

# STREETCAR-DEVELOPMENT LINKAGE: THE PORTLAND STREETCAR LOOP

Revised Draft

Prepared for:

City of Portland  
Office of  
Transportation

February 2008



**E. D. Hovee & Company, LLC**

Economic and Development Services



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# Streetcar-Development Linkage: The Portland Streetcar Loop

Revised Draft

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# I. INTRODUCTION

Starting in the mid to late 1800s, streetcar systems were implemented across America. Real estate owners and developers sought to increase sales by connecting their newly-built homes to Central City employment and retail via streetcar transit. Mass marketing of the automobile deflected attention from – and investment in – these systems in the 1900s in all but a handful of cities, including Toronto, New Orleans, Philadelphia and San Francisco.

In 2001, Portland opened a new Central City streetcar line, the first modern streetcar system built in America. Since that time, America appears to have collectively recalled the power of streetcar to support and compliment land use development, and five years later more than 80 American communities were planning for streetcar implementation. Portland is now seeking funding for the extension of its 4-mile streetcar line to a Portland Streetcar Loop encompassing both the west and east sides of its Central City.

## DEVELOPMENT ORIENTED TRANSIT

The popularity of streetcar is attributed in part to its relative low cost and ease of construction in comparison with light rail. But perhaps even more so, streetcar's success can be attributed to the notable increases in development that have accompanied implementation in the handful of cities that now have demonstrated *post-streetcar development* track records.

Even more than with light rail, the economic development benefits of streetcar investment appears traceable to streetcar's fine-grained scale and intimate relationship with the street environment. If light rail systems function as highways and arterials, streetcar systems function as the *local streets*. Interest in bringing streetcar to more cities – and the higher density development with which it is associated – is constrained only by funding availability.

## FTA SMALL STARTS FUNDING

In 2005, the U.S. Congress created a *Small Starts* program to fund projects such as streetcar, bus rapid transit and smaller light rail systems. The program – authorized in the Federal Transit Administration – is similar to the existing New Starts program but targets smaller projects costing less than \$250 million and receiving no more than \$75 million in federal funds. The intent of Congress was to support fixed guideway projects that were lower in cost and to simplify the federal review process.

FTA funding criteria has relied upon a cost-effectiveness rating based substantially on travel time savings. Transit System User Benefit (TSUB) is calculated by determining total benefit and dividing into the total cost of the project. This funding methodology does not recognize or reward the ability of transit investment to influence travel patterns by influencing the built environment, and in doing so, increase transit ridership.

FTA has proposed that Small Starts projects be rated for funding with the same TSUB cost effectiveness measure. The interim rules require that a medium rating on TSUB be achieved for a project to be eligible for funding.

Enabling legislative also includes economic development and proposed rulemaking as a factor in considering projects for funding; the FTA lists “positive effect[s] on local economic development” as one of its three primary criteria. This report suggests a methodology which with to implement this intent.

## MEASURING ECONOMIC DEVELOPMENT

This report is intended as a discussion paper for evaluating the *streetcar-economic development nexus* more broadly across the U.S. It ultimately suggests five quantitative measures with which to evaluate streetcar projects seeking federal funding support.

- The first part of this report addresses the relationship between transit and development – particularly high density development – and the evidence that exists for the *streetcar-development linkage as experienced* to date in Portland, Oregon. This analysis also describes and quantifies five public benefits that high density development supports.
- The second part of this report suggests how ‘economic development’ – operationalized as real estate investment – *can be measured* for proposed Small Starts projects both now and in the future. Three criteria are suggested for evaluating streetcar projects that encompass both the regulatory and market environment. These criteria encompass the basic preparation and research that cities can take to ensure that transit investment is leveraged to the greatest extent possible – to truly yield the public benefits including ridership gains and containment of suburban sprawl that higher density urban development offers.
- Proposed measures include two metrics related to higher density development: global warming and trip reduction. High density development – which streetcar supports – has enormous and measurable impacts on these two key factors that are not currently considered in the FTA evaluation criteria. Calculations are offered on the amount of vehicle miles traveled (VMT) by residents that have chosen to live in the higher density environment supported by streetcar.

For the economic development criteria portion of the report, details are provided on an illustrative basis for the Portland Streetcar Loop Project, which is now seeking funding. This project will extend tracks, stations and service from the west side of the Willamette River (including Portland’s historic downtown) across the existing Broadway Bridge to serve the eastern half of Portland’s expanding Central City urban environment. The expanded project will serve 18 new and 16 existing stations (and station pairs), bringing new service to the eastside and also essentially doubling service frequency for westside stations.

Two appendices are provided with this report. Appendix A briefly profiles E. D. Hovee & Company, LLC as preparers of this document.

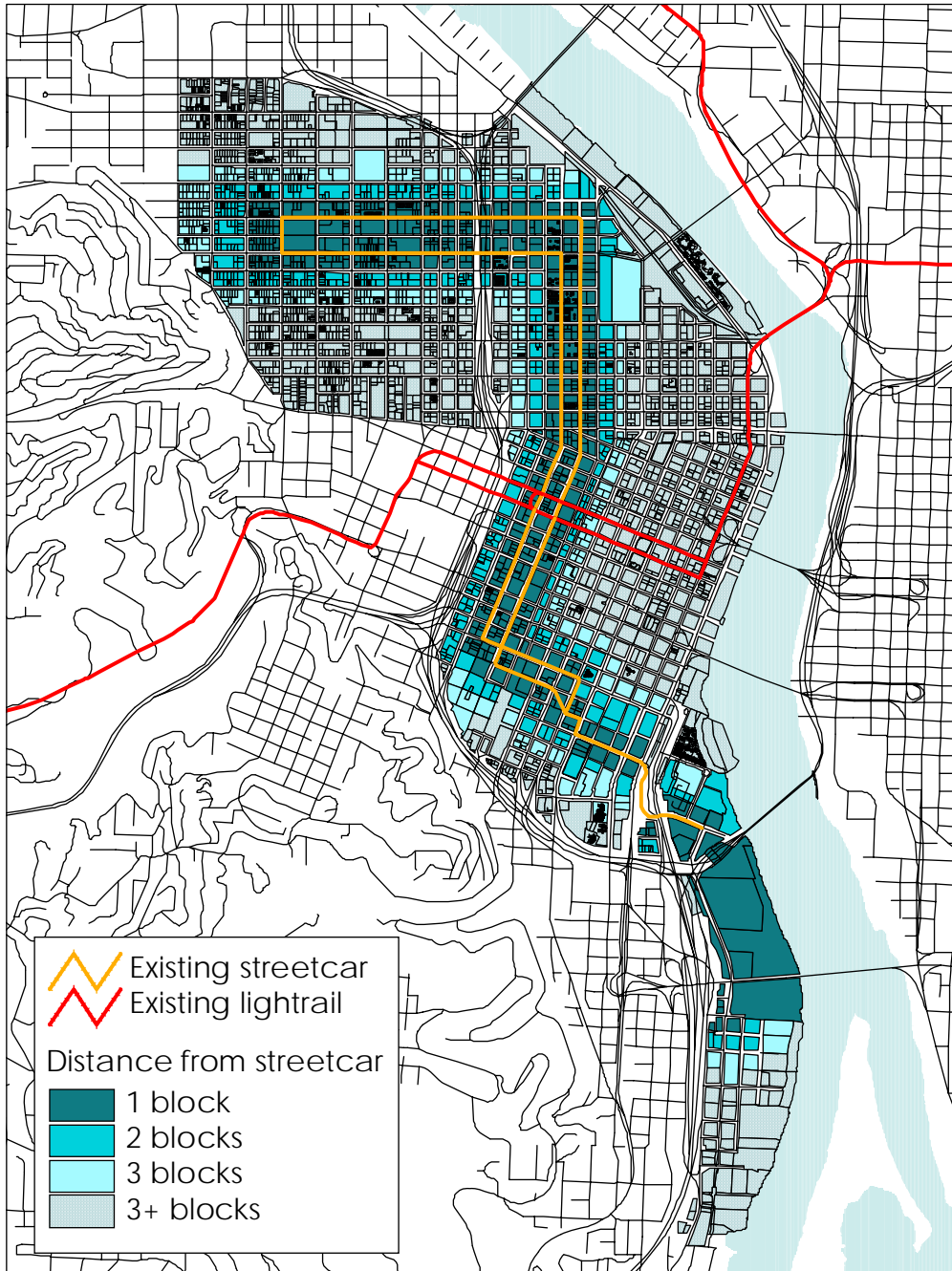
## II. STREETCAR-DEVELOPMENT EXPERIENCE

Portland's westside streetcar line was committed in 1997, constructed in 2001, and extended three times by 2006. The now 10 years since initial funding was committed yields a track record of investment and development activity through which the impacts of this investment can be assessed. The observed relationship between Portland Streetcar investment and Portland's built environment supports the conclusion that streetcar promotes adjacent development at urban densities.

Portland's streetcar experience has demonstrated the importance of looking beyond *transit oriented development*. Because of streetcar's role as a development catalyst – not just at station area nodes but along an entire transit corridor – the more appropriate term may be *development oriented transit*. This chapter lists evidence gathered to date of this relationship.

A second focus of this chapter is to outline the broader community benefits of higher density development. These benefits can be conceived of as both public and private return on investment (ROI), and accrue to a city or neighborhood to the extent that high density development occurs.

Figure 1. Westside Streetcar Alignment with Area of Development Impact



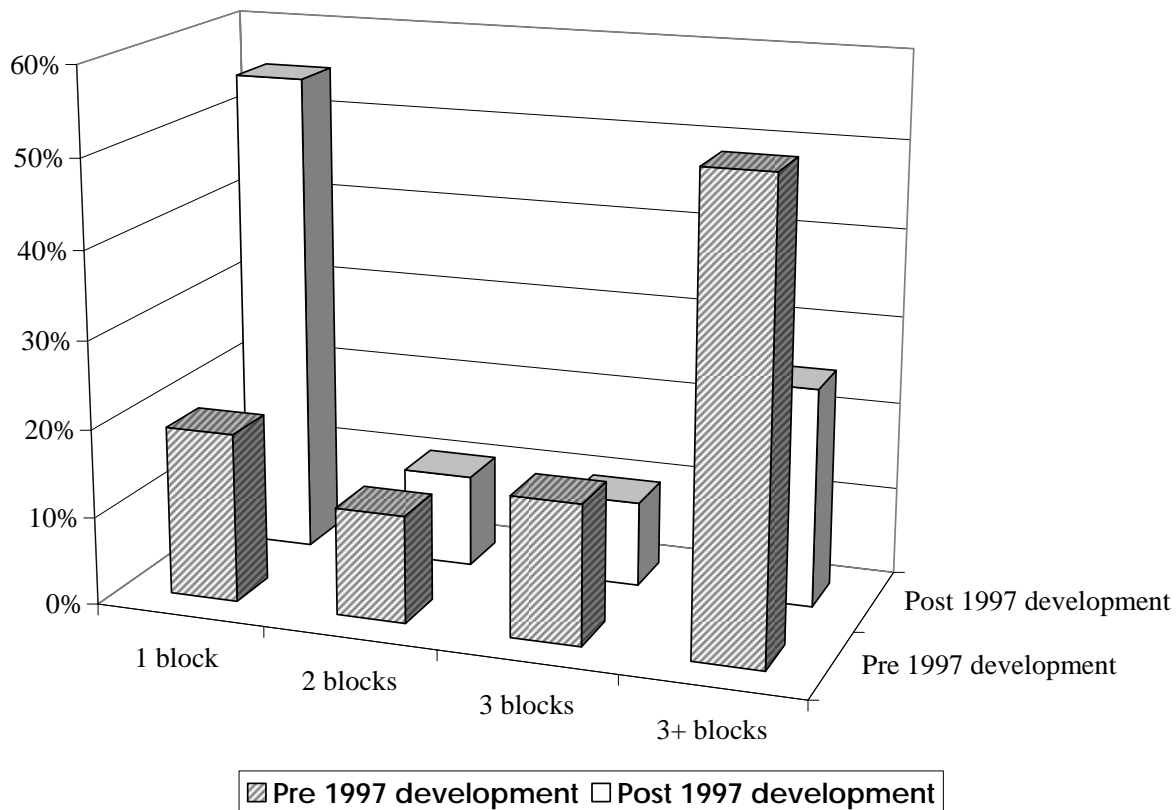
Source: 2005, *Portland Streetcar Development Impacts*, E. D. Hovee & Company, LLC.

## A. STREETCAR PROMOTES HIGH DENSITY DEVELOPMENT

1. *Documented Results:* In Portland, tax assessor records indicate that post-streetcar development clustered near the alignment and achieved higher densities as proximity to the alignment increased.
2. *Developer Confidence:* Interviews with Portland developers and property owners reveal the development community's confidence in the catalytic potential of streetcar investment. Developer confidence may be the first and foremost indicator of successful development oriented transit investment.
3. *Property Owner Participation in Streetcar Investment:* Property owners expect that streetcar investment will increase in land value, as evidenced through the self-imposed taxing districts that have funded five phases of streetcar investment to date.

**1. Documented Results:** A 2005 study of real estate development within streetcar-served neighborhoods tracked Portland's development trends (pre- and post-streetcar) based on distance from the streetcar alignment.<sup>1</sup> It found that after streetcar investment was secured, lots within *one-block* of streetcar captured 55% of all new development within neighborhoods through which streetcar passed.

**Figure 2. Percent of New Development by Distance from Streetcar**



Source: E. D. Hovee & Company, LLC, *Portland Streetcar Development Impacts*, prepared for Portland Streetcar, Inc. November 2005.

