

**Incentive Effects of Land Value Taxation in
Metropolitan Portland Commercial Corridors**

**Thomas A. Gihring, Ph.D
Kris J. Nelson, MBPA**

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Abstract

Oregon state's growth management policies and local land use regulations have had limited success in implementing goals to discourage the proliferation of commercial strips in favor of more concentrated patterns. Expectations are that a land value tax (LVT), by increasing the tax rate on land values and decreasing the rate on improvements, will stimulate more intensive development and discourage the over-consumption of land. This study is a static analysis of the incentive effects of the LVT on 868 parcels located in four 'strip' and two 'ribbon' corridors in the Portland metropolitan area. From simulated tax applications, differential-rate tax outcomes are compared to conventional tax outcomes to ascertain the direction and amount of tax shift that would occur in a transition to LVT.

The incidence findings support the expectation that low-density and auto-oriented land uses are likely to experience a positive tax shift, while building-intensive uses such as street-oriented retail and mixed-use apartments are subject to negative tax shifts. Under a redevelopment scenario, 547 underutilized parcels are redeveloped as mid-rise mixed-use buildings. By adopting the land value tax, a total of \$32.5 million is shifted off of building taxes, resulting in a combined savings of \$19 million to owners who undertake the site conversions.

About the Authors

Thomas A. Gihring is an international urban planning consultant based in Seattle, Washington. He has held academic appointments in Oregon and Nigeria, and has participated in several technical assistance projects related to housing, community and regional development. Dr. Gihring currently specializes in technical analyses of land-based taxation including value capture financing for special assessment districts.

He can be reached at tagplan@comcast.net, 2008 E. Crescent Dr., Seattle, WA 98112.

Tel: 206.328.3885.

Kris J. Nelson, as principal of Geonomics Consulting, has conducted research on the incidence of land value tax shifts in Salem, Oregon, written several reports and articles on the effects of land-based property taxation, and consulted on split-rate tax policy in Oregon.

He can be reached at krisjn@earthlink.net, 2125 SE Orange Ave., Portland, OR 97214.
Tel/Fax: 503.234.2318.

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Incentive Effects of Land Value Taxation in Metropolitan Portland Commercial Corridors

Land Value Taxation as Public Finance Reform Introduction

A state tax system that adheres to sound and accepted principles of public taxation receives legitimacy and will stand the test of time. Two of the widely accepted criteria upon which public finance reforms have been based are economic efficiency and equity. The first holds that taxes should fall on the objects that are least detrimental to economic health and should not discourage productivity – capital investment and job creation. An efficient tax does not result in excess burden or “deadweight loss” – a loss of economic output, or a shift away from productive behavior, or distorted incentives.

The equity criterion can result in attempts to equalize tax burden through progressive rate structures relative to wealth. The ability-to-pay principle can also be restated in terms of proportional benefits. That is, those benefiting from government actions should be responsible for returning a fair proportion of community-generated gain. Within the context of landed property, this benefit is conceived as a ‘giving’, or the converse of a ‘taking’ resulting from government regulation that reduces the potential value of land.

A growing number of economists maintain that the present property tax system is contrary to sound principles of public finance. The conventional method of taxing land and improvements alike is not neutral. The present equal rate tax system is said to encourage unwise land use practices by penalizing new investment in improvements and rewarding speculation on land. The consequences documented by urbanists and social reformers include urban sprawl in suburban areas and underutilization of valuable sites near urban centers. Environmentalist Alan Durning states: “Most Northwest jurisdictions seek to prevent sprawl through the regulatory tools of land-use planning. Yet a simple reform to the existing property tax would turn it into a powerful incentive for investment....”⁽¹⁾ Durning estimates that the tax on buildings engenders deadweight losses of roughly 24 cents per dollar collected.

The conventional property tax consists of one tax rate applied equally to both land and improvement assessments. In most urban settings, the average value of land amounts to about a third or two-fifths of the total assessment. In the case of vacant sites or surface parking lots, the land-to-total value ratio (LTV ratio) may reach 90 to 100 percent. On sites with high building intensity such as office or apartment buildings, the LTV ratio may drop to as low as 20%, depending upon the size and age of the building relative to the land values typical for that location.

In the instance where the conventional tax is applied to sites having few or no improvements, half of the tax rate yields no revenue. The low holding costs in locations experiencing growth and development enables owners to retain underutilized parcels

while surrounding land values increase. Unlike improvement value, which is site-specific, land value is general to a location and accrues from a multitude of community-based factors. ⁽²⁾ When jurisdictions up-zone or extend urban growth boundaries, for example, land values can increase several times over. These givings also include the locational value of new public investments in schools, parks, street and sidewalk improvements, transit, water, and sewer services. ⁽³⁾

It can be argued that because land value accrues largely through community-wide actions and investments, the local government as the steward of a community's collective assets has the right and responsibility to appropriate annual land value increments, or the "unearned" economic rent. The case for land value taxation stems from the 19th Century political economist Henry George who tirelessly promoted the "single tax" theory. His basic principle is: legitimately created value belongs to the creator of that value. Related to the factors of production, wages belong to laborers, capital belongs to capital investors, and economic rent (land value increase) belongs to the community. Georgist principles have been put into practice in several nations including the United States. The "pure" instance of a 100% land tax (no tax on improvement values) does not exist in the U.S., rather, the "split-rate" model is embodied in state enabling law of Pennsylvania. Local jurisdictions are authorized to adopt a system of differential tax rates: high on land and low on improvements.

By increasing the land portion of the property tax rate, a greater portion of publicly created value is collected. Thus, the land value tax is in effect a "betterment" tax – a tax on 'givings'. Because individual property owners create building value, reducing the tax on improvements leaves more privately generated value in private hands. The equal-rate property tax carries a disincentive to improve structures because owners are liable for significantly higher taxes. With a split-rate property tax, the lower tax on improvements increases the incentive to invest in buildings and develop underutilized and vacant sites into more productive uses. Furthermore, by raising the holding cost of land, speculation on high value central sites is discouraged. ⁽⁴⁾

LVT as a Complement to Urban Growth Management

The incentive effects of land value taxation are said to complement state-wide goals for conserving land, containing sprawl, improving the efficiency of land use in developed areas, and reinforcing land use regulatory mechanisms such as zoning and environmental standards. While the basis for land value taxation (LVT) is largely economic, and its evolution is historically separate from urban growth management, the parallel purposes are evident. ⁽⁵⁾ A split-rate property tax, as adopted in nearly 20 communities in Pennsylvania, can be expected to contribute to the following outcomes: ⁽⁶⁾

- Discourage urban sprawl
- Encourage infill development
- Discourage building disinvestment
- Intensify land development

- Discourage land speculation
- Restrain rising residential land prices

Similar desired outcomes are embraced in both the Portland Metro Regional Government's 2040 plan and Oregon's statewide land use goals. Adopted in 1995, policies in Metro's 2040 Growth Concept encourage:

- Efficient use of land
- Protection of farmland and natural areas
- A balanced transportation system
- A healthy economy
- Diverse housing options.

According to Metro's Web site, the Growth Concept "includes land-use and transportation policies that will allow the Portland metropolitan area cities and counties to manage growth, protect natural resources and make improvements to facilities and infrastructure while maintaining the region's quality of life."⁽⁷⁾

Oregon's statewide planning goals address 19 land uses and process goals to achieve coordinated, planned development among local jurisdictions. Goal 3, Agricultural lands, for example, requires counties to inventory agricultural lands and "preserve and maintain" them through farm zoning. Goal 14, Urbanization, requires cities to estimate future growth and needs for land and then plan and zone enough land to meet those needs. Each city must establish an "urban growth boundary" (UGB) to "identify and separate urbanizable land from rural land."⁽⁸⁾

Oregon has long practiced a form of incentive taxation with its method of assessing rural land uses. Known as *current use assessment*, farmlands, open space, and forestlands are assessed at current use value instead of full market value (or "assessed value") as in urban areas under recent Constitutional amendments. The effect is to encourage growers and foresters to maintain their livelihoods from natural resources and to discourage the sale and conversion of rural lands to urban uses.⁽⁹⁾

Where land-based taxation has been in practice for some time, the incentive effects have become apparent, principally in the form of new capital investment in central locations. Pittsburgh and Scranton have been using the split-rate property tax system since 1914. Over a ten-year period in Pittsburgh, the tax rate on land was raised to twice the rate on improvements. When the steel industry declined following WWII, the city increased the rate on land assessments. Soon the abandoned industrial area gave way to the Golden Triangle: some 60 new buildings and skyscrapers valued at \$700 million at the time. The privately financed redevelopment produced 16,000 new jobs in an area that had previously employed 4,000. As many of the nation's cities fell into decline during the 1970s, the revitalization of this business district attracted attention nationwide.⁽¹⁰⁾

As a split-rate tax is phased in, not only are the 20-25 percent of under-used and vacant sites in the typical large city redeveloped into more productive uses, but the community also begins to experience a moderation in land price inflation. Economists uniformly agree that as the public sector collects a larger portion of the rent from land, owners retain less value to capitalize into selling price. Sites being held for speculative gain are more costly to hold onto and, therefore, are more likely to become available for purchase and development. Vacant urban fringe sites tend to be released for either new opportunities for appropriate development or protection as open spaces, parks, or even returned to natural resource-based activity.⁽¹¹⁾ The reduced incentive to speculate at the margin reinforces wise land use decisions and a more compact urban form.⁽¹²⁾

The result of infill development over time is the gradual raising of land values in synchrony with building values. Such economic benefit then lends itself to an improvement of the local tax base, which gives rise to more publicly created revenue that can be reinvested in efficiently utilized public infrastructure and quality public services, in accord with state urban growth management policies.

