts on the other hand.

In core residential neighborhoods, the impacts of incompatible infill can be serious: degradation of the character and quality of established cultural and physical fabrics, which are some of the greatest collective assets of Eugene.

In edge residential neighborhoods, the impacts of infill can also be serious: locking in geographically-based increases in the amount of driving per person, in areas where alternative modes of mobility are also difficult to provide efficiently.

It is well known in the smart growth community that residential density tends to encourage walkable, reduced-VMT. Our green community needs to understand the underlying bases for this phenomenon, and use effective land use planning to direct and design growth to help reduce rather than increase greenhouse gas emissions.

Driving Distances and Climate Change

Plans, planning policy, and land use code we develop in Eugene today should be aimed, along with other objectives, at meeting the state adopted goals for greenhouse gas emissions as enacted in Oregon last year (HB3543, signed on 7 August, 2007) of a 10% reduction below 1990 levels by 2020, and a 75% reduction below 1990 levels by 2050.

Substantial additional reductions in vehicle emissions will be needed. The primary additional source or emissions reductions is reduced driving - i.e. reduced VMT, in both the per capita and overall total sense. In fact, the Governor's Climate Change Integration Group reported that, "...Reducing VMT is simply the single most effective way to reduce greenhouse gas emissions". (Final Report to the Governor: A Framework for Addressing Rapid Climate Change, State of Oregon, January 2008, p46)

The "Governor's Vehicle Emissions Workgroup Report" notes that, "The Oregon Department of Transportation's (ODOT) projection for the next ten years is 1.95% average annual VMT growth, non-compounded. VMT growth is a combination of population growth and growth in VMT per capita." (November, 2005, p16)

To achieve emissions reductions, we need to reduce per-capita usage, i.e. VMT, deeply enough to counteract the effect of increasing population.

While the latest climate science suggests that a 75% reduction is probably not a deep enough cut to stabilize the global climate, that goal is far enough away that inherent planning uncertainties make the difference relatively unimportant in the short term. If we can plan now for effective steps to reach state-adopted 2020 and 2050 goals, we will at least be headed in the right direction.

A broadly accepted guiding principle for greenhouse gas emissions is that each sector should plan to accommodate its own share of emissions reductions. Following this principle, the transportation sector itself should target emissions reductions matching the state-adopted percentages.

The transportation sector, heavily dominated by private motor vehicles, represents about half of the total emissions in Eugene.

All credible analyses suggest that predictable emissions reductions through the combination of innovations in vehicle technologies, bio-fuels, and other energy source and distributions developments will contribute substantially, but not nearly enough to reach the adopted goals.

There is a very strong interaction of land use distribution with VMT. The largest single land use component of VMT with regard to residential land use is the distance between each dwelling and the metropolitan center. Residential density as such, and walkable access (1000 feet) to full-service fixed transit are important secondary components.

LCOG traffic studies have confirmed the geographic pattern of VMT in terms or residential locations. The VMT per capita in the city center of Eugene is less then half the metro average. There is an average VMT contour about midway between the city center and the urban growth boundary. Out at the urban growth boundary, VMT varies from 150% to 200% or more of the metro average.

More specifically, residential infill, and subdivisions and other edge development in particular, which are located OUTSIDE the average VMT contour, and farther than 1000' from full-service fixed transit, will tend to INCREASE average VMT per capita.

And in contrast, other development such as multi-story residential/commercial mixed use, which is located INSIDE the average VMT contour, will tend to DECREASE the overall average VMT per capita.

Redirecting residential growth away from infill and into dense, multi-story commercial-residential mixed in core areas presents a huge and vital opportunity to reduce per-capita VMT, even as our metropolitan area continues to grow in population. As since, has been widely observed by climate experts, we need to do EVERYTHING that we feasibly can to lower our emissions, we need to take advantage of this opportunity.

Calculations show that VMT reduction through directing growth to within the average VMT contour will be essential in realistic planning to meet the state-adopted emissions reductions goals.

Some opportunities for large and small subdivisions and compatible residential infill still remain in the large area within the average VMT contour. With full and appropriate measures to safeguard existing neighborhoods, these opportunities can be developed while actually improving the community's carbon footprint. But they are only likely to accommodate a small fraction of projected residential growth.