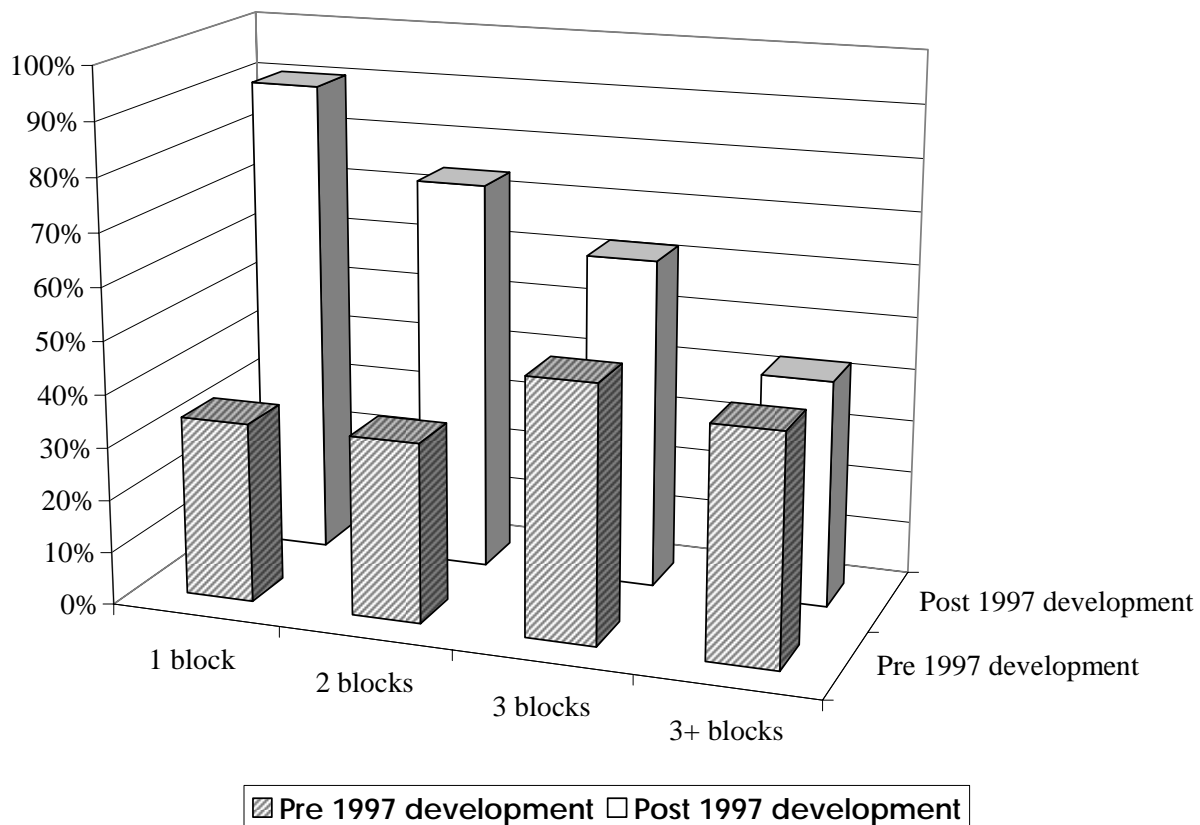


Post-streetcar development was also much denser than development further from the streetcar line. Within one block of the streetcar line, post-streetcar development achieved 90% of the Floor Area Ratio (FAR) the zoning allowed.

The ratio of development experienced to zoned capacity steadily decreased as distance from streetcar increased – to only 43% of FAR for development more than three blocks from streetcar – despite a consistent FAR limit across all neighborhoods considered of around 6.0.<sup>2</sup>

The total estimated value of development along the westside alignment between 1997 – the year in which funding was secured – and January 2006 is more than \$2.4 billion.

**Figure 3. Density of Development by Distance to Streetcar**



Source: E. D. Hovee & Company, LLC.

While this convergence of streetcar investment and high density development does not assert causality – and statistical research methods such as regression/hedonic modeling have not yet been employed – it is increasingly clear that more than chance has influenced Portland’s development trends. This observation is based on the strength of the statistical evidence to date combined with what private developers and investors responsible for this change have to say.

Along with streetcar, key factors in recent Portland development have included development agreements with major property owners and consolidated land ownership, both of which

accompanied the first wave of development activity along the alignment. In Portland today, it is hard to imagine that in 1994 – when the westside alignment was first adopted – zoning within key downtown neighborhoods was a mere 14 units per acre and a market assessment projected potential condo absorption at just 30 units per year.

**2. Developer Confidence:** Over the past decade, the Portland Streetcar project has been recognized by the real estate and development community as a significant catalyst for redevelopment in Portland’s extended downtown core area. Tax assessor records illustrate the catalytic role that streetcar has played to stimulate higher density urban development over the last decade. But the #1 consideration is: what does streetcar mean for developers investing in redevelopment and new construction of residential, commercial and mixed use space?

Interviews with property owners and developers along Portland’s existing westside line and planned eastside line consistently indicate that streetcar investment supports development through three primary factors:

- *Timing:* Property owners and developers are willing to invest in an area earlier in the redevelopment trajectory because they recognize streetcar as a sign of public-private sector investment confidence. The investor is more comfortable putting debt and equity capital where others have already put their money. Even when private re-investment is in its early stages, streetcar investment facilitates developer comfort and confidence.
- *Scale:* Increased density means increased investment, and brings greater numbers of households and jobs to a site. Developer and property owner interviews indicate that streetcar investment increases developer comfort with larger buildings and the associated risks (more units to absorb, higher construction costs).
- *Pricing:* Developers indicate willingness to bring higher-end products to the market with the presence of streetcar. With an initial Central City alignment in place and redevelopment along the entire length now realized, developers have judged that streetcar’s convenience, cost savings and cachet translates into consumer willingness to pay higher rents and sales prices. Increasingly, transit convenience makes it more possible to forego an automobile, freeing discretionary financial resources for a more urban lifestyle. These new market trends, in turn, draw yet higher density projects to market within a shorter time frame.

Members of Portland’s development community repeatedly express their confidence in the ability of streetcar to change the built environment. This is evidenced both in Portland’s westside (Downtown, NW 23<sup>rd</sup>, Pearl and South Waterfront Districts) and eastside, for which the extension of the Streetcar Loop is planned.

Developers and property owners near the eastside alignment of the planned Portland Streetcar Loop are incorporating streetcar into their plans for their own properties and for larger neighborhoods. Examples of property owners’ comments on the planned eastside alignment are reported below.

*"From a development standpoint, streetcar is extremely important. I knew [streetcar was planned] when I bought the property years ago. Any 21st Century development comes down to transportation."*

*"Streetcar is an enhancement to the building's success and vice versa. The developer isn't opposed to creating units without parking because of the presence of streetcar."*

*"Streetcar is essential for the hotel and the development of the Convention Center district. The district has to grow for the health of the convention center and its future bookings, and streetcar is integral to that."*

**3. Property Owner Participation in Streetcar Investment:** Lastly, adjacent property owners to the planned eastside alignment have asserted their conviction that streetcar investment increases property value by shouldering \$15 million of the cost of streetcar development. This parallels westside experience where property owners have funded \$19.4 million of the streetcar investment to date.

**Figure 4. Westside Property Owner Contributions to Streetcar**

Phase	Total Cost	LID Total	Percent LID	Assessment Methodology
Phase I & 2	\$56.9	\$9.6	17%	Frontage + rate x total value, 2 zones, rates vary by land use
Phase 3a	\$14.4	\$3.0	21%	Rate x total value with minimum
Phase 3b	\$15.8	\$2.0	13%	Rate x total value x distance factor
Phase 3c	\$13.4	\$4.8	36%	Rate x land area x distance factor
	\$100.5	\$19.4	19%	

Note: Dollars in millions.

Source: Portland Department of Transportation, E. D. Hovee & Company, LLC.

Local property owner investment has and will continue to occur through the property assessment mechanism of a Local Improvement District (LID). For the eastside, this investment represents over 10% of the project's anticipated cost.

## B. DENSITY YIELDS PUBLIC & PRIVATE RETURN ON INVESTMENT

The high density development observed along Portland’s existing westside alignment is associated with numerous public benefits that can be understood as a return on the public’s investment in streetcar (ROI). These benefits include:

1. Reduced auto dependence by promoting *the trip not taken*.
2. Reduced *infrastructure* costs by reducing suburban greenfield development.
3. Reduced *sprawl* (land consumption).
4. Reduced *carbon footprint* resulting both from increased density of development and reduced auto dependence.
5. Increased *business and job generation* through attracting the *creative class* demographic to which future and ongoing economic vitality is linked.

**1. Denser Development Reduces Auto Dependence:** The relationship between land use and mode split – whether residents make trips by autos, bikes, streetcar or buses – is well established in Portland and throughout the U.S. The following table documents how mode split varies by transit availability and land use type within the Portland metro region.

Figure 5. Mode Split by Development Type

Land Use Type	Mode Split: Auto	Mode Split: Walk	Mode Split: Transit	Mode Split: Bike	Mode Split: Other	Daily Vehicle Miles per Capita	Auto Ownership per Household
Good Transit / Mixed Use	58.1%	27.0%	11.5%	1.9%	1.5%	9.8	0.9
Good Transit Only	74.4%	15.2%	7.9%	1.4%	1.1%	12.4	1.5
Remainder of Multnomah Co.	81.5%	9.7%	3.5%	1.6%	3.7%	17.3	1.7
Remainder of Region	87.3%	6.1%	1.2%	0.8%	4.6%	21.8	1.9

Source: Metro 1994 Travel Survey.

Residents of *mixed use neighborhoods* (integrated commercial and residential development) with *good transit service* are less likely to use autos than are residents with good transit service but no mixed use development: 58 versus 74 percent of trips are auto-based. Region-wide, the average percentage of auto-based trips across all neighborhoods is even higher, at 87%.

In mixed use neighborhoods, residents are almost twice as likely to walk, but they are also 45% more likely to use transit. This is because mixed use neighborhoods bring trip destinations within closer proximity, making non-auto modes of all kinds more convenient and attractive. Avoiding the need for auto-based travel can be referred to as *the trip not taken*.

Transit investment – and particularly fixed transit investment such as streetcar – creates a positive feedback loop, in which streetcar encourages denser development, which encourages transit usage and other non-auto modes of transportation, which facilitates yet denser urban-scale development.

Total daily vehicle miles per capita decrease significantly for residents living in mixed use, transit-rich neighborhoods: at 9.8 miles, it is 26% lower than transit-rich but non mixed use neighborhoods and 122% lower than the regional average. When this savings is compounded by the number of households located near streetcar, the impact on regional congestion, CO<sub>2</sub> omissions and air quality is significant.

A 2006 Portland Office of Transportation study *Portland Streetcar Development Oriented Transit* reported that 7,248 housing units had been constructed along Portland’s westside streetcar line by the end of 2005. The following table illustrates the VMT savings of locating these households within a mixed use, transit-rich environment as opposed to an ‘average’ suburban environment.

**Figure 6. VMT Reduced by Development Type (Portland Westside Results)**

	High Density Environment	Suburban Environment
No. of Households	7,248	7,248
Total Persons*	15,946	15,946
Avg. Vehicle Miles/Day/Capita	9.8	21.8
Number of Days	315	315
Vehicle Miles/Year	49 million	109 million
<b>Vehicle Miles Savings/Year</b>	<b>60 million and growing</b>	

\*Note: Assumed average households size of 2.2 persons.

Source: 1994 Metro Travel Survey, E. D. Hovee & Company, LLC.

The urban housing that has been developed within streetcar-served neighborhoods over the past few years – within six years of streetcar opening – has reduced vehicle travel on Portland’s roadways by an estimated 70 million miles annually. This savings both reduces congestion and improves air quality.

The true cost of congestion is just beginning to be documented and quantified. A 2005 study by the Economic Development Research Group concluded that congested transportation networks have a significant impact on Portland’s transportation-dependent economy, including the movement of freight.

Even with an anticipated \$4.2+ billion in planned investments on the region’s transportation capital improvements project list over the next 20 years, increased congestion was calculated to cost the Portland metro region \$844 million annually by 2025 and 118,000 hours of vehicle time daily. Investments in transportation above what has been planned are estimated to generate an economic benefit (or ROI) of \$2 for every dollar spent.<sup>3</sup>

**2. Denser Development Reduces Infrastructure Costs:** The Portland metro area is expected to add one million new residents by 2030. This is equivalent to adding two new cities the size of Portland to the region. The cost of providing infrastructure for household growth varies dramatically according to where these households locate.

One option is to locate households in greenfields, converting rural land uses to urban. The City of Damascus – a newly incorporated city on the eastern edge of the metro region – is an example of this approach, and is currently struggling to finance infrastructure for its 12,200 acres to accommodate a projected 24,900 new households. Damascus’s transportation network alone is estimated to cost between \$1.9 and \$2.8 billion.

In contrast, westside streetcar investment of \$100 million to date was instrumental in bringing over 7,000 new households within three blocks of the alignment (as of January 2006). On a cost per added household basis, streetcar investment was \$14,000, an incremental number that falls as new units are constructed. In contrast, transportation infrastructure to serve the City of Damascus is estimated to cost between \$76,000 and \$112,000 per household.

**Figure 7. Infrastructure Cost by Development Type (Westside Alternative vs. Suburban Alternative)**

	Streetcar Alignment	Damascus	
Number of households	7,248	24,952	
Public investment	Actual	High	Low
Transportation infrastructure	\$100,000,000	\$2,800,000,000	\$1,900,000,000
Cost per household	\$14,000 and falling	\$112,000	\$76,000

Source: Portland Office of Transportation, *Portland Streetcar Development Oriented Transit*, January 2006, [www.co.clackamas.or.us/dtd/damascus/](http://www.co.clackamas.or.us/dtd/damascus/), E. D. Hovee & Company, LLC.

Capturing future growth within mixed use, transit-served neighborhoods will best preserve our transportation infrastructure and reduce the staggering – and unfunded – costs associated with maintaining and expanding the transportation networks fundamental to continued economic growth for the city and the metro region.

**3. Denser Development Limits Sprawl:** In addition to reducing infrastructure costs, denser communities conserve land. Housing developed along Portland’s westside streetcar alignment uses a remarkable 1760% less land than will planned housing development within the newly incorporated City of Damascus.

**Figure 8. Land Use by Development Type (Westside Experience vs. Suburban Alternative)**

	Streetcar Alignment	Suburban Environment
Households	7,248	7,248
Households per Acre	137	7.8
	Average realized units per building	Damascus average lot size is 5,600 square feet
Acres Required	53	932
<b>Acres Saved</b>	<b>879 and growing</b>	

Source: Portland Office of Transportation, *Portland Streetcar Development Oriented Transit*, January 2006, [www.co.clackamas.or.us/dtd/damascus/](http://www.co.clackamas.or.us/dtd/damascus/), E. D. Hovee & Company, LLC.

The average number of units within the 52 residential buildings developed within three blocks of Portland’s existing westside streetcar alignment is 137. Some of these buildings are smaller than a city block (which is roughly one acre), so this unit count per acre is conservative. In contrast, average planned lot size within Damascus equates to fewer than eight housing units per acre.