Currently, a worldwide network of Geogist organizations is actively engaged in education and advocacy, setting the groundwork to effect enabling legislation for land value taxation. These include the International Union for Land Value Taxation, The Robert Schalkenbach Foundation, the Centre for Land Policy Studies (UK), Common Ground USA, the Canadian Research Committee on Taxation, and the Center for the Study of Economics (USA). The Lincoln Institute of Land Policy (Cambridge, Mass.) is an educational and research institution with a global reach, dedicated to the expansion of practical knowledge of property taxation and land policy. A network of LILP-sponsored scholars based in Latin America recently met at a conference in Buenos Aires to prepare a position statement pertaining to core land policy issues. An excerpt from the Buenos Aires declaration is pertinent to the topic of this research:

Traditional urban planning processes have lost importance and effectiveness as instruments for guiding urban development. Yet this situation offers opportunities to think about innovative ways to deal with land management strategies. Creating new practices within this framework requires making one unavoidable step: rethinking urban land taxation by incorporating new methods and keeping an open mind regarding alternative fiscal instruments intended as tools to redirect current urban development and discipline the operation of the urban land market. These new tools should not only collect funds in order to build infrastructure and provide urban services, but also contribute to a more equitable distribution of benefits and costs, especially those associated with the urbanization process and the return of recovered land value increments to the community.⁽¹³⁾

Data and Measurements

The Data Set

The focus of this study is on six commercial corridors: two located in Washington County, three in Multnomah County, and one in Clackamas County. The source of information consists of parcel level data provided by the departments of assessment of these three counties comprising the Portland Metropolitan Service Area (METRO). Data include the 2003-04 property assessments and supplementary descriptive variables pertaining to location and site utilization of parcels within the study corridors.

The raw data matrix consists of 897 tax lot records and 21 fields. Six assessment fields consist of: (i) land value, (ii) improvement value, and (iii) total value of parcels, for both real market value (RMV) assessments and taxable value assessments, as prescribed by Oregon statutes emanating from tax limitation Measures 5 and 50. The RMV assessments are used in the study to calculate unit land values and other measures that reflect actual market conditions. Taxable values are used for the purpose of calculating effective tax rates and simulated tax outcomes. Subtotals of assessed valuation for each of the six study corridors are contained in the following Table 2.1.

Table 2.1 Summary of Assessed Values by Corridor

No. Parcels*	TAXABLE VALUE			REAL MARKET VALUE		
	(1) Land Value	(2) Building Value	(3) Total Value	(1) Land Value	(2) Building Value	(3) Total Value
WASHINGTON COUNTY						
HILLSBORO CORRIDOR						
124	19,766,384	23,401,546	43,167,930	39,905,610	47,787,740	87,693,350
BEAVERTON CORRIDOR						
192	21,707,386	29,702,464	51,409,850	37,196,780	49,899,817	87,096,597
MULTNOMAH COUNTY						
SE DIVISION CORRIDOR						
153	7,221,361	13,281,089	20,502,450	16,800,220	31,654,850	48,455,070
SE HAWTHORNE CORRIDOR						
109	9,496,268	18,742,912	28,239,180	23,442,200	45,475,430	68,917,630
SE STARK CORRIDOR						
154	18,369,895	31,946,905	50,316,800	34,457,790	56,257,630	90,715,420
CLACKAMAS COUNTY						
82ND AVE CORRIDOR						
136	62,258,969	67,531,246	129,790,215	87,399,078	94,564,840	181,963,918
ALL CORRIDORS						
TOTAL	868	138,820,263	184,606,162	323,426,425	239,201,678	325,640,307
		564,841,985				

* Valid parcels

Two land use fields consist of 18 detailed and 7 general use classes generated by the researchers, using a combination of broad use codes provided in the assessors' data sets

and 2003 aerial photo overlays provided by METRO's geographic information system. For an explanation of the use classes, see Appendix 1. These land use codes are derived from activity-based criteria rather than functional categories, which in any case would not be possible to discern from photographic interpretations. Activity-based codes are more useful in an urban planning context because they reflect physical utilization of sites. Thus, rather than distinguishing between medical and financial services, as a function-based example, the classification system distinguishes between buildings that are street oriented, or that include surface parking, or that emphasize motor vehicle access vs. direct pedestrian access. See Appendix 2 for a parcel count by land use class, by corridor, and Appendix 3 for a summary of assessed values.

A 'cleaning' of the raw data set is necessary in order to avoid the inclusion of parcel records that would not yield valid calculated results. Among the 897 records contained in the original data set, 29 parcels were considered invalid. These cases either have no positive value for the field codes: land value or lot area, or are missing an improvement value on sites where the presence of buildings has been verified. The resulting database consists of 868 valid parcel records.

The cleaned and useable data matrix includes 7 property identification and location fields, 6 assessed valuation fields, 2 land use fields, 2 dimension fields (lot area and internal building area), and 3 calculated variables. The latter consist of ratios derived from real market assessments: (i) unit land value (land value per sq. ft. lot area), (ii) unit building value (improvement value per sq. ft. lot area), and (iii) the land-to-total value ratio (LTV ratio). Table 2.2 contains summary values for each calculated variable, by corridor; Appendix 4 shows the detailed breakout by land use class. Mean lot sizes are included in the calculations.

1. The first calculated ratio is useful for approximating the market value of sites across locations and land use classes.
2. The unit building value is a substitute for the preferred measure: FAR, or floor area ratio (the internal building floor space per lot area). This is a useful measure of lot utilization or development intensity. Unfortunately, the assessors' data on building square footage is incomplete, making it impossible to calculate the FAR for all parcels. The study design calls for some measure of this dimension in order to specify the redevelopment potential of underutilized sites. Thus, a surrogate variable was devised: building value per sq. ft. of lot area (BV/LA).
3. The LTV ratio indicates the proportion of the total assessed value that is attributed to land. This is the key determinant of tax shift accompanying the conversion of an equal rate property system to a land value tax. Generally, a higher than average LTV ratio on a particular site will predicate a positive tax shift – an increase in taxes under the LVT system. Appendix 3, which uses taxable values for calculating the ratio, is the appropriate reference for this purpose. Like the FAR, the LTV ratio is a useful indicator of property utilization, in monetary

terms. This measure indicates whether a site is ‘ripe’ for redevelopment. A site where the land value is high in proportion to the building value, in a location where unit land values are high, may have reached the tipping point where it is financially feasible to redevelop. Real market values are used to calculate the LTV ratio.

Table 2. 2 Summary of Unit Indicators by Corridor

Indicator	All Corridors	Hillsboro	Beaverton	SE Division	SE Hawthorne	SE Stark	SE 82nd Ave
Number of Parcels	868	124	192	153	109	154	136
Unit Land Values	\$ 11.01	\$ 10.00	\$ 8.23	\$ 17.65	\$ 21.96	\$ 7.48	\$ 13.25
Unit Building Values	\$ 14.99	\$ 11.97	\$ 11.04	\$ 33.25	\$ 42.60	\$ 12.21	\$ 14.34
LTV Ratios (RMV)	0.42	0.46	0.43	0.35	0.34	0.38	0.48
LTV Ratios (TAXABLE)	0.43	0.46	0.42	0.35	0.34	0.37	0.48
Mean Lot Size	25,035	32,192	23,533	6,223	9,794	29,910	48,492

Measuring Tax Shift

The principle purpose of this study is to examine the incentive effects of the 2-rate land value tax in comparison with the conventional equal rate tax. The stated aim of the LVT is to simultaneously stimulate more intensive development and discourage the over-consumption of land by increasing the tax on land values and decreasing the tax on improvement values.

The incentive effect, in its most basic form, can be measured by the *tax shift* that accompanies the change from the conventional tax method to the land tax method. Tax shift is either positive (an increase in tax burden) or negative (a decrease in tax burden). That is, a simulated LVT outcome is either higher or lower than the conventional tax outcome. The incentive effect of LVT is achieved if the tax shift on intensively used parcels is negative. That is, landowners would receive the benefit of comparatively lower taxes with the conversion to LVT. Conversely, the incentive effect is also achieved if the tax shift on low density or underutilized sites is positive. Thus, landowners would be encouraged to invest in higher value improvements, or sell their sites to developers who will redevelop the sites. If landowners actually responded to these financial incentives, a trend would emerge towards infill development and the gradual densification of high value centers, districts and corridors.

By simulating the application of tax rates to the assessed values of parcels and comparing the tax results, the amount and direction of tax shift can be determined. Under the conventional system, a parcel’s tax bill is calculated by multiplying the total assessed value by the levy rate that applies to the appropriate levy code area. Under the 2-rate system, the total levy rate is split, the higher land rate applied to the land assessment, and the lower improvement rate applied to the building assessment. There are several methods of generating differential rates.