The real opportunity arrises with the large fraction of land inside the average VMT contour which is zoned commercial. Residential infill represents a relatively small opportunity for accommodating growth, while residential/commercial mixed use in existing commercially-zoned areas represents a relatively large opportunity.

Information on a national scale suggests that high-quality multi-family housing is under-supplied relative to demographic demand trends, while detached single family housing is oversupplied relative to the actual market demand. This national perspective on the relative need for various housing types should be confirmed for Eugene through the ECLA process, along with the various areas and percentages of land/lot types and zoning inside and outside the approximate AVMTC.

Recommendations

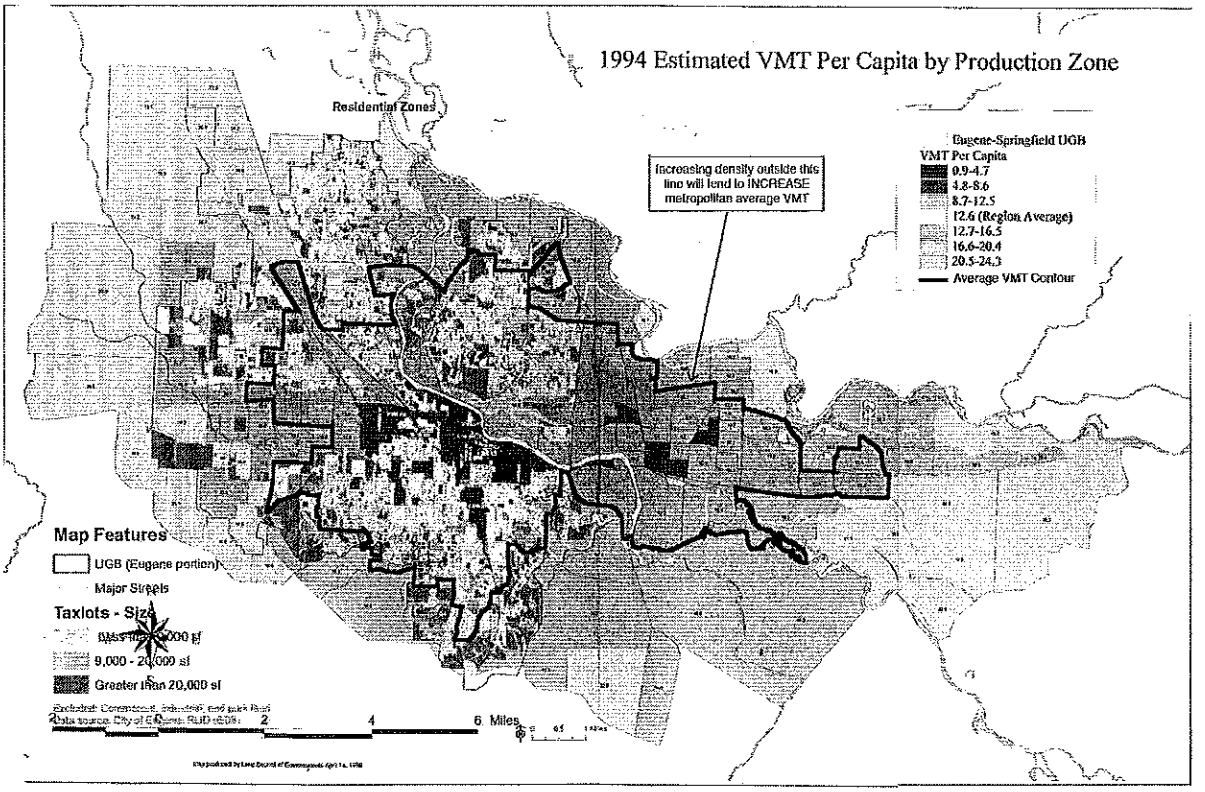

Figure 2. Here, residential lots sizes, an indicator of potential for residential infill and subdivisions, are overlaid on the map of vehicle miles traveled (VMT) per capita. Many of the remaining residential subdivision and infill opportunities in Eugene lie in the carbon-busting area outside the average VMT contour (AVMTC). On the other hand, a great area of commercially-zoned land remains underutilized in the metropolitan core area, where residential/commercial mixed-use development will help reduce overall average driving and VMT. To successfully reduce driving demand over time, the bulk of our residential growth should be targeted to those inner commercial areas.