When these densities are multiplied by the units realized so far along the westside streetcar alignment, the resulting land savings is enormous. If streetcar-associated housing were located in greenfield development, it would have required an additional 879 acres, as opposed to the (maximum) 53 acres it now occupies.

**4. Denser Development Reduces Carbon Footprint:** A carbon footprint represents the total amount of carbon dioxide (CO<sub>2</sub>) and related greenhouse gases emitted over the full life cycle of a product or service such as transportation or real estate development. Carbon footprint describes both construction carbon (carbon released through the manufacture, shipment and installation of materials) and operational carbon (released in heating, cooling, running electrical appliances, etc.).

Initial modeling indicates significant carbon savings for high density urban development compared to traditional suburban development: a 64% savings in transportation and 45% CO<sub>2</sub> improvement associated with an urban versus suburban development footprint.

**Figure 9. Carbon Footprint by Development Type  
(Illustrative Westside Experience vs. Suburban Alternative)**

	High Density Environment	Suburban Environment
<b>Residential Footprint</b>		
Annual Tons of CO <sub>2</sub> per Household	5.9	17.1
Annualized Per Household Savings	11.2	
Number of Households	7,248	7,248
Annual Tons of CO <sub>2</sub>	43,007	118,466
Annualized High Density Savings	75,459	
% High Density Savings	64%	
<b>Employment Footprint</b>		
Annual Tons of CO <sub>2</sub> per Job	5.1	9.2
Annualized Per Job Savings	4.1	
Number of Jobs	11,500	11,500
Annual Tons of CO <sub>2</sub>	14,016	25,283
Annual High Density Savings	11,267	
% High Density Savings	45%	

Note: Job growth was derived from 4,600,000 square feet of recorded commercial building development between 1998 and 2005, with an assumed job density of 400 square feet per employee. 25% of the demonstrated job growth has been attributed to streetcar investment.

Source: E. D. Hovee & Company, LLC.

Combined savings vary with environment, according to the mix of commercial and residential development realized. Carbon savings specifically derive from:

- Lower daily VMT per resident and employee;
- Less land and building area used for housing and commercial development;
- Reduced ongoing energy consumption with urban versus suburban densities of development; and
- Potential for further carbon reduction (beyond what is calculated to date) if future streetcar investments are accompanied by commitment for purchase of *green energy*.

**5. Denser Development Facilitates Economic Development.** Dense development – a key to pedestrian-filled streets and successful mixed use neighborhoods – is increasingly recognized as an economic generator because it attracts both residents and businesses who want to live in quality, vibrant communities. The idea that lifestyle can drive economic development was heralded by Richard Florida through this introduction of the ‘Creative Class.’ Florida attributes this newly coined demographic sector – and its lifestyle preferences – as the key driving force for post-industrial economic development in the USA.<sup>4</sup>

Economist Joe Cortwright operationalized the Creative Class concept by focusing on college-educated 25 to 34 year olds as the people creating the new ideas that help drive the economy forward, and documented his research in his 2004 study *The Young and Restless*.<sup>5</sup> This age group has completed its education and is pursuing careers; beyond this age, the likelihood of moving decreases sharply. If a region can attract young talent, it is likely to keep it. Cortright reports that Portland is succeeding in attracting this demographic cohort: between 1990 and 2000, this age group increased by 12% in Portland, in sharp contrast to its overall national decline of 8%.

Cortright conducted focus group in six American cities – Philadelphia, Memphis, Providence, Richmond, Tampa and Portland – and found that Portland elicited the most positive reviews:

*“Its urban fabric has the special appeal, with participants citing the city’s size, walkability, public transportation, bike-friendliness, distinctive neighborhoods and independent businesses as contributing to a feeling of community, manageability and safety.”*

The focus groups generated themes to attractive communities, including the theme of *Vibrant Places*. Cortright’s report states that the desire for Vibrant Places is expressed in many different ways, but always includes a successful downtown.

*“Many mentioned their desire for a city animated by its walkability and mixed uses which give people reasons to walk. To supplement a city’s walkability was the desire for mass transit. Based on the comments of focus group participants, good public transit seems to be required for a city to be judged the complete package for this demographic.”*

Cortright’s study concludes that the region’s growth in young, college-educated adults has been fueled by the attractiveness of the Central City and Washington County, particularly the denser



inner neighborhoods – both in and near the Central City area. Young adults generally, and college-educated 25 to 34 year olds in particular, are now disproportionately represented in close-in Portland neighborhoods; residents within three miles of the city center are 50% more likely to be 25 to 34 years old.

Denser development – and the walkability, mix of uses, and supportive transit that it entails – is a proven attraction for older empty nesters and now is increasingly valued by young professionals. Attracting these professionals is an important economic development strategy for America's cities. This is especially true in an impending era of stagnant or shrinking labor force availability as baby boomers begin to exit the work force.

### III. STREETCAR-DEVELOPMENT FUTURES

The reintroduction of streetcar to America's cities is so recent that there has not been time to consider long-term opportunities. Is streetcar a one-shot experience to link high amenity attractors – tourist, residential, retail, and institutional? Or should these initial streetcar investments be considered as step one to a more systematic, city- or region-wide approach to neighborhood based transit service?

The experience of cities with existing systems – notably San Francisco and Philadelphia – clearly suggest that streetcar is best viewed not as a single alignment, but in the context of a broader network of transportation accessibility and associated economic development opportunity.

This is clearly the path the City of Portland is currently pursuing:

- As its next initiative, Portland has proposed a 3.35-mile extension of the existing westside alignment across the Willamette River to the eastside, creating a Streetcar Loop.
- The city has embarked on an even more ambitious long-term planning program – a Portland Streetcar System Plan – outlining a possible streetcar network with multiple alignments as integral to the city's transportation and economic development future.

Using the Portland experience as a *springboard* for discussion, this chapter suggests criteria with which proposed streetcar projects can be ranked according to their potential economic development impact.

The private investment that cities leverage through their investment in streetcar may prove as diverse as the cities, neighborhoods and business districts that streetcars can serve. However, there are fundamental steps that cities can take to ensure that the regulatory environment is prepared to encourage investment. Beyond this, an independent assessment of an area's *market readiness for investment* is the best available means to estimate market response to streetcar.

Portland is investing in additional streetcar infrastructure to transform its current westside alignment into a complete loop encompassing both the west and east sides of its Central City. This chapter includes responses to the proposed criteria for the Portland Streetcar Loop. Responses indicate that further investment in Portland's streetcar infrastructure is a sound financial strategy: Portland streetcar is positioned to succeed in generating economic development returns.

Four primary criteria are proposed:

- How does streetcar investment promote and expand employment centers;
- Does the regulatory environment uniformly impel higher density development;
- Do market conditions support higher density development; and
- What public incentives beyond transit are available to support high density development?

## A. PORTLAND STREETCAR LOOP WILL ADVANCE EMPLOYMENT CENTERS

**1. The Streetcar Loop Connects Regional Employment Centers with Significant Development Potential.** The existing westside alignment runs through the west end of downtown Portland, connecting two major medical institutions, two universities, and two significant tracks of largely vacant and redevelopable land. The proposed Portland Streetcar Loop will both extend and reinforce the benefits generated through the westside alignment.

The area within ½ mile of existing westside streetcar stations and planned eastside streetcar stations accommodated 204,800 jobs in 2005 and is expected to support 217,300 jobs by the year 2011. Job density in 2005 within this area was 37,923 jobs per square mile, forecast to increase to 40,240 jobs per square mile in the year 2011. Employment within this area represents virtually every economic sector.

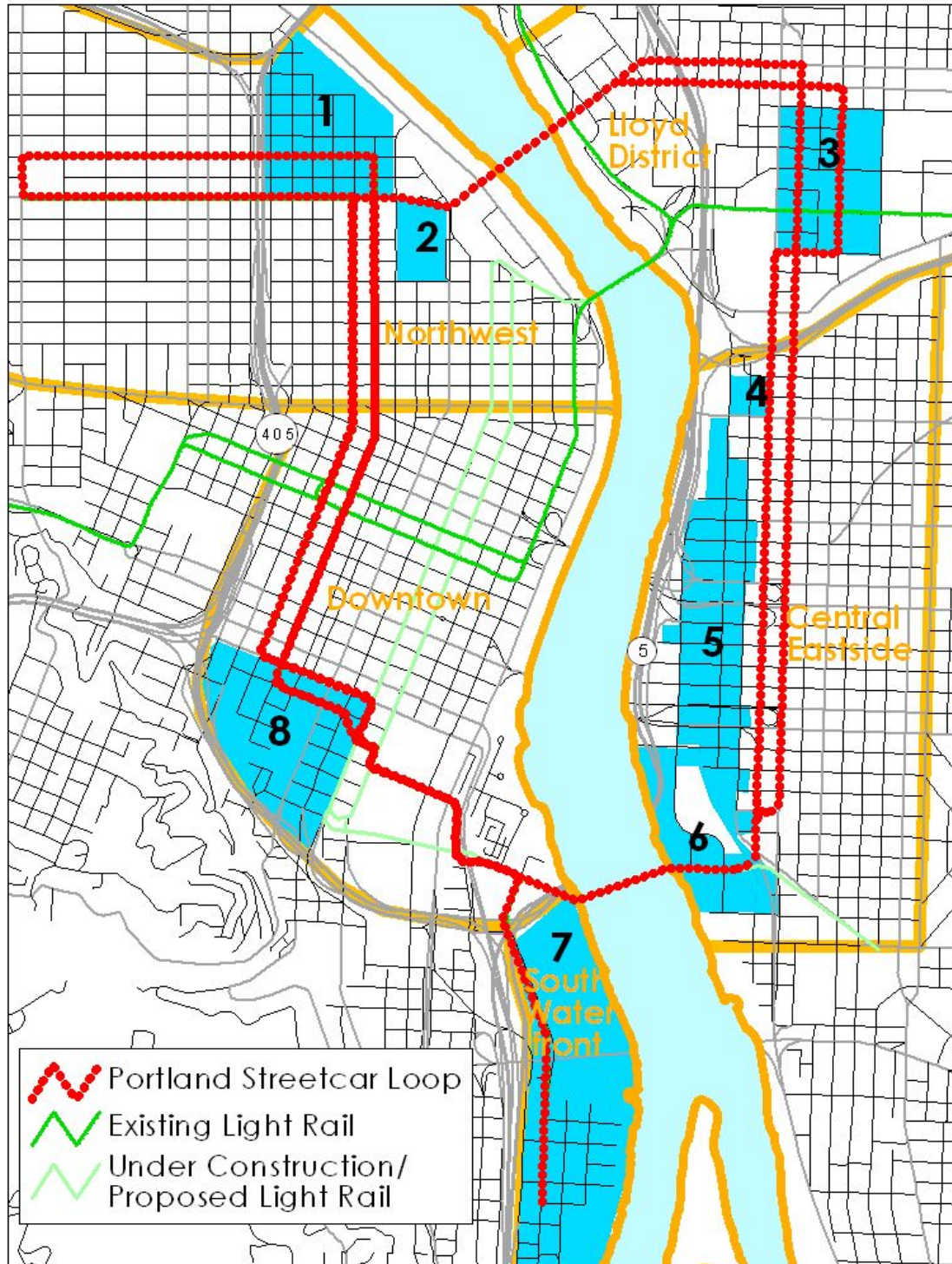
The Portland Streetcar Loop will connect the following Central City inner neighborhoods, each of which is a significant employment center:

- The Downtown Core, encompassing the region's highest densities of government and private offices at just under 17 million square feet of multi-tenant leased office space. As of fall 2007 Class A vacancies were 5%; four significant office towers are slated to begin construction in 2008 bringing an additional roughly one million square feet or 3,000 jobs to the district. Downtown also hosts the region's greatest density of art galleries and arts organizations, hotels, and entertainment venues.
- Northwest (including the Pearl, River District and Old Town neighborhoods), adjacent to downtown and distinguished by its industrial roots, considerable warehouse-to-condominium conversions, and significant recent investment in both urban housing and amenity-rich green office buildings (now 2.4 million square feet of multi-tenant leased office space, 425,000 additional square feet proposed for 2008).
- The Lloyd District, a regional retail destination with substantial federal, state and private office buildings (2.2 million square feet of multi-tenant leased office space), the state's largest professional sports complex and the Oregon Convention Center (newly expanded to 225,000 square feet of exhibition space).
- Central Eastside, a transforming industrial district that over the past decade has seen the highest density of redevelopment on the city's east side.
- South Waterfront, a former and largely vacant industrial area that since 2005 has realized three completed residential projects with four more underway or in planning. Approximately 30 acres is owned by Oregon Health Sciences University, which has completed its first building and plans to bring additional health, research and educational facilities to the district.

Eight areas within these neighborhoods – ranging from four blocks to 85 acres – are notable for their significant development potential and active development planning. All are served by the Portland Streetcar Loop Project. Combined, they represent close to 250 acres and an estimated potential of over \$5 billion in additional investment. For each area, the realization of

redevelopment planning at the densities envisioned is dependent upon major access improvements.

Figure 10. Streetcar Loop Economic Development Generators



Source: PDC, Metro, E. D. Hovee & Company, LLC.

Areas of significant development potential are detailed below.