The 2-Rate Tax Simulation Method

One technique, which might be termed the LVT Ratio method, determines the percent of the levy rate that the taxing authority chooses to apply to land values. Thus, whereas the *effective* equal rate conventional tax ratio is 50%, a chosen LVT Ratio might be 75%, resulting in a split rate whereby 75% of the total tax rate is applied to land assessments and 25% of the rate is applied to building assessments. Another technique for establishing differential rates is the Building Rate Reduction method. In this instance the chosen ratio represents the amount by which the building portion of the levy rate is reduced, and the land rate becomes a residual. For example, a 50% BRR indicates that the conventional tax building rate is to be reduced by half.

When introducing a LVT to replace the conventional tax, it is common practice to make the total amount of land value tax to be collected *revenue-neutral*, or equal to the amount that would have been raised by the conventional tax. Thus, the land tax rate as a residual would be determined as the rate necessary to “back-fill” the balance of revenue needed to meet revenue-neutrality. For both methods algebraic formulas have been devised that make the calculations relatively uncomplicated. See Appendix 5 for step-by-step calculations to derive tax rates using the BRR method. This method was chosen for the purpose of simulating revenue-neutral tax applications in this study.

The consensus among LVT proponents is that a 2-rate system should be gradually introduced to a taxing jurisdiction so as to minimize possible economic dislocation resulting from precipitous tax shifts. A phase-in period allows property owners affected by higher tax burdens under LVT an opportunity to make adjustments by lowering lot sales price expectations or reinvesting in new capital improvements. A transition period of ten years or more might be implemented during which the land / building tax rate differential would gradually increase.

For this study, a series of five successively higher BRR ratios is chosen to illustrate how different split rate levels will affect tax shift. These are: 10% BRR, 20% BRR, 30% BRR, 40% BRR, and 50% BRR. By way of comparison, a reduction of the building tax rate by 50% is roughly equivalent to a 78% LTV ratio (where 80% of the total rate is applied to land assessments). Rather than applying these rates at the county level to simulate a general property tax, the rates will be specific to each study corridor. In effect, this simulates the tax outcomes that might take place within special assessment districts. Thus, for the purpose of illustrating tax effects in this study, revenue neutrality is at the study corridor level. The entire tax shift takes effect within each corridor, where positive and negative shift in terms of dollar amounts will net out to zero. Derived tax rates for each corridor are contained in Appendix 6.

The conventional tax rates are obtained from county records that contain the 2003-04 mill rates for each levy code area located within a corridor. Most of the corridors lie within a single LCA. For the two corridors containing multiple LCAs, a weighted average of the reported rates is calculated to produce a single mill rate (see Appendix 6). Thus, for each

of the six corridors one conventional rate and five BRR rates are derived, yielding the same total tax revenue.

Levels of Analysis

The analysis of tax shift within study corridors takes place at three levels of parcel aggregation, as follows:

1. The first level aggregates parcels by general land use (7 classes). Simulated tax applications are performed using the five split rate levels identified above. The comparative tax outcomes are graphed, seven for each corridor. The aim is to give a general impression of the direction and level of tax shift within each land use class.
2. The second level aggregates parcels by specific land use (18 classes). Here, the 50% BRR tax is used to facilitate a more detailed look at variations in tax shift across land use classes.
3. Tax applications are performed on the entire set of records contained within each corridor, at the 50% BRR level. The purpose of simulating tax bills for individual parcels is to count the number of parcels experiencing positive and negative tax shifts, as well as to sum the amount of positive and negative shift.

The Study Area

Commercial Corridors as a Study Focus

Six commercial corridors located within the Portland metropolitan area were selected to illustrate the tax incentive effects accompanying the introduction of a land value property tax system. There are two practical reasons for focusing on commercial properties comprising “strips” and “ribbons”. First, among all the classes of property, commercial uses will show the most variability in simulated tax outcomes. Residential parcels, by way of contrast, will result in little variation in the differences between conventional taxes and 2-rate taxes. Single-family parcels typically comprise 80 to 85 percent of the total number of properties within a large jurisdiction; as the predominant class they will drive the outcome of the comparative results. Furthermore, the lot utilization of this class is comparatively uniform due to zoning standards and conventional building methods. Also, high value residences tend to locate in high value areas, and *vice versa*. As a result, the ratio of land-to-total assessed values (LTV) will vary only moderately; 2-rate and conventional taxes will differ by only a few percentage points. On the other hand, commercial uses are highly dissimilar in terms of lot utilization and value. Compare, for example, the differences in building intensity between office buildings and surface parking lots. Because of the contrasts in site utilization and the different location values of commercial districts, comparative tax outcomes will vary widely.

Secondly, commercial corridors fit well into the current policy context that encourages the more intensive utilization of land along major thoroughfares. For example, the Portland comprehensive plan has for several years contained goals that discourage the proliferation of strip commercial development, in favor of more concentrated or clustered

patterns. Recent regional policies promote the redevelopment of commercial strips to include mixed uses, more convenient access to shopping facilities from residences, and safer, less automobile-dependent travel. The Portland zoning code contains a special use class “Urban Strip Conversion District”, the purpose of which is to minimize adverse safety and value impacts on adjacent uses. Placing a study of incentive taxation effects within this policy context is useful for testing the efficacy of the land value tax system. If the tax shifts accompanying a LVT favor more intensive development, the potential for helping to transforming underutilized strips into economically viable, environmentally attractive and sustainable higher density mixed use corridors is enhanced.

The General Character of Commercial Strips and Ribbons

In physical terms, strips and ribbons are groupings of commercial establishments that take on a linear form, fronting on local streets, thoroughfares, or inter-urban highways. A wide variety of commercial uses are found in both, but each emphasizes a different mix.

Strips normally follow the path of high-order streets: highways and thoroughfares carrying high traffic volumes. Often they serve a market demand originating on the arteries themselves, where shopping trips frequently involve opportunity stops. In some cases the strips are an extension of a major shopping center. Some sectors within strips serve specialized functions and offer comparison-shopping, “auto rows” being an example. For the most part, commercial establishments are configured for the convenience of motorists.

Ribbons typically follow the path of lower-order streets: neighborhood collectors. Historically, they developed during the streetcar era, before the predominance of automobile travel. In most cases ribbons still serve as convenience centers, although some have developed into specialty shopping zones serving a large market area. Antique rows are an example of this. Their main physical characteristic is zero lot line contiguous building frontage, with a strong pedestrian orientation. The market area of ribbons is more limited and local than that of strips; most serve the neighborhoods in which they are located.

Corridors Selected for Study

In the choice of corridors for this study, a variety of factors were considered by METRO, such as: (i) the inclusion of at least one corridor in each county within the metropolitan district, (ii) growing and declining urban settings, (iii) emerging and mature development status, (iv) auto-dependent and pedestrian-oriented streetscapes. Locations of the selected corridors are shown in Figure 3.1.

The following six corridors are featured in this study:

Corridor:

Street Range:

WASHINGTON COUNTY:

Hillsboro

SE 10th Avenue and SE Washington to
SE 21st Avenue and SE Tualatin Valley

Highway

Beaverton

SW Tualatin Valley Highway,
SW 174th St. to SW 198th St.

MULTNOMAH COUNTY:

SE Division St.

SE 20th Ave. to 39th Ave.

SE Hawthorne Blvd.

SE 20th Ave. to 39th Ave.

SE Stark St.

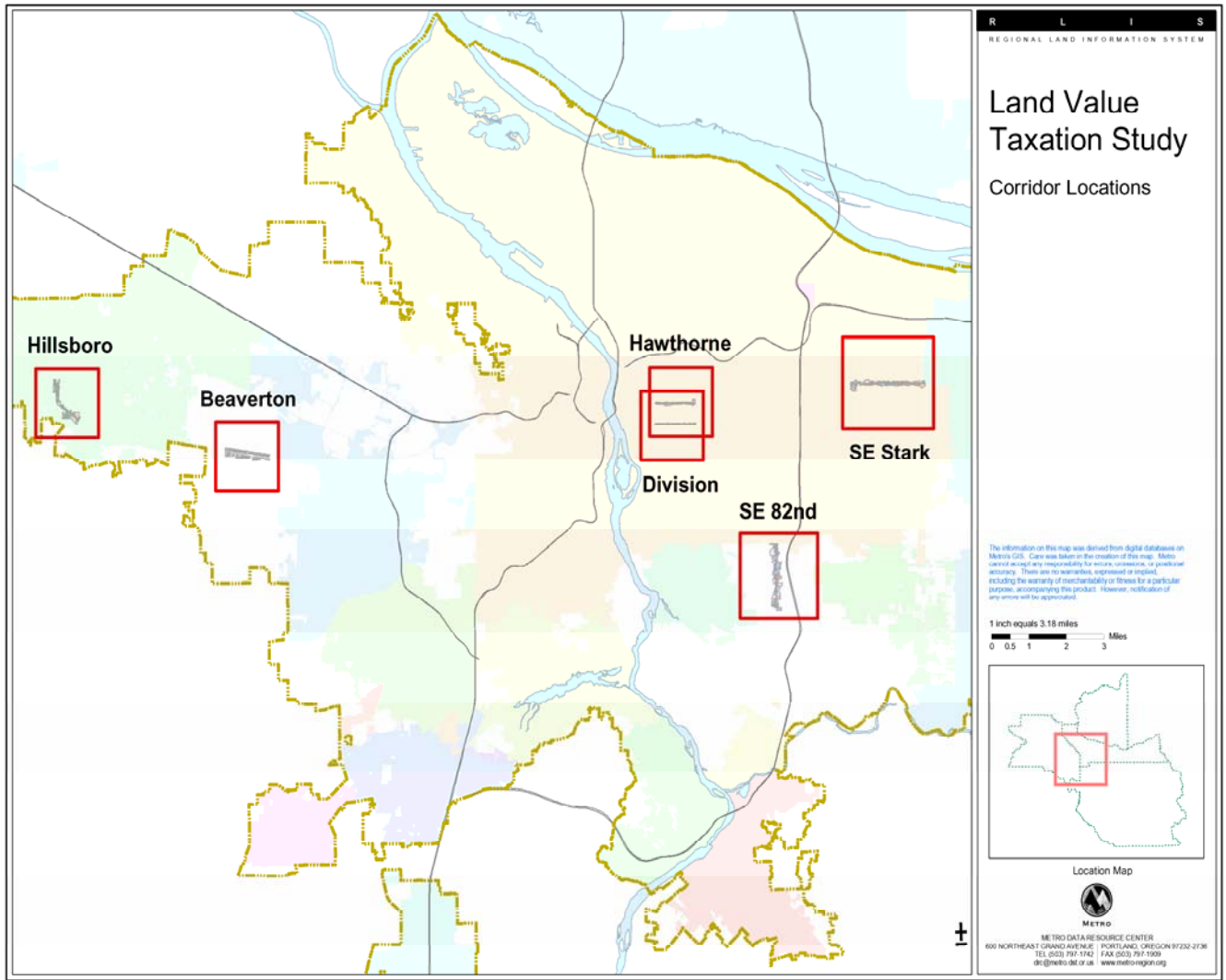
120th Ave. to 160th Ave.