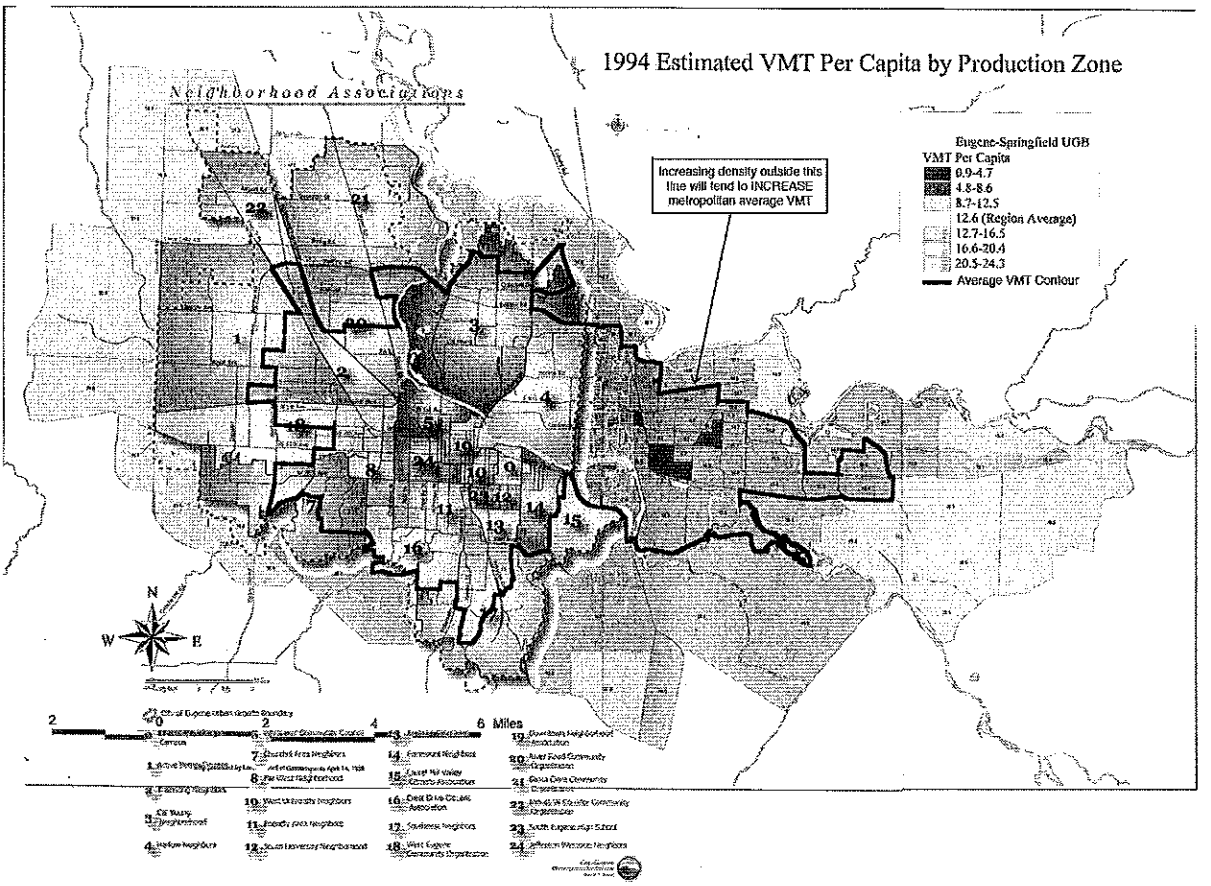

Figure 3. Here, neighborhood association boundaries are overlaid on the map of vehicle miles traveled (VMT) per capita, illustrating the broad footprint of citizen interest in these issues. Most of the established neighborhood areas of Eugene straddle the average VMT contour (AVMTC), with just a few neighborhoods lying entirely in the core area, or entirely in the outer area.

###

Draft 20091104-01 - KMM - FoE Board consensus text - Draft illustrations