- 1. North of Lovejoy:** Northwest Portland's Pearl District was developed primarily by Hoyt Street Properties, which owned the 40-acre Burlington Northern rail yards that were converted into a vibrant, urban mixed use district. This initial development was predicated on city investment in establishing the Portland Streetcar. The company's remaining undeveloped land plus additional acquisitions now total 20 acres. The service improvement associated with the Portland Streetcar Loop extension will increase accessibility and frequency of service, and support continued high value development in the area. Hoyt Street Properties' program for full build-out includes 1,700 units and 725,000 square feet of commercial space.
- 2. Post Office Blocks:** On the westside of the Central City at NW Lovejoy and Broadway is a 12.4-acre site currently occupied by the U.S. Post Office. Initial feasibility work has been completed for relocating this facility to the Portland Airport, freeing up this central site for high density development with connections to Union Station, the Portland Transit Mall and Pearl District. Extension of the existing streetcar to the eastside would pass by this redevelopment site, before crossing the Willamette River. The planned streetcar and existing transit service would provide excellent access, enabling more intense development of the site.
- 3. Lloyd Crossing:** The 25-acre site of the Lloyd Crossing – the heart of Portland's Lloyd District – has a zoned density that would allow 10 million square feet of additional construction. The property is primarily owned by Ashforth Pacific and Kaiser Permanente, both of whom have participated in area planning efforts such as the 2004 Lloyd Crossing Plan. Streetcar will provide an organizing principal for a new Main Street within this district along 7<sup>th</sup> Avenue, the planned northbound alignment. Area plans call for the transition of the district's adjacent surface lots into high density developments with structured parking (FAR in this area is 15:1). Ashforth Pacific President Hank Ashforth describes streetcar commitment as fundamental to realization of the district's potential.
- 4. Burnside Bridgehead:** The Burnside Bridgehead project is a four-acre mixed used project in a pivotal location at the eastern end of downtown's gateway bridge. This project's key location at a north-south and east-west crossroads and significant size result in considerable potential to induce adjacent development. The development will be mixed use, with office or retail leading the first phase. Anticipated total development value ranges from \$150 to \$250 million.
- 5. Employment Opportunity Subarea (EOS):** Effective in January 2007, this newly designated EOS zoning applies to 85 acres within the Central Eastside Industrial Sanctuary, which is located within one block of the proposed eastside alignment. The zoning allows for greater flexibility in office development, increasing square footage maximums and liberalizing the types of office use allowed outright within the industrial district. It responds to private market interest in transitioning this former warehousing district to flexible office space in demand by creative firms. The EOS will serve as an important test application for extending streetcar benefits to major sources of employment as well as residence.

6. **OMSI District:** The OMSI District centers on 22 acres owned by the Oregon Museum of Science and Industry (OMSI), but also includes the Portland Opera offices and Portland Community College. OMSI is now undertaking a master planning process that includes the redevelopment of existing surface parking and a recently acquired 6.2-acre parcel. Phase I plans call for a 100,000 square foot museum expansion and a 100,000 square foot science academy, to be run in partnership with Oregon Health Sciences University, that will attract high school students from throughout the state.

Phase II plans focus on the newly acquired 6.2 acres. OMSI envisions office development compatible with its science focus. Current zoning would enable the development of over one million square feet. Phase II construction is slated for 2013-2014.

In 2015, this district will connect to OHSU South Waterfront by the proposed Portland to Milwaukie light rail bridge, which is also proposed to accommodate the Portland Streetcar Loop when completed. The connection to the OHSU South Waterfront District will further development interest in both areas by increasing connectivity between these two related employment centers. Anticipated density has increased as a result of the increased access that both light rail and streetcar will provide.

7. **OHSU South Waterfront:** The south end of the Portland Streetcar Loop is proposed to be served by both streetcar and light rail. Approximately 25 acres within the South Waterfront District are owned by Oregon Health Sciences University, which has recently expanded its campus to the South Waterfront by building an aerial tram to connect the main campus on the Marquam Hill with the new streetcar-served waterfront property, 500+ feet below. The first 400,000 square foot building was completed in 2006 and represents a \$145 million investment. An additional building is planned every five years, with a total build out capacity exceeding 3 million square feet. The ability to develop the transportation-constrained South Waterfront District at the planned intensity is entirely dependent upon assuring effective and convenient access to the district.

The new light rail bridge – planned to open in 2015 – will connect South Waterfront with the emerging OMSI District, bringing together two employment and science centers on opposite sides of the Willamette River that will be within 90 seconds of one another.

8. **University District:** Portland State University is now Oregon’s largest educational institution, with more students enrolled than at any other campus in the state. PSU currently owns 49 acres in the southern end of downtown Portland, and is acquiring more. Over the next ten years, the university plans to increase enrollment from 25,000 to 35,000 students; double research grants to \$80,000,000 annually; develop close to 0.5 million square feet for academic, lab, research and classroom space; develop 200,000 square feet for retail and collaboration space, and develop between one and two million square feet of housing and dining services.

The acreage and value associated with each of these significant development areas is summarized in the following table.

**Figure 11. Significant Development Areas Summary**

Map ID	Development Area Name	Acres	Potential Value	Use
1	North of Lovejoy <i>Contact: Tiffany Sweitzer, Hoyt Realty:</i>	20	More than \$0.5 billion (50% of observed density of 137 units/acre)	Residential / Commercial
2	Post Office <i>Contact: Sarah Harpole, PDC:</i>	12.4	\$0.5 billion (assuming FAR of 6, 25% infrastructure set aside, 50% development)	Residential / Commercial
3	Lloyd Crossing <i>Contact: Hank Ashforth, Ashforth Pacific</i>	25	More than \$1 billion (50% of max potential SF)	Office / Retail / Residential
4	Burnside Bridgehead <i>Contact: Kia Selley, PDC</i>	4	\$150 - \$250 million (all phases)	Office / Retail / Residential
5	Employment Opportunity Subarea <i>Contact: Denyse McGrif, PDCf</i>	85	More than \$0.5 billion (assuming 20% of property redevelops at an FAR of 3)	Office / Retail
6	Oregon Museum of Science & Industry (OMSI) District <i>Contact: Pat LaCrosse</i>	22	\$229 million (50% of max potential SF)	Institutional / Educational / Office
7	OHSU South Waterfront <i>Contact: Mark Williams, OHSU:</i>	25	\$3 billion +	Institutional / Office
8	University District <i>Contact: Mark Gregory, PSU</i>	49+	\$700 million	Institutional / Residential / Commercial
Total		242	Over \$5 billion	

Source: Development representatives; E. D. Hovee & Company, LLC.

**2. The Alignment Integrates with Existing Transit Investment to Connect Growing Neighborhoods with Employment.** The proposed Portland Streetcar Loop Project would connect with five regional light rail lines, the existing streetcar line and 13 high-frequency bus lines. Approximately 80% of the regional system’s riders – 240,000 on an average weekday – will have the opportunity to transfer to or from the Streetcar Loop.

The project would also pass approximately three blocks from Amtrak’s Union Station and two blocks from the Greyhound bus station, offering daily intercity service to all of the cities of the west coast and the nation.

Figure 12. Overview of Portland Metro Area Rail System



Note: Red, blue and yellow solid lines represent existing light rail. Dashed lines are light rail extensions currently underway.

Source: TriMet, Metro.

This map illustrates streetcar's central position and transportation role from a regional perspective, illustrating the Regional Centers that fixed transit serves today and will serve in the future. The Streetcar Loop Project complements this system by intersecting with it and providing more frequent service within the region's most dense and mixed use central neighborhoods.

The light rail lines that connect the Central City with Portland's suburbs serve as *highways and arterials*; by comparison streetcar serves as a *local street* within the finer grain environment of Portland's Central City neighborhoods.



## B. CITY PLANNING PROMOTES HIGHER DENSITY DEVELOPMENT

City planning positively affects density of development in two ways – encouragement of higher floor area ratios (FARs) together with facilitation of mixed use rather than single purpose development.

### 1. Zoning Allows for Floor Area Ratios Well in Excess of Current Development.

Since 1980 and the adoption of the Portland *Central City Plan*, the city has envisioned a transit streetcar circulator and crafted all city policies and regulations – including zoning, height limits and Floor Area Ratios (FARs) – to support high density land uses consistent with a streetcar-supported urban environment.

Portland measures density through Floor Area Ratios (FARs), which are regulated by zoning.<sup>6</sup> Maximum FARs for properties situated along the planned eastside alignment range from 4:1 to 12:1; most properties fall between 6:1 and 9:1. The amount of development potential – the difference between the maximum allowed FAR and the existing FAR – along and around the planned eastside alignment is substantial. Within the Central Eastside (the southern portion of the eastside alignment), the overall ratio of potential to existing building square footage is 6.5:1 – meaning that the district can support 6.5 times more square footage (by zoning) than is currently on the ground.

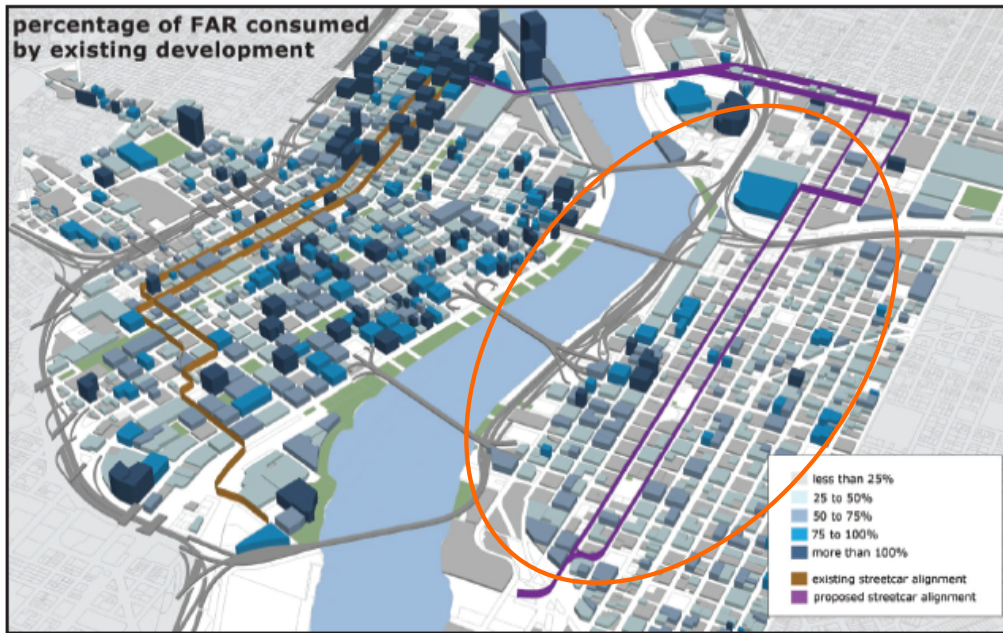
Within *three blocks* of the planned eastside alignment (the primary impact area), current development equals only 15% of maximum allowed development (according to FAR limits). Much of the existing development is single-story buildings, surface parking lots, or other undeveloped space. With the exception of the Oregon Convention Center blocks, there are fewer than four city blocks within the Project Area that currently utilize more than 50% of the allowed FAR.

Highlights of the density potential within the Portland Streetcar Loop Project Area include:

- The equivalent of approximately 36 city blocks zoned at 12:1 maximum FAR in the Lloyd District, 16 of them immediately adjacent to the Portland Streetcar Loop alignment.
- Fifty-three city block equivalents within one block of the alignment that are zoned for a maximum FAR of between 7:1 and 9:1.
- Thirty-two city block equivalents within one block of the alignment that are zoned for a maximum of between 5:1 and 6:1 FAR.

Existing and potential development is illustrated in the following two graphics. The red circle in the *first graphic* highlights the existing low densities along the proposed eastside extension.

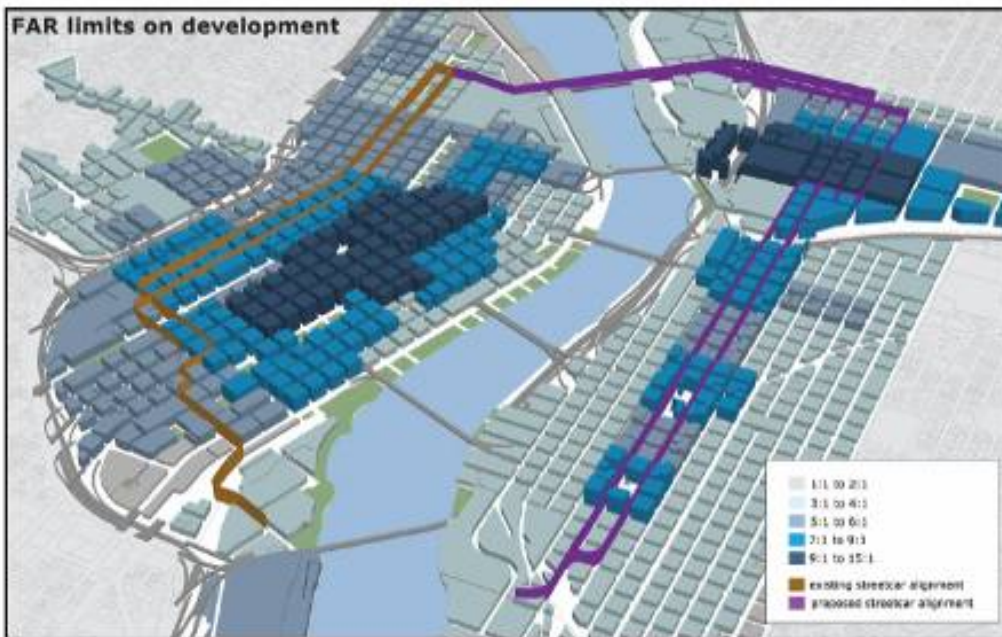
Figure 13. Existing FAR Density & Portland Streetcar Loop



Source: City of Portland, Bureau of Planning.

The *second graphic* (below) illustrates the significantly higher densities that zoning permits and which the proposed alignment is increasingly well-positioned to support.

Figure 14. FAR Development Potential with Portland Streetcar Loop



Source: City of Portland, Bureau of Planning.

The following table provides additional detail regarding existing and potential development surrounding the planned eastside streetcar alignment within the Central Eastside, the southern portion of the eastside alignment.