CLACKAMAS COUNTY:

SE 82nd Ave.

SE Luther Ave. (8500 block) to
Clackamas Town Center (SE
Monterey Ave.)

Figure 3. 1 Corridor Location Map



A Description of Selected Corridors

Hillsboro Corridor. Located on a major thoroughfare adjacent to the town center of the metropolitan region’s western municipality, this corridor is typical of the inter-urban commercial strip. It contains a high proportion of land-extensive uses, including over a million sq. ft. of lot area devoted auto-oriented businesses, and more than half of the vehicle sales establishments found in all six corridors. The highest number of multifamily complexes, and the largest manufactured home park are located here. This Tualatin-Valley Highway strip ranks second in average lot size and in the number of parcels devoted to surface parking lots. Unit building values, at \$12 per lot sq. ft. are well below average, and the mean LTV ratio (.46) is close to the highest. Both measures indicate a likely positive tax shift.

Beaverton Corridor. As a commercial strip, this eastern T-V Highway sector is average in land use intensity. It holds the highest number of single family home sites with the largest average lot size (15,800 sq. ft.), and a quarter of all multifamily parcels. This corridor has no parcels devoted to vehicle sales, but its vehicle service establishments are the most extensive in lot area, averaging over 33,000 sq. ft. in size. It also contains an above average number of surface parking lots and vacant lots. Unit building values, at \$11 per sq. ft. lot area, are the lowest among the corridors; unit land values are also among the lowest. Both unit values being low, the LTV ratios are about average for the six-corridor selection. However, among the land uses classes, high LTV ratios are found on single family sites and on setback retail building sites as well as on shopping plaza sites.

SE Division Corridor. Located amongst Portland's Inner Southeast neighborhoods, this four-lane major collector street segment is an example of an emerging commercial ribbon. It contains the second highest number of single family lots, and a high number of street-oriented commercial buildings. The number of auto-oriented retail uses and off-street parking lots is second lowest. The only auto-oriented uses that do exist are a few vehicle service and commercial establishments. There is only one vacant parcel in this 18-block sector. Being an inner-city location, average lot sizes are low; at 6,223 sq. ft., the overall mean is the lowest among the corridors. Unit land values are well above average, as are unit building values. Reflecting the predominance of building-intensive uses, this ribbon measures low LTV ratios across most use classes.

SE Hawthorne Corridor. Located a few blocks north and parallel to the Division corridor, the Hawthorne streetscape is typical of a mature ribbon. In many ways it is similar in character to Division, and it serves an overlapping local market area. However, this shopping street has emerged from a long transition period into one of Portland's more desirable pedestrian precincts. Twenty years ago the corridor was beset by heavy motor traffic and the accompanying problems of street noise, congestion, absentee ownership, dilapidated buildings, and perceptions of crime. Reflecting the loss of population in the surrounding neighborhoods, the corridor was known for its profusion of antique shops and bookstores. The upward trend began slowly, with the only significant new construction consisting of suburban style set-back buildings with off-street parking frontage. With the advent of new walk-in restaurants, cafes and a variety of specialty shops, Hawthorne began to attract a larger number of patrons from the surrounding neighborhood which was increasing in population and land values.

Having the highest proportion of street-oriented buildings, this ribbon features very little surface parking, no vacant lots, and few auto-oriented uses. Its low average lot sizes are comparable to Division. Hawthorne contains the highest proportion of street-oriented retail buildings and converted residences. Densely occupied by retail and multifamily mixed-use buildings, there remain few single family homes in the corridor. The number of auto-oriented retail, service, and commercial uses is the lowest, and it is the only corridor with no vacant lot. Unit land values, at \$21.96 per sq. ft., are more than twice the six-corridor average; unit building values (\$42.60) rank highest at nearly three times

the average. With the lowest LTV ratio of .34, this compact ribbon is expected to experience negative tax shifts.

SE Stark Corridor. This emerging commercial strip serves the growing population in mid-eastern suburban Multnomah County. Much of the growth can be attributed to new multifamily development coincidental with the eastside MAX light rail line a few blocks to the north. What is unique about this strip is the high proportion of residential uses, particularly multifamily. Most of the properties, including converted residences, are situated on low value sites. Mean lot sizes, both residential and commercial, are well above average. Stark holds the highest square footage of shopping center space. There are an above average number of large vacant lots and vehicle service agencies. The overall unit land value (\$7.48) is lowest among the corridors. Although building values are well below average, they are not proportionately as low as site values. This produces the lowest LTV ratio (.38) among the strips, and is probably explained by a proliferation of new commercial development and the prevalence of low value residential sites.

SE 82nd Ave. Corridor. This quintessential thoroughfare strip emerged as an extension of the Clackamas Town Center regional shopping center, and straddles the municipal boundary between Portland and Milwaukie. It holds the most auto-dependent, land-extensive uses, as well as the largest number of independent surface parking lots and vacant sites. It also contains the least number of residential sites, although three manufactured home parks outnumber the other corridors. The average lot size is the by far the largest, at nearly double the overall average, particularly in the shopping center, vehicle sales, and surface parking land use classes. There are no street-oriented retail buildings in this highly motorized corridor. Land values are above average (highest among the strips), whereas unit building values are slightly below average. This results in the highest LTV ratios among all the corridors. If not a declining strip, the 82nd Ave. corridor is certainly lacking in new building investment.

Tax Burden Shift Accompanying LVT

Associating Land Utilization with Assessed Values

The split-rate land value tax shifts the major portion of the total tax rate to land values. Properties most affected by the land tax are those with high or low LTV ratios. Because the LVT's split tax rate falls principally on land values, parcels on which the land value comprises a high proportion of the total assessment will experience an increase in tax burden. Conversely, where the building portion of the assessment is comparatively high, the tax burden will decrease. Appendix 7A shows the frequency distribution of LTV ratios among all 868 valid parcels; the mean ratio figure is .507. Because the intent of incentive-based taxation is to influence land utilization decisions, the operational question is whether this value-based ratio is a valid indicator of land use intensity.

To know whether the land value tax has an incentive effect on land use decisions, it is necessary to verify a conclusive association between the value ratio LTV and an appropriate measure of land utilization. Building intensity as a physical indicator of land utilization is commonly expressed as the ratio of building internal square footage to lot area, or FAR (floor area ratio). If the *site ratio* FAR correlates with the *value ratio* LTV, then one can expect the land value tax to affect properties according to their intensity of use. As reported previously, the raw database contains only partial data on the internal square foot measurement. Nevertheless, it is possible to draw inferences from a limited subset of parcels for which the floor area values are reported. Multnomah County assessment data does include this data field from which the FAR can be calculated.

There are 514 parcels for which the FAR can be calculated. The frequency distribution of FAR values is shown in Appendix 7B; the mean FAR is 0.41. Comparing the two data arrays, FAR and LTV, the correlation coefficient is found to be reasonably strong ($r = -.57$). This is an indication that parcels with high land-to-total value assessments are likely to have a low rate of lot utilization. An illustration of the observed association between value and site ratios is found in Appendix 7D. In this instance, mean ratio values are calculated for each land use class (with the exception of codes 17 and 18 – surface parking lots and vacant sites, on which FARs are practically null). The correlation coefficient for this subset is $-.72$.

Because FAR values cannot be determined on all parcels, the surrogate variable BV/LA (building value per sq. ft. of lot area) is substituted. Appendix 7C shows the frequency distribution of unit building values. This combination value/site ratio is found to be a satisfactory surrogate for the FAR; the correlation between the two variables performed on the 514-parcel subset is .82. Using the entire data set of 868 parcels, the correlation between the BV/LA ratio and the LTV is .72, similar to the FAR and LTV correlations found in the limited subset as reported above. Thus, the answer to the operational question is the affirmative; the value ratio LTV is a valid indicator of land use intensity.

As a preliminary to the illustrations of tax shift, it will be useful to examine some of the variations in taxable assessments that occur across the study corridors. As a causal variable, the LTV ratio will affect tax outcomes. Examining the taxable assessed valuation summaries in Appendix 4.3B, the overall LTV ratio is found to be .43; that is, the sum of the land assessment in all corridors combined constitutes 43% of the total assessment. Compared to the LTV ratios of properties outside the corridors, all of the corridor figures are high. Historically, the annual LTV ratios for countywide total assessments in Multnomah County have been averaging .30 or .31. In Washington County, value ratios had been averaging about .35 until the latest assessment period when the figure reached .40. The latest Clackamas County overall LTV ratio stands at .40, which can be compared to the 82nd Ave. corridor value of .48.

A high average land value ratio would be expected within the bounds of corridors, considering the low level of land utilization that is typical of commercial strips (including extensive amounts of land devoted to parking). Indeed, the LTV ratios for the four commercial strips comprising 70% of all the corridor parcels are higher than the two ribbons (Division and Hawthorne). More building-intensive development in the ribbons shows up in higher building assessment ratios. But, because it is possible that assessment practices may differ among the three counties (accounting for differences in countywide LTV ratios), it is not valid to make direct comparisons across all corridors.

The SE 82nd Ave corridor is typical of the assessment ratios that would be expected in a strip – higher than average LTV ratios in almost all land use categories. But, what also distinguishes this corridor is the high unit land and building ratios compared to the other strips. This is either a reflection of high land prices in this corridor, or a function of assessment practices in Clackamas County that assign higher values in general, or both. The case for the latter is supported by the two observations that (i) total building value for a similar array of commercial uses is also much higher than the norm, and (ii) the effective conventional tax rate is considerably lower than the rates applicable to Multnomah and Washington counties.

Tax Burden Shift Among Land Uses

The objective here is to compare tax shifts accompanying the conversion to a 2-rate land value tax – across land use classes and across commercial corridors. In the first level analysis, general land use categories are employed, where simulated 2-rate tax outcomes are illustrated at all five LVT levels ranging from a 10% building rate reduction to a 50% BRR. The purpose is to give a general impression of the direction of tax shift that would occur during a phase-in period, where the building rate reduction level gradually increases over time. It should be noted that these illustrations are not an accurate portrayal of an actual phase-in, because over time both property assessments and annual tax rates would change. The second level analysis employs detailed land use categories, where the tax simulations are performed at the 50% building rate reduction level. This will help to explain the variations that might exist within general land use classes. In the

final analysis, the number of parcels in each corridor experiencing positive and negative tax shift are reported.

Tax Shift: General Land Use Classes

Table 4.1 is a summary of simulated tax outcomes across general land use classes, comparing results from a conventional tax with the results of a graduated 2-rate land value tax. The table shows total revenues from all six corridors combined. For purposes of illustrating comparisons in tax shift, the tax calculations for 7 general land use classes are converted to average tax per parcel. The accompanying set of graphs found in Appendix 8 show the land / improvements breakdown and the direction of tax shift over the series of progressively higher land tax rates. The most markedly consistent pattern of tax shift is the upward shift associated with the surface parking and vacant land use classes, and the downward shift within the multifamily residential class. There are, however, significant variations across corridors.

Table 4. 1 Tax Burden Shift by General Land Use Class

All Corridors

General Land Use Class	# Parcels	CONVENTIONAL	2-RATE TAX				
		TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
Single family, Manufactured home	253	\$ 581,367	\$ 588,285	\$ 595,204	\$ 602,123	\$ 609,042	\$ 615,961
Multifamily	74	\$ 734,121	\$ 707,099	\$ 680,076	\$ 653,054	\$ 626,031	\$ 599,009
Street oriented retail, Res. conversion	102	\$ 356,314	\$ 352,192	\$ 348,070	\$ 343,949	\$ 339,827	\$ 335,705
Retail, Prof. services + parking	230	\$ 2,658,241	\$ 2,648,913	\$ 2,639,584	\$ 2,630,255	\$ 2,620,926	\$ 2,611,597
Auto oriented retail, service, commercial	116	\$ 897,239	\$ 909,364	\$ 921,489	\$ 933,615	\$ 945,740	\$ 957,865
Surface parking	57	\$ 241,033	\$ 256,833	\$ 272,632	\$ 288,432	\$ 304,232	\$ 320,032
Vacant	36	\$ 43,570	\$ 49,199	\$ 54,828	\$ 60,457	\$ 66,086	\$ 71,715
TOTAL	868	\$ 5,511,884	\$ 5,511,884	\$ 5,511,884	\$ 5,511,884	\$ 5,511,884	\$ 5,511,884

General Land Use Class	# Parcels	CONVENTIONAL	PERCENTAGE CHANGE				
		TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
Single family, Manufactured home	253		1.2%	2.4%	3.6%	4.8%	6.0%
Multifamily	74		-3.7%	-7.4%	-11.0%	-14.7%	-18.4%
Street oriented retail, Res. conversion	102		-1.2%	-2.3%	-3.5%	-4.6%	-5.8%
Retail, Prof. services + parking	230		-0.4%	-0.7%	-1.1%	-1.4%	-1.8%
Auto oriented retail, service, commercial	116		1.4%	2.7%	4.1%	5.4%	6.8%
Surface parking	57		6.6%	13.1%	19.7%	26.2%	32.8%
Vacant	36		12.9%	25.8%	38.8%	51.7%	64.6%
TOTAL	868		0.0%	0.0%	0.0%	0.0%	0.0%

The **single family** class shows the least amount of change in tax burden accompanying the progressive introduction of a land value tax. This is a normal development in the wider context of an entire jurisdiction or metropolitan area, simply because of the large number of such properties within the total assessment. The overwhelming size of this land use class will affect the average, leaving most of the variation in tax shift to the remaining classes. But, single family properties found *within commercial corridors* would normally be the exception rather than the rule. One might expect that the activity and amenity effects within strips in particular would degrade the value of residential property, lowering land values. In fact, the unit land value figures \$8.40 and \$3.86 per sq. ft. lot area found in Appendix 8 do show this to be true. However, unit building values are also low. Hence, low value buildings on low value lots result in negligible tax

shift. Beaverton is the one exception, where very low building values result in an upward tax shift of 4.1% - 20.5% (at the 10% BRR – 50% BRR levels).

There are 74 existing **multifamily** parcels within the study corridors. On average, these properties experience a negative tax shift of -3.7% to -18.4 percent. This amounts to an average change in annual tax burden from about \$9,000 to \$7,000. The greatest proportional negative tax shift (-22.2% at 50% BRR) is found in the SE Stark corridor where a third of all multifamily properties are located. The single exception to the general effect is found in the SE 82nd Ave corridor, where an upward tax shift takes effect. There are only two properties in this class, the unit building value being far below average, \$3.21 per sq. ft. lot area.

Street oriented retail buildings are typically found in commercial ribbons rather than strips. Single family houses converted to commercial use are in some sense also “street oriented” and are found in both, although these combined have a higher LTV ratio. There is considerable variation in tax results for this class. A significant reduction in average tax burden (-13%) is found in the SE Division corridor, whereas a 31% increase (at 50% BRR) is found in the Beaverton corridor. The difference is largely attributed to the sharp difference in the unit building values (reflecting building condition) of residential conversions (\$35.21 in SE Division vs. \$4.94 in Beaverton).

Retail, professional services + parking is the largest among the commercial land use categories. All feature setback buildings with off-street parking. There is some variation among corridors with respect to tax shift, although the shifts are moderate. The most significant positive shift is found in the two ribbons. This indicates that the negative tax shift on buildings with greater lot coverage (which prevail in these two corridors) offsets the tax shift effects of properties with more extensive area devoted to setbacks and parking. Tax results in the SE 82nd Ave corridor are exceptional, not in terms of tax shift but because of the high tax amounts on these parcels (Note the Y-scale maximum value change at 2R). This is explained by the large lot sizes in this use class, averaging 77,403 sq. ft. – double the class average.

The same offset effect with respect to tax shift is augmented in the case of the **auto oriented retail, service, and commercial** use class. The SE 82nd Ave corridor contains the highest proportion of these uses. On average, this class experiences a 6.8% increase in tax burden at the 50% BRR level. In terms of both percentage shift and mean tax amounts, the Stark and SE 82nd Ave corridors are the most affected by a positive tax shift.

There are 57 **surface parking** lot parcels in the study corridors exclusively devoted to this use. The largest numbers of lots are found in the Hillsboro and SE 82nd Ave corridors. Because of the high value of land compared to improvements (average LTV ratio: .75), the tax shift is consistently positive. The average tax shift is 6.6% to 32.8%, increasing the average conventional tax of about \$4,700 to a 50% BRR 2-rate tax of about \$6,300. The highest rate of increase (18.1% - 90.6%) is in the Hawthorne ribbon where, as expected, this land-intensive use contrasts greatly with the balance of uses that

reflect a much higher level of lot area utilization. Even so, the mean tax amount increases from only \$1,463 to \$2,787, comparable to a similar low tax pattern found in the Division ribbon. By way of contrast, the highest mean 2-rate tax amount in the SE 82nd Ave corridor is \$10,851, up 25% from the conventional tax of \$8,681. Again, the difference is largely due to the comparative average size of parking lots.