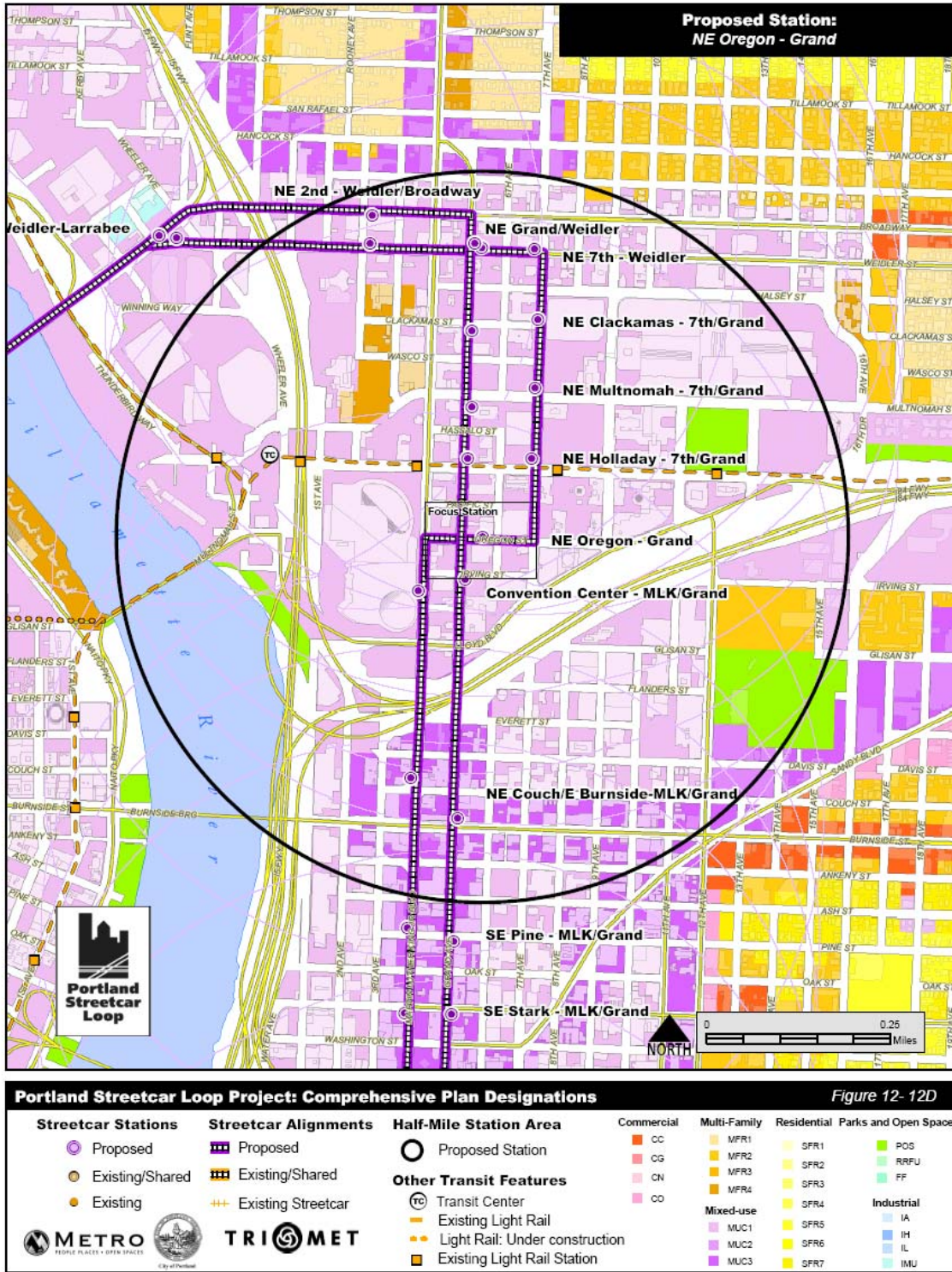
**Figure 15. Existing Vs. Potential Building Square Footage, Central Eastside**

Distance from Streetcar	Land Area (SF)	Existing Building SF	FAR	Potential Building SF	Potential to Existing SF Ratio
1 block	6,074,000	5,053,000	5.9	35,836,600	7.1
2 block	1,923,000	1,862,000	5.1	9,807,300	5.3
3 block	785,999	512,000	3.8	2,986,796	5.8
3 block+	707,000	687,000	5.3	3,747,100	5.5
	9,489,999	8,114,000	5.5	52,377,796	6.5

Source: City of Portland, E. D. Hovee & Company, LLC.

**2. Zoning Encourages Mixed Use Development.** In addition to the provision of good transit service, a mixed use environment is instrumental to facilitating high rates of transit usage. The planned eastside alignment has both comprehensive plan and zoning designations that provide for dense mixed use development, setting the stage for a compact and vibrant urban neighborhood. Figure 16 illustrates the comprehensive plan designations surrounding the proposed NE Oregon - Grand Ave. streetcar station. Purple and pink designate mixed use development, red is commercial, and orange is multi-family residential.<sup>7</sup>

Figure 16. Streetcar Alignment Comprehensive Plan Designations



Source: Metro.

**3. Beyond Regulations, Development Strategies Have Emphasized Denser Development.** Portland’s westside experience of significant redevelopment within streetcar-served neighborhoods was facilitated by both streetcar and accompanying investments and development agreements. These additional public incentives included master development agreements ensuring minimum densities with significant property owners in Northwest Portland and South Waterfront. In previously vacant areas within these districts, this public contribution to new parks development and support of unique district streetscape design (such as street lighting) furthered both the city’s and developers’ interest in creating distinctive urban neighborhoods.

Along the planned eastside alignment, the City of Portland is actively engaging property owners to encourage and influence redevelopment planning in response to the significant investment that streetcar represents. One example is the 2004 Lloyd Crossing project, which encompasses the 25-acre/34-block core of the Lloyd District – just east of the Willamette River. Project concepts developed to date have encouraged both visionary thinking and communication between large property owners.

**Figure 17. High Rise Catalyst Project Concept, Lloyd Crossing**



Source: Lloyd Crossing Sustainable Urban Design Plan & Catalyst Project, PDC.

Property owners have worked together to detail siting and design for over 8 million square feet of new development with an environmental footprint smaller than the area’s existing 2 million square feet of building space. The amount of new development envisioned equates to about 70% of the area’s zoned FAR. Streetcar will provide an organizing principal for a new Main Street within this district along 7<sup>th</sup> Avenue, the planned northbound alignment.

The Convention Center Hotel and the Burnside Bridgehead project are two additional major projects situated adjacent to the planned eastside alignment, both supported by public-private development agreements currently in negotiations. These projects are detailed in later sections of this report.

Even though eastside streetcar is still only in the planning stage, twenty planned investments have been identified along the alignment (also detailed below). The City of Portland is communicating with these property owners to encourage progress and identify means for public support. Through its development and transportation agencies, the city recognizes the importance of ongoing and in-depth conversations with and between property owners to encourage visionary thinking about the area's potential and to move the pace of redevelopment forward.

## C. MARKET CONDITIONS SUPPORT HIGHER DENSITY REDEVELOPMENT

Based on Portland experience to date, indicators of market conditions supporting higher density development include increasing investment interest, capitalizing on low improvement to land value ratios, encouragement of new development along a proposed alignment, and confidence necessary to replicate this experience in one urban location, then another – all leading to development increasingly predicated on and oriented to streetcar investment.

### 1. Market Trends Indicate Opportunity for Increased Investment Interest.

Significant development was realized within just five years of Portland's *westside* streetcar investment. Many factors supported this extraordinary response in addition to streetcar, including public-private development agreements, significant under-developed tracts of land, consolidated land ownership, and a national resurgence in Central City housing options. These development factors can be found within neighborhoods adjacent to the planned eastside alignment as well.

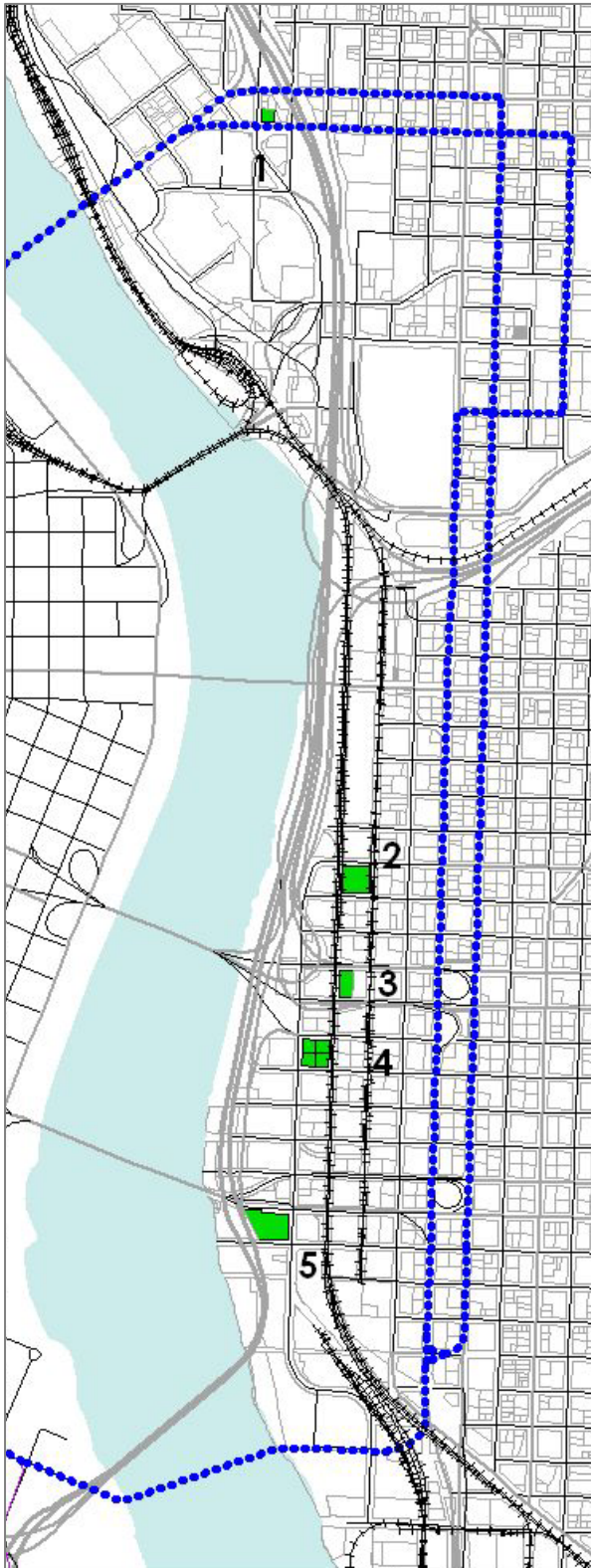
The *eastside* of Portland's Central City includes a wide range of buildings types, ranging from newer office towers and larger institutional and civic uses in the northern end to historic, vacant warehouses in the southern portion. Over the past decade, numerous significant historic warehouses have been renovated and occupied at much higher densities.

This reinvestment in and reuse of historic building stock is a recognized *first stage* of the urban real estate cycle. Lower cost renovated space attracts small, creative firms. Then, as occupancy and pedestrian activity increase, rents increase to a level that can support new construction.

The southern portion of the eastside alignment runs within one block of industrial sanctuary zoning. Recognizing market pressure to transform the aging warehouse stock within this centrally located industrial district, the City of Portland liberalized its zoning for the Employment Opportunity Subarea (EOS) in January 2007 to broaden the types of office and related uses considered appropriate for this district.

Examples of investment already occurring are described in the following table. This list is a sample only and by no means exhaustive.

Figure 18. Recent Investment in Eastside Neighborhoods Planned for Streetcar



**1. E. Alexander Building**

This former garage and inventor’s workshop was renovated as office and commercial space in 2006. The developer is now beginning work on the full-block building immediately to the west.

**2. Olympic Mills Commerce Center**



Renovation of this 172,000 square foot historic surplus grain mill is currently underway. Flexible work space will be ready for occupancy in early 2008.

**3. Jones Cash Building**



This 80,000 square foot former warehouse is one of Portland’s first retail mail-order businesses; it was later renovated for use as a cold-storage warehouse. Portland firm Venerable Properties

purchased and renovated the building in 2000 for creative workspace.

**4. Eastbank Commerce Center**



With renovation completed in 2002, this 160,000-square-foot former warehouse now houses light industrial facilities, office space, a restaurant and services

under one roof with shipping, production and warehousing capabilities.

**5. RiverEast Center**



In 2006, this 91,000 square foot warehouse was remodeled and occupied by co-owners Group Mackenzie (architecture and engineering) and Coaxis (software development). The riverfront building features about 15,000 square feet of groundfloor space leased to Portland Boathouse Inc.,

including space for boat storage and public boat rentals.



## 2. Improvement to Land Value Ratios are Low Surrounding Planned Alignment.

Improvement to land value ratios are a clear indicator of the relative market worth of buildings to land. A low improvements to land value ratio can indicate that investment in an area is low enough that redevelopment of properties makes economic sense.<sup>8</sup>

On Portland’s *westside*, an estimated 68% of new construction experienced post 1997 occurred on sites that had a *pre-development* building improvements to land value ratio of less than 0.5. For this redevelopment, on-site building improvements pre-1997 were valued at less than 50% of land value.

This data is compiled for sites for which there is complete valuation and square footage information covering pre-1997 and 2005 conditions.<sup>9</sup> An additional 19% of building square footage occurred on sites with improvements to land valuation of 0.5-1.0 and 13% on sites with improvements valuation that exceeded land valuation.

For Portland’s westside, more than 200 acres (or 37% of land area evaluated) within three blocks of the streetcar alignment had building improvements to land valuation ratios of less than 0.5 as of 1997. Despite substantial new investment, there is still substantial opportunity for continuing development on vacant and underutilized properties on Portland’s westside.

**Figure 19. Pre-1997 Improvement to Land Value Ratios of Westside Lots that Redeveloped from 1997-2005 (Portland Westside)**

Improvement to Land Valuation Ratio	Tax Lots	Square Footage Developed	Percent of Square Footage Developed*
< 0.5	30	2,803,000	68%
0.5 - 1.0	11	767,000	19%
> 1.0	7	557,000	13%
Parcels w/incomplete data	90	3,101,000	---
Total	138	7,228,000	100%

\* Note: Percentage distribution is for parcels with complete data available.

Source: Metro RLIS 1997-2005, E. D. Hovee & Company, LLC.

Applying these thresholds based on westside experience to eastside neighborhoods indicates strong potential for development stimulated with the extension of streetcar to the full Portland Streetcar Loop configuration as currently proposed. As was the case on the westside, a substantial portion of land within inner eastside neighborhoods at present supports only low value building investments – an important criterion in estimating the likelihood that redevelopment and increased investment will occur.

An estimated 37% percent of acreage within three blocks of the planned *eastside* alignment is associated with improvement to land value ratios of less than 0.5. This represents just over 120 acres of land that is either vacant or with low value building improvements at present. In effect, these sites can be considered as the most viable candidates for substantial redevelopment and new construction with an extension of streetcar to Portland’s eastside.

An additional 6% of acreage within three blocks of the proposed eastside alignment (or close to 20 acres) falls within a ratio range of 0.5-1.0, representing a second (but smaller) tier of redevelopment candidates.

**Figure 20. Improvement to Land Value Ratios within Three Blocks of Proposed Alignment (Portland Eastside)**

Improvement to Land Value Ratio	Taxlots	Acres	Percent of Acreage
Less than 0.5	387	120.1	37%
0.5 - 1	83	19.8	6%
Over 1.0	461	187.7	57%
Excluded*	109	24.9	---
Total	1,040	352.5	100%

\*Note: Excluded land includes right-of-ways and open space. This land was not included in the percentage allocation of land by improvement to land value ratio.