Vacant parcels are most numerous in the SE 82nd Ave corridor, whereas in the Hillsboro corridor vacant unit land values are highest. Although the rates of positive tax shift are high in all corridors relative to other use classes, the percentages are significantly higher in the SE Division and SE Stark corridors. No vacant sites exist in the SE Hawthorne ribbon. The average conventional tax amount on vacant parcels is low in all corridors, ranging from \$333 in the SE Division ribbon to \$1,298 in the SE 82nd Ave strip. Even with positive tax shift at rates approaching 90%, total tax amounts at the 50% BRR level remain comparatively low.

Tax Shift: Detailed Land Use Classes

The detailed descriptions of land use categories offer a better understanding of the variations in tax shift that occur within broad land use classes and across corridors. Tax shift on parcels grouped by 18 land uses classes is reported in Appendix 9, and summarized in the following Table.

Table 4. 2 Tax Burden Shift by Land Use Class

ALL CORRIDORS

LUCode	Land Use Description	No. Parcels	Conventional Tax	2-Rate Tax 50% BRR	Tax Differential	Tax Shift
1	Residential - Single Family	247	\$ 495,153	\$ 524,696	\$ 29,543	6.0%
2	Manufactured home park	6	\$ 86,214	\$ 91,266	\$ 5,052	5.9%
3	Residential - Multifamily	18	\$ 129,164	\$ 100,487	\$ (28,677)	-22.2%
4	Residential - Multifamily + parking	56	\$ 604,957	\$ 498,521	\$ (106,436)	-17.6%
5	Business - converted residence	44	\$ 96,625	\$ 101,119	\$ 4,495	4.7%
6	Retail - building street oriented	58	\$ 259,689	\$ 234,586	\$ (25,103)	-9.7%
7	Retail - building setback	4	\$ 8,385	\$ 10,382	\$ 1,997	23.8%
8	Retail - building setback + parking	142	\$ 873,436	\$ 889,664	\$ 16,228	1.9%
9	Retail - building street oriented + parking	32	\$ 129,314	\$ 145,868	\$ 16,554	12.8%
10	Retail - shopping plaza + parking	15	\$ 338,220	\$ 322,050	\$ (16,170)	-4.8%
11	Retail - shopping center + parking	19	\$1,204,133	\$1,139,492	\$ (64,640)	-5.4%
12	Professional services + parking	18	\$ 104,754	\$ 104,142	\$ (612)	-0.6%
13	Retail & Svc. - auto oriented + parking	31	\$ 259,214	\$ 260,292	\$ 1,078	0.4%
14	Retail - auto/RV/boat sales + parking	17	\$ 237,519	\$ 270,963	\$ 33,444	14.1%
15	Vehicle service + parking	29	\$ 134,070	\$ 149,638	\$ 15,567	11.6%
16	Commercial + parking	39	\$ 266,435	\$ 276,972	\$ 10,537	4.0%
17	Surface parking	57	\$ 241,033	\$ 320,032	\$ 78,999	32.8%
18	Vacant lot	36	\$ 43,570	\$ 71,715	\$ 28,145	64.6%
Total		868	\$5,511,884	\$5,511,884	\$ (0)	0.0%

By separating **single family** lots from manufactured home sites, it becomes evident that the largest use class experiences the highest positive shift in both Beaverton and Hillsboro. In other corridors tax shift is negligible.

Overall, there is little difference between **multifamily** properties without or with resident parking. The incidence of street oriented buildings with no surface parking, however, does entail a greater 2-rate tax advantage within the two ribbons.

Within the third general class of **street oriented commercial** uses, converted residences as a whole are subject to an upward tax shift, whereas zero lot line buildings experience a downward shift of nearly ten percent at the 50% BRR level. This generally consistent pattern is most amplified in the Hillsboro strip, although the numbers of parcels are small compared to the ribbons where the numbers are high but the rate of tax shift is muted. In general, unit land values of converted residences are higher than the values of single family lots used as residences (\$10.28, \$8.40). However, the unit site value of retail buildings in this category is the highest of any land use class (\$22.64).

The largest general use class contains **retail and professional services buildings that are set back** from the street and/or feature generous off-street parking. There is a large amount of variation in tax effects across corridors, but in general, classes 7, 8 and 9 experience a positive shift while the shopping centers, plazas, and professional services buildings (classes 10, 11 and 12) encounter a moderate decline in tax burden. The decline cannot be explained by generally higher building values among shopping centers and plazas, nor can it be explained by generally lower site values. Only the differences in building conditions and site values on individual properties would seem to explain the high degree of variation in tax shift.

Within the **auto oriented** class of uses, the tax shift is consistently positive. The highest proportions of tax shift occur in classes 14 and 15, vehicle sales and services. The 2-rate tax impact on vehicle sales properties is most felt in the Hillsboro corridor; on service establishments it is experienced more heavily in the SE Division and SE Stark corridors.

Tax Shift: Individual Parcels

Simulated tax applications can be performed on the entire set of parcels within a corridor. Because the 2-rate tax rates are revenue-neutral at the corridor level, the total marginal increase in revenue resulting from positive tax shift within each corridor will equal the revenue decrease from negative shift.

Table 4.3 Parcels Experiencing Positive or Negative Tax Shift

Current Development Status		Positive Tax Shift				Negative Tax Shift			
Corridor	Total Parcels	No. of Parcels	% Positive Shift	Total Tax Shift*	Mean Tax Shift	No. of Parcels	% Negative Shift	Total Tax Shift*	Mean Tax Shift
Hillsboro	124	86	69.4%	\$ 52,082	\$ 606	38	30.6%	-\$52,082	-\$1,371
Beaverton	192	142	74.0%	\$ 82,739	\$ 583	50	26.0%	-\$82,739	-\$1,655
SE Division	153	98	64.1%	\$ 30,914	\$ 315	55	35.9%	-\$30,914	-\$562
SE Hawthorne	109	56	51.4%	\$ 52,369	\$ 935	53	48.6%	-\$52,369	-\$988
SE Stark	154	90	58.4%	\$ 107,874	\$ 1,199	64	41.6%	-\$107,874	-\$1,686
SE 82nd Ave.	136	88	64.7%	\$ 171,712	\$ 1,951	48	35.3%	-\$171,712	-\$3,577
ALL	868	560	64.5%	\$ 497,691	\$ 889	308	35.5%	-\$497,691	-\$1,616

* 50% BRR

Table 4.3 indicates that 560 of the 868 total parcels (64.5%) experience an increase in tax burden under the 2-rate land value tax. The total positive tax shift in all six corridors under a 50% BRR is just under \$500,000. To understand the reason for the

comparatively high frequency of *positive* shift, one must recall the type of parcels included in the positive and negative groupings. Positively impacted parcels are more likely to consist of vacant lots, parking lots and other low value uses. The conventional tax on this group is comparatively low to begin with. Parcels experiencing a negative shift typically contain high value buildings on high value sites, where conventional tax amounts are considerably higher. As a point of reference, the conventional tax on negative-shift parcels amounts to an average of \$1,616; on positive-shift parcels the mean tax is \$889. Thus, revenue neutrality will necessitate a higher number of parcels in the positive group to make up the difference in tax revenue ‘lost’ from the shift in the negative group.

The largest tax reduction amount is found in the SE 82nd Ave. corridor where assessed values and conventional taxes are the highest, although the rate of tax shift is about average. The smallest average tax decrease is found in the SE Division corridor. As for the proportionate number of parcels affected, the Beaverton corridor followed by Hillsboro experience the highest incidence of tax increase. The SE Hawthorne ribbon contains the highest proportion of parcels affected by negative tax shift.

Among the six corridors, there is found to be an approximate relationship between the rank order of proportional positive tax shift and the LTV ratios derived from RMV assessments. It is because revenue neutrality is established at the corridor level that there is not a closer relationship between the two measures. Were the tax rates derived from grand total assessments of the combined corridors, or at the larger metropolitan level, the tax shift results would closely parallel the LTV ratios. As it is, the tax shift experienced by individual parcels is determined by the values and utilization of other parcels *within* each corridor.

Conclusion

The important question is whether the 2-rate tax incentive effects are evident in the tax simulation results. In a general sense, one must conclude that the evidence supports the premise that tax burden relief on more intensely utilized properties does result from the land value tax. But only within, not across corridors, is the evidence conclusive. Within the four strips are found a high proportion of land-extensive uses. As a group, the most underutilized or low-density sites will experience a positive tax shift; but other parcels, somewhat higher in land use intensity but lower than other parcels located within ribbons, will experience a tax decrease. Thus, retail set-back buildings + parking located in SE Hawthorne (which are sites utilized less intensively than most others) will see a tax increase, while the same uses on the SE 82nd Ave. strip will see a tax reduction. As nearly as one can determine, it appears that the incentive effect is most evident in the ribbons where a balance of building-intensive and land-extensive uses exists.

In any case, the tax burden under the land value tax has been shifted off of building values, by 50 percent. Total tax revenues yielded from the building tax under the conventional tax system amount to \$3,191,758, or 38% *more* than the taxes from land values. Building taxes raised from the LVT amount to only \$1,595,879, which is 59%

less than the tax on land values. Seen in this light, the built-in incentive of the land value tax is evident.