Source: Metro RLIS August 2007 update, E. D. Hovee & Company, LLC.

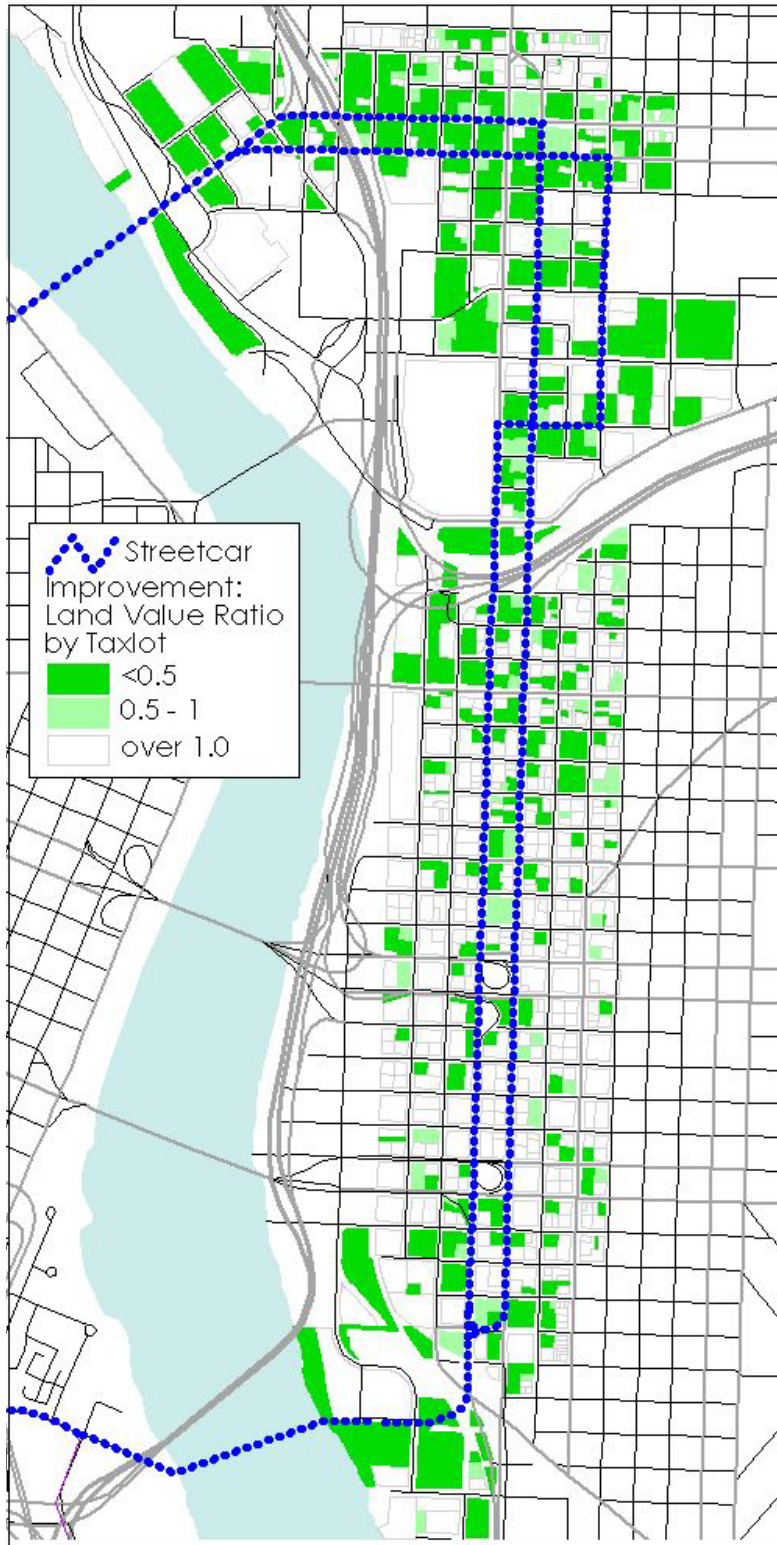
This measure does not ensure that all properties with low improvement values will eventually redevelop. Some low value buildings or even surface lots may provide income streams at very low risk compared with returns available from redevelopment.

However, given the strong correlation of sites with low valued building improvements on Portland’s westside to subsequent redevelopment, these currently ‘under-improved’ sites clearly become front-runner candidates for streetcar oriented reinvestment and development.

A visual overview of the building to land value relationship for Portland’s eastside is provided in the following map. This map indicates that under-improved land is distributed throughout the district, but is especially prominent in the Lloyd District (the northern portion of the planned eastside alignment).

The Lloyd District tends to have more contiguous whole block parcels with low improvement to land value ratios. By comparison, Central Eastside sites (south of the I-84 freeway) tend to be more fragmented and are more often situated in less than whole block configurations.

Figure 21. Map of Improvement to Land Value Ratios



Source: RLIS August 2007 update, E. D. Hovee & Company, LLC.

**3. Significant New Development is Planned for the Proposed Alignment.** Increased investment is already planned along the eastside alignment, despite the fact that complete funding has yet to be secured. (With funding not yet committed, it is too early to expect the market to fully respond to the catalytic potential of streetcar investment). Planned investment does, however, indicate the general trajectory of the neighborhoods for which streetcar introduction is planned.

Planned projects that have been shared with the authors of this updated Template 14 report are summarized below and organized within two categories:

- **Significant Projects** describe sizable projects dependent upon a development agreement with the City of Portland to proceed. These projects are highly dependent upon streetcar investment, for which developers are willing to commit to higher density construction.
- **Planned Projects** describe projects currently in planning phase, undertaken by property owners without city input. The size and value of Planned Projects has been estimated; project representatives have also rated the impact of streetcar investment on project plans and timing.

**Significant Projects:** There are two negotiations underway for two locally and regionally Significant Projects adjacent to the streetcar alignment. Streetcar development is a significant factor in both projects. Projects are mapped in Figure 23.

- **Convention Center Hotel (9):** The City of Portland has selected a hotel operator and development team for a two-block site adjacent to the Oregon Convention Center. Negotiations are underway to secure project financing. Developers state that the streetcar will provide access to the Pearl and OMSI Districts for convention visitors and significantly enhance the viability of the proposed hotel. Streetcar is also pivotal to redevelopment of the blocks adjacent to the Convention Center, which is necessary for bookings to grow.
- **Burnside Bridgehead (11):** This project was also listed above as a Development Area due to its magnitude. The four-acre site will be developed in a mix of uses; Phase I will focus on commercial and retail uses. The development team is now seeking tenants. Public commitment to streetcar is a key factor in negotiations with the city that include minimum site densities.

**Other Planned Projects.** The final category of anticipated investment is projects now in planning or construction phase that will be undertaken without city involvement.

The following table reports 20 projects identified to date (including the two significant projects detailed above). These projects represent a total estimated investment value of close to \$1.2 billion. Private investment will only grow as streetcar funding is secured and the alignment is realized.

In the following table, all projects have been rated by project spokespeople in regard to their dependence on streetcar to move forward as planned. All but three project representatives describe their dependence on streetcar as ‘high.’

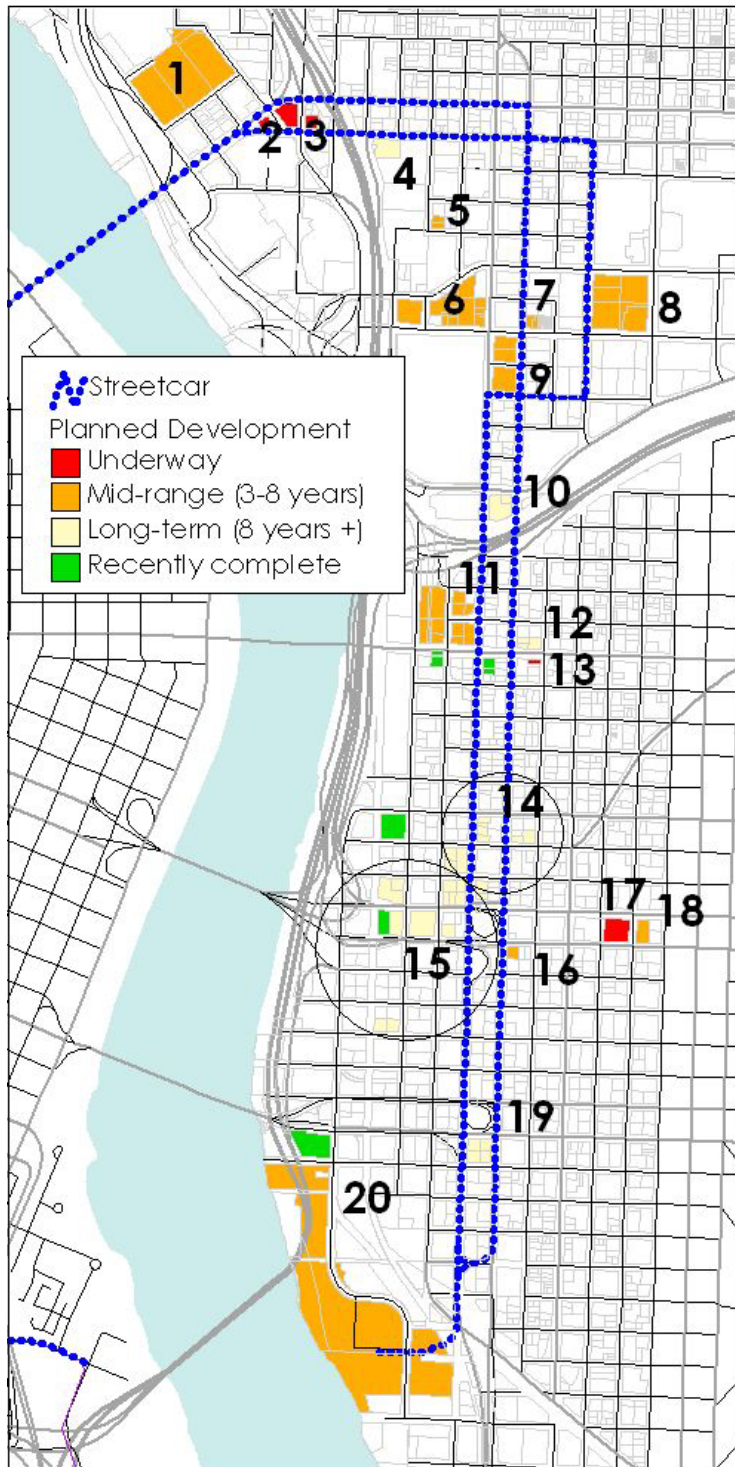
This list includes only eastside projects. However, the Portland Streetcar Loop Project will also support additional high density development on the westside by doubling the current frequency of service.

**Figure 22. Planned Projects within Three Blocks of Eastside Streetcar**

Project Name	Square Feet	Potential Value	New/Rehab Units	Use	Timing	Streetcar Dependence
<b>1 Blanchard Building</b> 501 N Dickson St <i>Carter MacNichol, Shields Oblatz Johnsen</i>	348,000	\$70 million	Rehab	Office / Retail	2010+	High
<b>2 Left Bank</b> 240 N Broadway Blvd <i>Daniel Deutsch, Alora Properties</i>	66,000	\$14.9 million	Rehab	Office / Retail	2007	High
<b>3 1618 N Vancouver Avenue</b> <i>Daniel Deutsch, Alora Properties</i>	20,000	\$4.5 million	Rehab	Office / Retail	2007	High
<b>4 Bee Car Rental</b> NE 1 <sup>st</sup> Ave & Weidler Blvd <i>Sara King, Portland Development Commission</i>	125,000	\$36 million	New Units TBD	Residential	2010+	High
<b>5 Old Rosary Housing Site</b> NE Wasco & 2nd Ave <i>Sara King, Portland Development Commission</i>	50,000	\$15 million	New Units TBD	Residential	2010+	High
<b>6 Schlesinger Holdings</b> Blocks 47-49 <i>Barry Schlesinger, Schlesinger Properties</i> (Phase I)	530,000	\$120 million	New	Office / Retail	2010	Medium
<b>7 Cosmopolitan Tower</b> NE Grand & Holladay St <i>Tom Gibbons, LRS Architects</i>	274,000	\$82 million	New 204 units	Residential	2009	High
<b>8 Urban Village</b> NE 7th/9th/Holladay/Mult superblock <i>Hank Ashforth, Ashforth Pacific</i>	750,000	\$300 million	New Units TBD	Office or Office/ Residential	Currently Marketing	High
<b>9 Westin Convention Center Hotel</b> NE MLK & Holladay St <i>Reed Wagner, Metro</i> (Phase I)	400,000	\$180 million	New	Hotel	2010+	High
<b>10 Rich's Deli</b> 430 NE Lloyd St <i>Joe Angel, Pacific Star</i>	35,000	\$10.5 million	New Units TBD	Office / Residential	2010	High
<b>11 Burnside Bridgehead</b> East end of Burnside Bridge <i>Brian Bennett, OPUS</i>	365,000	\$200 million	New	Office/ Retail / Residential	2010+	High
<b>12 United Finance</b> NE corner of Burnside & Grand <i>Richard Parker, United Finance</i>	33,500	\$9.7 million	Rehab	Office	2010+	High
<b>13 Bside6</b> 340 SE 6th Ave <i>Lance Mars</i>	26,000	\$5.5 million	New	Office	2007	High
<b>14 Burns Bros Inc. Properties</b> 4 blocks in CES <i>Bruce Burns</i>	Have long-term leases in place but have also been working with architects and feasibility consultants.				2010+	High
<b>15 Walt Pelett Properties</b> 5 blocks in CES <i>Walt Pelett</i>	Has considered offers for holdings				2010+	High
<b>16 514 SE Belmont St</b> <i>Mike Bolliger</i>	54,000	\$19 million	New Units TBD	Retail / Residential	2010+	High
<b>17 Grand Central Building</b> 808 SE Morrison St <i>John Plew, Concept Entertainment</i>	37,600	\$11.5 million	Rehab	Retail	2007	Low
<b>18 East of Grand Central</b> <i>John Plew, Concept Entertainment</i>	175,000	\$60 million	New	Retail / Office / Residential	2010+	Low
<b>19 Burger King</b> 1525 SE Grand Ave <i>Joe Angel, Pacific Star</i>	40,000	\$12 million	New	Office / Retail	2010+	High
<b>20 OMSI</b> 1945 SE Water Ave <i>Pat LaCrosse</i>	200,000	\$79 million (phase I)	New	Institutional	2012+	High
<b>TOTALS</b>	<b>3,529,100</b>	<b>\$1,229 million</b>				

Source: Development representatives; E. D. Hovee & Company, LLC.

Figure 23. Mapped Eastside Projects



**Planned Projects Key**

- 1 Blanchard Building
- 2 Left Bank
- 3 1618 N Vancouver Ave
- 4 Bee Car Rental
- 5 Old Rosary Housing Site
- 6 Schlesinger Holdings
- 7 Cosmopolitan Tower
- 8 Urban Village
- 9 Westin Convention Center Hotel
- 10 Rich's Deli
- 11 Burnside Bridgehead
- 12 United Finance
- 13 Bside6
- 14 Burns Brothers Inc. Properties
- 15 Walt Pelett Properties
- 16 514 SE Belmont St
- 17 Grand Central Building
- 18 East of Grand Central
- 19 Burger King
- 20 OMSI

Source: City of Portland, development representatives, E. D. Hovee & Company, LLC.

**4. If Eastside Neighborhoods Mirror Westside Development Response, Eastside Development will Increase 65%.** In 2005, an aspirational projection through 2025 was created for the proposed eastside alignment in which the rate and intensity of development mirrored that experienced along the westside alignment. The result was a 65% increase in the Central Eastside (CES) building stock and a 310% increase in the number of housing units anticipated. Details of the projection are summarized in the following table.<sup>10</sup>

**Figure 24. Westside Development Experience Extrapolated to Eastside**

Distance from streetcar	Land SF in redevelopment lots (2004)	Building SF in redevelopment lots (2004)	2007-2025		Avg. zoned FAR	% of FAR realized		Percent of land area vacant 2025*
			annual building dev.	Added building SF by 2025		2007-2025	Land dev'd (SF) by 2025	
1 Block	6,074,000	5,053,000	5.8%	4,752,000	5.9	90%	886,000	11%
2 Blocks	1,923,000	1,862,000	1.7%	429,000	5.1	74%	114,000	26%
3 Blocks	785,000	512,000	1.2%	71,000	3.8	62%	30,000	29%
3+ Blocks	707,000	687,000	1.0%	51,000	5.3	43%	22,000	16%
Total	9,489,000	8,114,000	2.0%	5,303,000	-	-	1,052,000	16%

Source: City of Portland, E. D. Hovee & Company, LLC.

The key ingredients in this Central Eastside development scenario were:

1. The westside track record of post-streetcar development trends;
2. Zoned FAR limits within the Central Eastside, and
3. Extent of existing development within the Central Eastside.

The zoned capacity of the CES is significant; its existing building stock is not. Applying westside experience – the percent of zoned FAR achieved by block from streetcar and the rate of development as a percentage of the existing building stock – to the CES produces an *aspirational projection* of over 5 million square feet of development that might be achieved within this district.

**5. Eastside Development Forecasts Attribute 30-40% of Future Development Activity to Streetcar Investment.** Two market studies have been completed for the eastside extension of the Portland Streetcar Loop project which provide a contextualized alternative to the aspirational projection summarized below.

**Central Eastside Forecast:** Development within the southern portion of the eastside extension – the Central Eastside Urban Renewal Area – was forecast in May 2007 to inform tax revenue projections for the Central Eastside Urban Renewal Area.<sup>11</sup> This alternative forecast scenario was prepared for the more immediate purpose of issuing tax increment bonds based on a conservative estimate of future tax revenue growth. The long-term aspirational methodology for the entire eastside was accordingly modified to reflect a more conservative, bankable approach.

This modified approach was rooted in the specifics of the Central Eastside neighborhood, and also involved estimating prospective impacts of streetcar investment *in isolation* from other development influences. Key ingredients of this forecast were:

- ‘Baseline’ redevelopment trends covering documented activity over the past nine years were calculated from Multnomah County tax assessor records;
- The anticipated value and timing of known projects – both significant and planned, in the nomenclature of this report – were then layered onto baseline trend development; and
- A ‘streetcar premium’ was then estimated to reflect current market conditions with the addition of streetcar investment. This premium was the subjective assessment of economic development professionals familiar with the performance of the planned streetcar corridor over the past half decade. It reflects the most likely scale, land use type, volume and location of new investment along the corridor (for which a track record has not yet been established) should the corridor achieve a *tipping point* at which new construction can be supported.
- Two forecast scenarios were modeled, conservative and aggressive. The conservative scenario assumes no public involvement in supporting adjacent development. The aggressive scenario is predicated on additional public investment in traffic calming, streetscape improvements and development agreements along the alignment, to create the best possible pedestrian environment along the corridor (a key precursor to westside development along the alignment).<sup>12</sup>

Key conclusions of the 2007 market-based optimal investment/aggressive forecast are:

- Approximately 18% of projected investment in *building renovation* (much of which is already underway) can be attributed to streetcar investment;
- Up to 45% of projected investment in *new commercial construction* can be attributed to streetcar investment; and
- Up to half of projected *new residential construction* can be attributed to streetcar investment – an arena where streetcar clearly makes a difference based on westside experience.

Details of the Central Eastside urban renewal forecast scenarios are included with the following table.



**Figure 25. Central Eastside Development Projections May 2007**

	Commercial SF		Housing	Notes
	Rehabilitated	New	Units	
<b>Conservative Scenarios</b>				
a) Trend	2,325,000	-	-	Continuation of observed trends
b) Bridgehead	-	487,500	150	3 towers, reduced by 25%
c) Planned Projects	-	334,000	474	Plans delayed, reduced
d) Streetcar	512,000	480,000	-	Office/flex construction only
Total	2,837,000	1,301,500	624	
<i>Subtotal w/o Streetcar</i>	2,325,482	821,500	624	a + b + c
<i>% Attributed to Streetcar</i>	18%	37%	0%	d as percent of total
<b>Aggressive Scenarios</b>				
a) Trend	2,325,000	-	-	Trend scenario remains unchanged
b) Bridgehead	-	650,000	200	As profiled by PDC – value of increased density attributed to streetcar
c) Planned Projects	-	354,000	713	As profiled by developers – value of increased density attributed to streetcar
d) Streetcar	512,000	480,000	270	Commercial + housing with enhanced investment
Total	2,837,000	1,484,000	1,183	
<i>Attributed to Streetcar</i>	512,405	662,500	559	<i>Total of basic streetcar plus related public investment enhancements</i>
<i>% Attributed to Streetcar</i>	18%	45%	47%	

Source: E. D. Hovee & Company, LLC *Central Eastside Development Scenarios*, May 2007.

When projected development is reported in terms of *market value*, the total estimated value for the aggressive scenario is \$994 million (in 2007 dollars). Thirty percent of the projected square footage is attributed to streetcar’s influence; if an equivalent share of the projected value is attributed to streetcar the result is \$298 million in development associated with streetcar investment.<sup>13</sup>

With an estimated total construction cost of \$57 million for the CES portion of the streetcar alignment, the cost to benefit ratio according to this market-based development forecast is over 5:1.

**Lloyd District Forecast:** Lloyd District development was forecast in March 2008 for an area corresponding to roughly one-quarter mile around the planned alignment, totaling 305 acres within 930 taxlots. The bulk of the Lloyd District area considered is zoned RX, a dense, mixed-use zone dominant in the Central City. Industrial zones are found north of the Broadway bridge and west of I-5, and along the river (corresponding to the rail tracks). The northernmost lots within this geography are in residential zoning.

Lloyd District differs from the Central Eastside portion of the planned streetcar extension as it has seen fairly significant development activity (just over one million square feet) over the past 10 years. In the following table, realized development trends have been projected forward to estimate development within a 20 year horizon in the absence of significant public investment in

the district such as highway, parks or streetcar infrastructure investment. Total added developed square footage within a future 20 year timeframe is approximately 2.2 million.

**Figure 26. Baseline Trend (1997-2007) & Development Projection (2008-2028)**

Building Type	Development Experienced (1997-2007)				Base Projection (07-27)		
	Buildings	SF per Building	Total SF	Development % of Total	# of Units	Buildings In 20 Years	SF in 20 Years
Low-rise commercial	8	6,300	50,600	5%		16	101,200
Apartments	2	168,800	337,500	31%	150	4	675,000
Hotel	1	147,300	147,300	14%		2	294,600
Office	2	226,900	453,700	42%		4	907,400
Condos	2	46,400	92,800	5%	50	4	185,600
<b>Total</b>	<b>15</b>	<b>72,127</b>	<b>1,081,900</b>	<b>100%</b>	<b>200</b>	<b>30</b>	<b>2,163,800</b>

Source: Multnomah County Tax Assessor, E.D. Hovee & Company, LLC.

As with the Central Eastside, projects in planning phase were then profiled, providing some detail on future development such as approximate size and use. Eight projects were profiled, totaling 2.5 million square feet as described by development representatives.

Because development planning is not always realized, or realized at the pace or to the scale initially conceived, two versions of each project are suggested: an ‘as described’ version and a revised version, which reflects a more conservative build out. For projects without public sector involvement, a 50% reduction in size has been applied. For projects with public sector involvement – such as land ownership or anticipated project subsidy – a 25% reduction in size has been applied, reflecting the greater likelihood that projects with public backing and involvement come to fruition on the scale realized.

**Figure 27. Known Lloyd District Planned Development Projects**

Project Name & Address	Square Feet	Est. Value	Use	Timing	Streetcar Dependence	Public – Private	Revised SF Estimate	Revised Value Estimate
Blanchard Building 501 N Dickson St	348,000	\$70 m	Office / Retail	2010+	High	Yes	261,000	\$52 m
Bee Car Rental NE 1 <sup>st</sup> Ave & Weidler Blvd	125,000	\$36 m	Residential	2010+	High	Yes	93,750	\$27 m
Old Rosary Housing Site NE Wasco & 2nd Ave	50,000	\$15 m	Residential	2010+	High	Yes	37,500	\$11 m
Schlesinger Holdings Blocks 47-49 (Phase I)	530,000	\$120 m	Office / Retail	2010	Medium	No	265,000	\$60 m
Cosmopolitan Tower NE Grand & Holladay St	274,000	\$82 m	Residential	2009	High	No	137,000	\$41 m
Urban Village NE 7 <sup>th</sup> /9th/Holladay/Mult	750,000	\$300 m	Office or Office/Res	market	High	No	375,000	\$150 m
Westin Convention Center Hotel NE MLK & Holladay St	400,000 (Phase I)	\$180 m	Hotel	2010+	High	Yes	300,000	\$135 m
Rich's Deli 430 NE Lloyd St	35,000	\$11 m	Office / Residential	2010	High	No	17,500	\$5 m
<b>Total</b>	<b>2,512,000</b>	<b>\$814 m</b>					<b>1,486,750</b>	<b>\$157 m</b>
Housing	841,500	\$288 m					464,500	\$190 m
Commercial	1,270,500	\$345 m					722,250	\$135 m
Hotel	400,000	\$180 m					300,000	\$482 m

Note: Square footage for the Urban Village and Rich’s Deli projects have been split between housing and commercial categories.

Source: Development contacts, E.D. Hovee & Company, LLC.

Not all of these planned projects – half of which are anticipated to occur beyond 2010 – may be realized, but they are considered representative of projects that may be undertaken in this district even if the responsibility is ultimately transferred to a different developer. The conservative version of these known projects has thus been considered as *part of* the base trend projection (from which 2.1 million square feet of development is anticipated over a 20 year period).

How does anticipated district development projection change with the introduction of streetcar? The difference between the revised (conservative) and ‘as described’ version of known projects is considered the ‘streetcar premium,’ which brings development to a density that the market may not deliver to this area in the absence of streetcar investment. This streetcar premium is roughly 1 million square feet, an increase of 69% over the 1.49 million square feet of development encompassed within the more conservative outline of known projects.

When this premium – 69% – is applied to the baseline trend (2.1 million square feet), total expected development increases to 3.65 million square feet. This translates into an annual square footage increase within the district of 1.9%, 0.8% of which is attributed to streetcar.

**Figure 28. Lloyd District Rate of Development With & Without Streetcar**

1	Baseline trend continuation over 20 years	2,163,800
2	Full version of known projects	2,512,000
3	Reduced version of known projects	1,486,800
4	Difference: known projects SF attributed to streetcar	1,025,300
5	Percentage of SF attributed to streetcar	69%
5	Total 20 year trend development + streetcar premium (69% increase)	3,650,600
7	Streetcar portion of total projected development	1,486,800
8	Existing district SF	9,800,700
9	Annual Increase in SF	1.9%
10	Annual Increase attributable to Streetcar	0.8%
11	Full value of known projects	\$814 m
12	Reduced version of known projects	\$482 m
13	Difference: known projects value attributed to streetcar	\$331 m
14	Streetcar value extrapolated to total district development (45% increase)	\$480 m

Source: E.D. Hovee & Company, LLC.

In effect, 40% of the composite Lloyd District market based development can be attributed to extension of the Portland Streetcar Loop with this forecast methodology. This composite 1.9% annual rate of development projected for the Lloyd District with streetcar is slightly below the 2.0% rate actually experienced on Portland’s westside from 1997-2004.

Likewise, a portion of the dollar value of new development the district experienced can be attributed to the extension of the Portland Streetcar Loop. For known projects alone, the streetcar-associated portion of development value is over \$331 million. If this amount is increased by 45% (the difference between line 4 and line 7 in the above table), the total value of projected streetcar-associated development increases to \$480 million. With an estimated project cost of \$38 million, the development that this investment could leverage is over 13 times this amount.

**Figure 29. Cost:Value Estimates for Eastside Extension**

District	Cost	Development Value*	Cost: Value Ratio
Central Eastside	\$57,000,000	\$298,000,000	5
Lloyd District	\$38,000,000	\$480,480,000	13
All	\$95,000,000	\$778,480,000	8

Source: E.D. Hovee & Company, LLC.

## D. PUBLIC INCENTIVES BEYOND TRANSIT ARE AVAILABLE

Portland’s westside experience demonstrates the importance of public commitment to urban development through a myriad of approaches that reinforce and compliment streetcar investment. The tools available to encourage high density development along the proposed eastside alignment are summarized below.