The question now remains: What is the positive incentive to owners of parcels that are currently underutilized – those currently subject to an increase in taxes? Thus far, the incentive effects of a land value tax have been measured in terms of tax shift. It has been found that within corridors, parcels characterized by low lot utilization experience positive shift – an increase in tax burden compared to the conventional tax. It remains to test the hypothesis that the same underutilized parcels, if redeveloped, would benefit from comparatively lower taxes under the land tax system.

Testing the Incentive Effects of LVT

Exploring the Benefit Hypothesis

The incidence of positive tax shift could conceivably be viewed as a contrary outcome of the LVT as an incentive tax. However a beneficial aspect is also present, as landowners experiencing comparatively higher taxes under LVT would want to know not only how to deal with the added financial burden, but what they would gain in tax savings by investing in new substantial building improvements. In dollar amounts, the savings in property taxes on newly redeveloped sites is expected to greatly exceed the marginal increase in taxes on underutilized sites.

The second major part of the study design replicates LVT tax burden differentials on selected parcels under two conditions: presently underutilized and potentially redeveloped. The first step is to identify the present development status of all parcels in the six corridors, namely those ‘fully developed’ and those ‘underutilized’. A threshold criterion is applied to each parcel to determine its current status. In the second step, simulated tax applications are performed on the two aggregated sets of parcels, and the tax results from the conventional and LVT systems are compared.

The next step determines the parameters of a ‘redevelopment scenario’, describing the uses and the size of replacement buildings on the same sites meeting the criteria of ‘underutilized’. The building configurations envisioned for the ‘redeveloped’ scenario are chosen to fit the general development context and potential of each corridor. With the known size and cost of hypothetical replacement buildings, it is possible to calculate the new property assessments on each selected parcel. With these new assessments, simulated taxes are again computed and compared.

The expectation is that the underutilized set of parcels will under the current status scenario experience a positive tax shift. Under the redevelopment scenario the tax shift will be negative. Simulation results will show the extent to which this hypothesis is supported.

Current Development Scenario

This scenario is intended to illustrate the simulated tax effects on parcels grouped into two classes according to development status: those already fully developed, and those currently underutilized.

Criterion for Determining Development Status

The criterion chosen to determine current development status is the parcel LTV ratio, based on real market values. The assigned threshold value is .33, indicating that parcels on which the land value comprises more than a third of the total value meet the criterion for ‘underdeveloped’. For this kind of analysis the option is open to include a second criterion based on physical site utilization, the logical measure being the FAR. Thus, one criterion is value-based and the other is physical or site-based. As reported earlier however, the second option is not available in this study due to the lack of data on internal floor area. In any case, the surrogate measure, the ratio BV/LA, closely parallels the LTV ratio (see Appendix 7) and, therefore could be considered somewhat redundant. Applying the .33 LTV threshold results in the inclusion of 637 parcels, or 73%, within the underutilized class. It also ultimately works out that all of the selected parcels experience an upward tax shift under the 50% BRR; any higher ratio would include some negative tax shift parcels – a built-in anomaly that is better avoided.

Characteristics of Selected Parcels

As would be expected, there is a noticeable difference in the proportion of underutilized parcels across corridors. The following shows the breakdown by development status as well as descriptive measures associated with each class.

Table 5.1 Development Status and Characteristics of Parcels, by Corridor

Corridor	Status	No. Parcels	PARCEL CHARACTERISTICS				
			Total Real Market Value	LTV Ratio*	Mean Lot Area	Unit Land Vaue*	Unit Bldg. Vaue*
Hillsboro	Fully developed	22	15,224,620	0.25	22,508	\$ 7.69	\$ 23.05
	Underutilized	102	72,468,730	0.50	34,281	\$ 10.32	\$ 10.40
	TOTAL	124	87,693,350	0.46	32,192	\$ 10.00	\$ 11.97
	Percent Underutilized	82%					
Beaverton	Fully developed	34	35,815,270	0.24	38,328	\$ 6.70	\$ 20.79
	Underutilized	158	51,281,327	0.56	20,349	\$ 8.85	\$ 7.10
	TOTAL	192	87,096,597	0.43	23,533	\$ 8.23	\$ 11.04
	Percent Underutilized	82%					
SE Division	Fully developed	46	21,422,830	0.22	6,276	\$ 16.66	\$ 57.55
	Underutilized	107	27,032,240	0.44	6,200	\$ 18.08	\$ 22.67
	TOTAL	153	48,455,070	0.35	6,223	\$ 17.65	\$ 33.25
	Percent Underutilized	70%					
SE Hawthorne	Fully developed	50	39,975,980	0.23	9,236	\$ 20.11	\$ 66.46
	Underutilized	59	28,941,650	0.49	10,267	\$ 23.37	\$ 24.41
	TOTAL	109	68,917,630	0.34	9,794	\$ 21.96	\$ 42.60
	Percent Underutilized	54%					
SE Stark	Fully developed	57	47,835,000	0.23	33,316	\$ 5.88	\$ 19.31
	Underutilized	97	42,880,420	0.54	27,908	\$ 8.61	\$ 7.23
	TOTAL	154	90,715,420	0.38	29,910	\$ 7.48	\$ 12.21
	Percent Underutilized	63%					
SE 82nd Ave	Fully developed	22	44,571,585	0.25	46,421	\$ 11.13	\$ 32.52
	Underutilized	114	137,392,333	0.55	48,892	\$ 13.64	\$ 11.01
	TOTAL	136	181,963,918	0.48	48,492	\$ 13.25	\$ 14.34
	Percent Underutilized	84%					
All Corridors	Fully developed	231	204,845,285	0.24	23,676	\$ 8.99	\$ 28.47
	Underutilized	637	359,996,700	0.53	25,528	\$ 11.69	\$ 10.45
	TOTAL	868	564,841,985	0.42	25,035	\$ 11.01	\$ 14.99
	Percent Underutilized	73%					

* Based on RMV assessments (Unit Bldg. Value = BV/LotArea)

The SE Hawthorne ribbon includes the lowest proportion (54%) of parcels in the underutilized class; the major strips include percentages above 80 percent. The SE Stark corridor is abnormally low in this regard, but this can be attributed to the large number of multifamily uses present (comprising the largest total assessed value of any land use class, and the lowest LTV ratio for this class among all the corridors). SE Division is an emerging ribbon and contains the potential for significant growth in development, hence the higher percentage.

The LTV ratios among fully developed properties range from .22 to .25, and in accordance with the selection criterion are consistently low. This is an indication of what the value ratios will be like on parcels that in the redevelopment scenario will be converted from underutilized to new development status. The SE Hawthorne ribbon, followed by the SE Division ribbon, shows the highest unit land values, more than double

the overall average. Unit land values are slightly lower on fully developed sites than on underutilized sites, preceding the similar pattern as observed among the LTV ratios. The reason for this is not self-evident; perhaps routine assessment practices might explain the tendency to assign a higher proportion to building value. As expected, unit building values are consistently higher on fully developed sites, by nearly three times on average. Building values are highest in the two ribbons where development intensity is also high. Average lot areas of underutilized sites are slightly higher than the areas of fully utilized sites, although in Beaverton and SE Stark the reverse is observed.

Table 5.2 Development Status by Land Use Class

Parcel Count		DEVELOPMENT STATUS		
		Fully developed	Underutilized	Percent Underutilized
LUCode	Land Use Description			
01	Residential - Single Family	48	199	81%
02	Manufactured home park	0	6	100%
03	Residential - Multifamily	17	1	6%
04	Residential - Multifamily + parking	42	14	25%
05	Business - converted residence	13	31	70%
06	Retail - building street oriented	34	24	41%
07	Retail - building setback	0	4	100%
08	Retail - building setback + parking	40	102	72%
09	Retail - building street oriented + parking	4	28	88%
10	Retail - shopping plaza + parking	2	13	87%
11	Retail - shopping center + parking	6	13	68%
12	Professional services + parking	4	14	78%
13	Retail & Svc. - auto oriented + parking	9	22	71%
14	Retail - auto/RV/boat sales + parking	1	16	94%
15	Vehicle service + parking	4	25	86%
16	Commercial + parking	7	32	82%
17	Surface parking	0	57	100%
18	Vacant lot	0	36	100%
Total		231	637	73%

Development status varies considerably by current land use. Table 5.2 above contains the distribution of parcel status by land use class. Surface parking lots and vacant sites all meet the threshold for underdeveloped, but so do manufactured home parks and 81% of the single family properties, as well as 70% of the converted residences. Only about a fifth of the multifamily properties are classified as underutilized. Generally, commercial parcels increase in the proportion of underutilized as they move into the auto-oriented use classes.

For the purpose of developing the tax scenarios, fully utilized parcels will remain as they are; they will not be included in a “redevelopment scenario.” As a standard for redevelopment, lots that are less than 5,000 sq. ft. will not be included. This cut-off point results in 90 parcels from the underutilized class being excluded from the scenario; half

of these are located in the SE Division corridor. The remaining parcels are grouped into three size classes, as found in Table 5.3.