**1. Public-Private Development Agreements.** Development agreements were crucial to high density development along the westside alignment. For the Hoyt Street Properties’ original 40 acres at the northern end of the westside alignment, density minimums were increased incrementally for three separate public investments: 1) removal of an overhead ramp that bisected the property, 2) choosing and constructing a streetcar alignment adjacent to Hoyt Street property, and 3) development of a park on land donated by Hoyt Street Properties. Hoyt Street Properties has stated that without the streetcar and the accessibility it provides, the densities achieved would not have been possible.

On Portland’s eastside, there are currently two specific projects underway in which development agreements play a key role – the Burnside Bridgehead project (four acres) and the Convention Center Headquarters Hotel (two city blocks). These projects are detailed on page 28.

Further development agreements are anticipated for at least a portion of properties within the Significant Development Areas depicted in Figure 10. In total, these areas represent *close to 250 acres* that are either in consolidated ownership, public ownership or for which interest in high density development has been expressed by private property owners.

**2. Streetscape Investments.** The City of Portland is committed to creating the pedestrian oriented environment along the alignment that best supports mixed use development at urban densities. Key to this is traffic calming measures which ensure frequent opportunities for pedestrian crossings. The Portland Streetcar Loop Project includes 41 new signalized crossings along the proposed 3.35 mile eastside alignment.

**Figure 30. New Signals Included in Streetcar Funding**

Streetcar Segment	New Signals
Pearl District (NW)	6
Broadway Bridge to NE 1 <sup>st</sup>	2
NE 3rd - NE 7 <sup>th</sup>	7
NE Wasco - I-84	7
NE Davis - SE Ankeny	8
SE Stark - SE Clay	10
SE Clay - OMSI	1
Total	41

Source: *Portland Streetcar Loop Transportation Management Plan Draft*, November 19 2007; E. D. Hovee & Company, LLC.

Additional priority streetscape investments include sidewalk improvements throughout the corridor (including street trees and eliminating driveways where possible), discouraging future auto oriented land uses, increasing pedestrian connections to the river and riverfront esplanade along four east-west streets, ensuring connections to the region's bike networks, and improving trail systems within a greenspace that intersects the alignment.

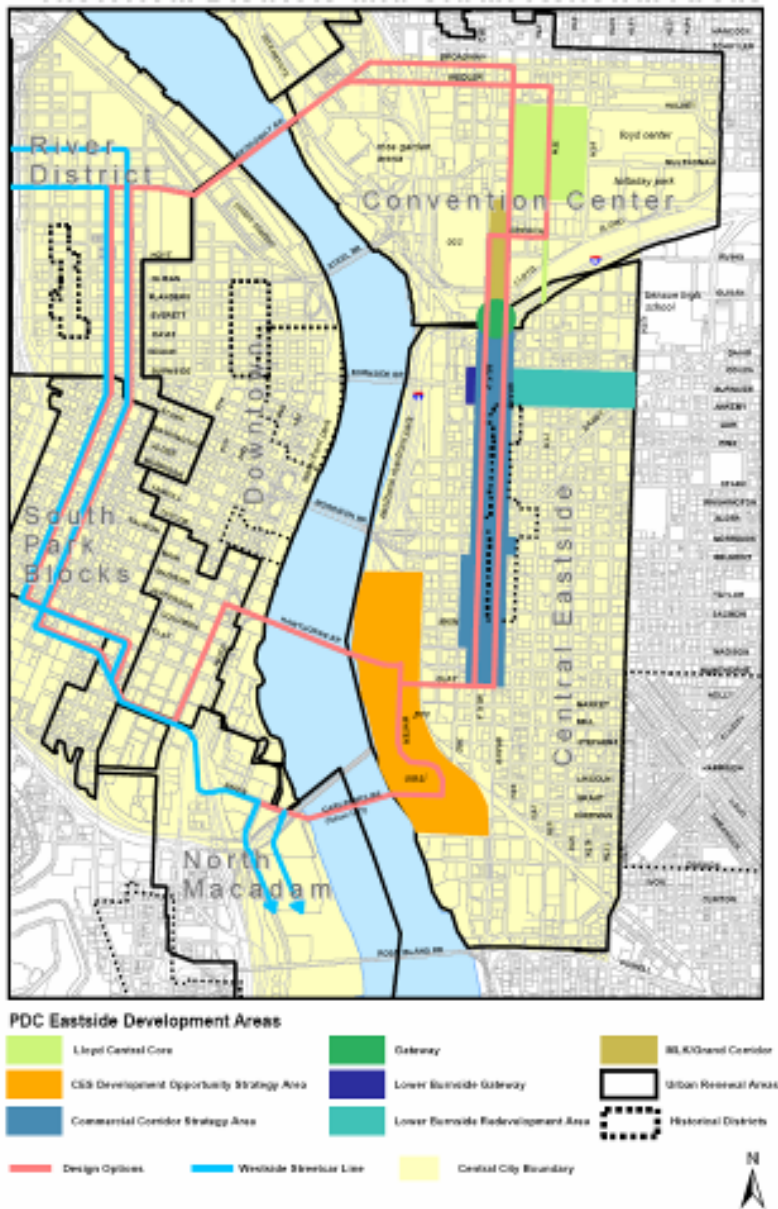
More significant aspirational streetscape investments include an additional I-84 auto crossing to reduce traffic congestion on the existing MLK and Grand north-south bridges and a park bridge across I-5 within the Lloyd District to connect residents with the river.

**3. Urban Renewal Districts.** In Portland's westside, Urban Renewal has been proven as a powerful tool in generating up-front funds for infrastructure investment, including park development and road improvements. The planned eastside alignment is also encompassed entirely by in-place Urban Renewal Districts, the most successful tool identified to date in generating redevelopment funds.<sup>14</sup> (As is true elsewhere in the U.S., tax increment districts freeze collected tax revenue and direct future revenue growth to redevelopment projects for the lifetime of the district.)

In Portland, tax increment funds can be used to support both streetcar construction and adjacent catalyst development projects. Three districts encompass the proposed completion of the Portland Streetcar Loop:

- **River District (Westside):** The streetcar extension proposed at NW 10<sup>th</sup> and Lovejoy is in the middle of this westside district, which extends from the existing Portland Streetcar alignment to the proposed Willamette River streetcar crossing on the Broadway Bridge.
- **Convention Center (Eastside):** This Urban Renewal District encompasses the proposed new alignment from the eastside of the Broadway Bridge, through the Lloyd District to the streetcar's crossing of the I-84 freeway. Tax increment funds are planned for acquiring properties and supporting additional housing development, in addition to supporting streetcar construction.
- **Central Eastside:** The time frame for this district was recently extended to allow support of the Burnside Bridgehead project and the Burnside Couch couplet (each further described below). District funding will also support streetcar construction. This district encompasses the remainder of the proposed eastside extension through its southern Willamette River crossing on the planned light rail bridge (north of the Ross Island Bridge), connecting back to the South Waterfront area on Portland's westside.

Figure 31. Urban Renewal Areas



Source: City of Portland.

**4. Burnside Street Investments.** The Burnside Bridgehead project has been previously described in this report. This four-acre project can accommodate significant jobs and housing; current Phase I plans center on office and retail uses. Urban Renewal funds are currently allocated to incent maximum density at this pivotal site.

The eastside Burnside-Couch couplet is a second project that will impact the Burnside vicinity, roughly the mid-point of the eastside alignment. The project will transform Burnside, a major traffic arterial, into a one-way street eastbound, while Couch (one block to the north) will carry westbound traffic.

Anticipated project benefits include:

- A significantly improved pedestrian environment by providing curb extensions to narrow pedestrian crossing distances across Burnside Street, wider sidewalks, and traffic signals at all intersections;
- A significantly improved biking environment, and reduced traffic conflicts between autos and bicycles, due to a striped bike lane; and
- Enhanced vehicle and transit access and traffic flow through the realignment of Burnside and Couch Streets into a one-way couplet system between the Burnside Bridgehead project and E. 14th Avenue.

Engineering for the couplet is underway as of January 2008. Construction is anticipated to begin in spring 2009 and be completed by summer 2010.



## IV. STREETCAR-DEVELOPMENT BENEFIT METRICS

Based on this updated documentation of the streetcar-development nexus, the following *benefit metrics* are offered against which future Small Starts projects might be assessed. While drawn largely from Portland experience and projection, the metrics have broader national applicability as well:

- 1. Density of New Development:** Development experienced on Portland's *westside* (between 1997 and 2004) has produced residential plus job densities estimated at **YY** persons per acre. Market based forecasts for the *eastside* indicate potential for **ZZ** persons per acre with streetcar extension.
- 2. Return on Investment:** Portland's *westside* has captured a *total redevelopment* investment more than 24 times streetcar cost (through 2005). Market-based development projections have been prepared for the *eastside*, encompassing both the Central Eastside Urban Renewal Area and the portion of the Lloyd District within three blocks of the planned alignment. Anticipated value of added *development attributed to streetcar investment* is projected at \$778 million versus streetcar project cost of \$95 million, for an ROI of 8:1.
- 3. Redevelopment Potential:** On Portland's *westside*, approximately 37% of land area within three blocks of the streetcar alignment had improvements to land valuation ratio (pre-streetcar construction) of less than 0.5:1. For Portland's *eastside*, a similar 37% of the proposed corridor extension is associated with a less than 0.5:1 ratio (as of 2007).
- 4. Zoned Development Capacity:** *Westside* development experienced post-streetcar to 2004 within three block of the installed Portland Streetcar system has been three times the previously zoned capacity of development. For the proposed *eastside* extension, estimated development capacity within three blocks of the proposed alignment is more than six times existing square footage.
- 5. VMT Reduction:** As the regional planning agency for the Portland metropolitan area, Metro has calculated that areas with *good transit and mixed use* experience 9.8 vehicle miles per day of travel per capita – compared with 21.8 miles per day for areas of the region without either good transit or mixed use. The per capita VMT reduction with streetcar-related development (both westside and eastside) is estimated at 55% compared with the suburban greenfield development alternative.
- 6. Reduced Carbon Footprint:** Preliminary evaluation consistent with VMT reduction and urban building efficiencies indicates an approximately 65% savings in transportation and development footprint for urban residential use and a 45% reduction for employment use compared to the suburban greenfield development alternative (both westside and eastside).

## APPENDIX A. PREPARERS PROFILE

E. D. Hovee & Company, LLC has served public, non-profit and private development clients both in and outside the Pacific Northwest since 1984. The firm has considerable experience in evaluating the nexus between transit and economic development. Within the Portland metro area, E. D. Hovee & Company has conducted transit-economic development assessments including:

- Central Eastside URA development projections with and without streetcar for the Portland Development Commission (2007)
- Portland Streetcar development impact analysis for Portland Streetcar Inc. (2005)
- Evaluation of effects on business and property values of Portland Transit Mall refurbishment and light rail extension – including both long-term valuation and shorter term construction impact assessments (2004-2005)

Both in and outside Portland's Central City, E. D. Hovee & Company, LLC has been involved in a wide range of transit and economic development assessments including light rail impact and station area planning (east, north, west and south MAX/LRT corridors), associated smaller city development (at Gresham and Hillsboro LRT termini). Central City development assessments have been conducted in the Pearl, Old Town, Downtown core, West End, University, South Waterfront, Lloyd and Central Eastside Districts over the last 20+ years.

Outside the Portland metro area, E. D. Hovee & Company, LLC has experience with urban redevelopment throughout the U.S. on behalf of cities, private firms and non-profit organizations such as the National Main Street Center and National Trust for Historic Preservation. The firm has conducted transit-economic development assignments in communities as diverse as West Orange (NJ), Santa Cruz (CA), SeaTac (WA), and Ketchikan (AK).

This streetcar-development report has been prepared by Tess Jordan, Senior Economic Planner and Eric Hovee, Principal.

## END NOTES

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- <sup>1</sup> 2005. *Portland Streetcar Development Impacts*, E. D. Hovee & Company, LLC.
- <sup>2</sup> An FAR of 6.0:1 indicates that building square footage is six times land area of the site occupied.
- <sup>3</sup> 2005. *The Cost of Congestion to the Economy of the Portland Region*. Economic Development Research Group.
- <sup>4</sup> 2002. *The Rise of the Creative Class: And how it's Transforming Work, Leisure, Community and Everyday Life*. Richard Florida.
- <sup>5</sup> 2004. *The Young and the Restless: How Portland Competes for Talent*. Joe Cortright and Carol Coletta. [www.Restlessyoung.com/public/pdf/Portland.pdf](http://www.Restlessyoung.com/public/pdf/Portland.pdf)
- <sup>6</sup> A floor area ratio (FAR) is defined as building square footage *divided by* square footage of land (or site) area.
- <sup>7</sup> Larger scale maps for each station and vicinity are available; see City of Portland Comprehensive Plan Designations.
- <sup>8</sup> Data for improvements to land valuation is available in most communities using tax assessor data. While not all tax assessments reflect 100% of market value, the analysis is useful so long as land and improvements are assessed in a similar ratio to market, or if varying ratios can be adjusted to a similar proportion of market.
- <sup>9</sup> Excluded from the analysis are lots identified as having individual condominium units (an estimated 6,753 tax lots) as full assessor's information pre- and post-development is not available. Analysis is preliminary and subject to refinement based on further evaluation of pre-1997 and 2004 data sets.
- <sup>10</sup> 2005. *Portland Streetcar Development Impacts*, E. D. Hovee & Company, LLC.
- <sup>11</sup> 2007. *Central Eastside Development Scenarios, May 27, 2007*, E. D. Hovee & Company, LLC.
- <sup>12</sup> Development projections were itemized and isolate the impact of the Burnside Bridgehead project, the remaining planned projects (in May this included only six projects, versus the 20 identified for this report) and streetcar investment. For the conservative scenario, the density of development assumed for the Burnside Bridgehead and planned projects was decreased from developer reports by 25-50%.  
  
In the aggressive scenario, projects are assumed to move forward at the full density envisioned by developers. The increase in density – the difference between the conservative and aggressive scenarios – has been attributed to streetcar (and accompanying traffic calming measures) as the catalyst that will propel the Central Eastside District to densities beyond what the market is currently delivering.
- <sup>13</sup> Investment values are estimated in nominal (current) dollars rather than future inflated and/or discounted dollars.
- <sup>14</sup> The two eastside urban renewal areas are Central Eastside and Oregon Convention Center (OCC). As OCC is being sunsetted, it currently does not have the ability to participate in or benefit from the stimulus of added private investment.