Table 5.3 Parcel Size Class by Development Status, by Corridor

Lot Size Range Parcel Count	Fully Developed Parcels				<i>Underutilized Parcels</i>			
	< 5,000	5,000 - 9,999	10,000 - 19,999	20,000 +	< 5,000	5,000 - 9,999	10,000 - 19,999	20,000 +
Corridor								
Hillsboro	1	3	9	9	6	30	19	47
Beaverton	-	5	12	17	5	34	63	56
SE Division	19	20	5	2	46	40	21	-
SE Hawthorne	17	22	8	3	19	20	17	3
SE Stark	6	12	13	26	4	20	28	45
SE 82nd Ave.	-	5	8	9	10	28	27	49
Total	43	67	55	66	90	172	175	200

A total of 547 parcels are selected for the redevelopment scenario. Table 5.4 contains the descriptive measure for parcels grouped into lot size classes, listed by corridor. Average land values and building values closely correspond to lot size, as shown in the first valuation columns. One might expect that LTV ratios would increase by lot size, as illustrated in the SE Hawthorne ribbon. But this assumption is not supported in corridors where underutilized parcels are numerous and contain a variety of uses. Mean lot sizes range from 7,222 sq. ft. in the small size category to over eight times that in the large lot category. Unit land values generally diminish as lot size increases, while unit building values vary considerably.

Table 5.4 Characteristics of Parcels Selected for Redevelopment

UNDERUTILIZED STATUS		REAL MARKET VALUATION			SITE UTILIZATION		
	No. Parcels*	Mean Land Value	Mean Building Value	LTV Ratio	Mean Lot Area	Unit Land Vaue	Unit Bldg. Vaue
Hillsboro Count: 96							
Underutilized - Small Lot	30	87,744	48,771	0.64	7,624	\$ 11.51	\$ 6.40
Underutilized - Medium Lot	19	182,232	84,782	0.68	14,877	\$ 12.25	\$ 5.70
Underutilized - Large Lot	47	632,271	705,001	0.47	63,049	\$ 10.03	\$ 11.18
Beaverton Count: 153							
Underutilized - Small Lot	34	84,669	55,552	0.60	8,156	\$ 10.38	\$ 6.81
Underutilized - Medium Lot	63	126,152	92,766	0.58	14,779	\$ 8.54	\$ 6.28
Underutilized - Large Lot	56	310,095	267,230	0.54	35,500	\$ 8.74	\$ 7.53
SE Division Count: 61							
Underutilized - Small Lot	40	95,797	118,744	0.45	5,812	\$ 16.48	\$ 20.43
Underutilized - Medium Lot	21	225,473	261,416	0.46	11,928	\$ 18.90	\$ 21.92
Underutilized - Large Lot	0				-		
SE Hawthorne Count: 40							
Underutilized - Small Lot	20	154,990	213,334	0.42	7,082	\$ 21.89	\$ 30.12
Underutilized - Medium Lot	17	332,773	317,997	0.51	12,822	\$ 25.95	\$ 24.80
Underutilized - Large Lot	3	1,198,057	813,213	0.60	58,455	\$ 20.50	\$ 13.91
SE Stark Count: 93							
Underutilized - Small Lot	20	68,337	83,491	0.45	7,733	\$ 8.84	\$ 10.80
Underutilized - Medium Lot	28	116,905	116,589	0.50	14,098	\$ 8.29	\$ 8.27
Underutilized - Large Lot	45	411,785	321,468	0.56	47,705	\$ 8.63	\$ 6.74
SE 82nd Ave Count: 104							
Underutilized - Small Lot	28	103,377	46,833	0.69	7,407	\$ 13.96	\$ 6.32
Underutilized - Medium Lot	27	177,262	78,734	0.69	12,989	\$ 13.65	\$ 6.06
Underutilized - Large Lot	49	1,387,278	1,181,864	0.54	101,868	\$ 13.62	\$ 11.60
All Corridors Count: 547							
Underutilized - Small Lot	172	97,117	89,241	0.52	7,222	\$ 13.45	\$ 12.36
Underutilized - Medium Lot	175	170,637	135,664	0.56	13,872	\$ 12.30	\$ 9.78
Underutilized - Large Lot	200	685,916	614,585	0.53	61,325	\$ 11.19	\$ 10.02

* Excluding lots less than 5,000 sq. ft.

Tax Effects: Fully Developed and Underutilized Parcels

For the current development scenario, all fully developed lots are aggregated, and underutilized lots (excluding undersized parcels) are grouped by lot size class. The resulting subtotal taxable assessments contained in Appendix 10 are used for simulated tax applications. The total number of parcels in the data set is now broken down as follows:

Fully Developed	231
Underutilized	547
Excluded	<u>90</u>
TOTAL	868

Results of the tax simulations performed on the subset for each corridor are contained in Appendix 11, and displayed graphically in Figure 5.1 on the following page. The appendix tables summarize the conventional and 2-rate tax differentials, measured in terms of tax shift.

The immediate impression received from the tabular results is the degree of negative tax shift on fully developed parcels, shown in the right column. Tax burdens under a 2-rate tax are reduced by as much as 23%; the highest reduction rates are found in the SE 82nd Ave. corridor and in the remaining strips. Negative tax shift rates are minimal in the two ribbons. Again, the relatively small variation in LTV ratios and in land utilization among most parcels in the SE Division and SE Hawthorne corridors explains this effect. Thus, the tax incentive effect of LVT appears to manifest itself on the strips where large numbers of parcels are land extensive, that is, where building intensity is low.

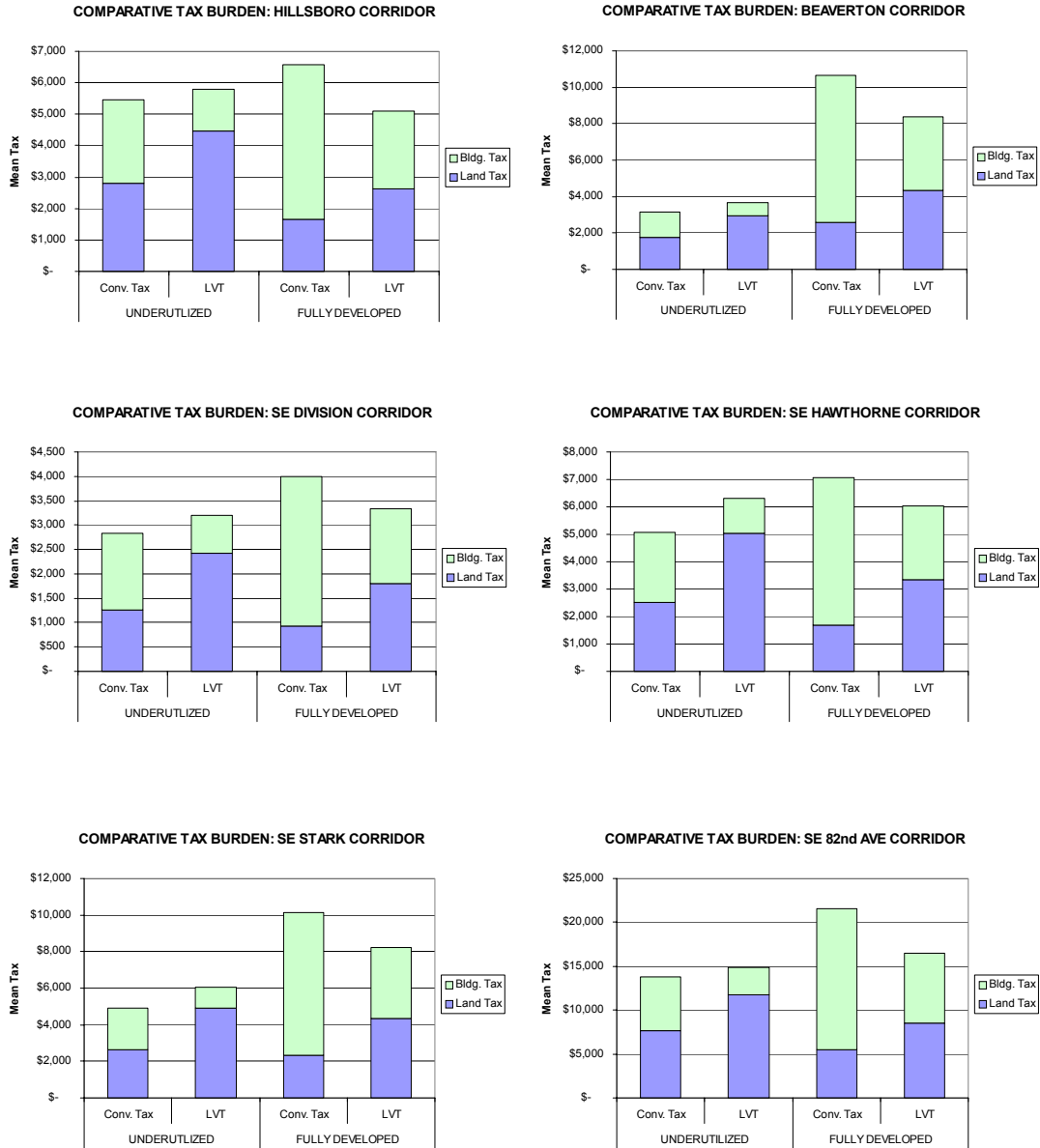
As for the association between lot size and tax shift, results show considerable variation. In the SE Hawthorne and SE Stark corridors, tax burdens are primarily shifted onto large lots; but in other corridors (especially Hillsboro and SE 82nd Ave.), taxes are shifted onto small and medium sized lots.

The rate of tax shift expressed in percentage figures does not reveal the absolute amounts of tax difference as expressed in dollars. A similar rate of shift (as in SE 82nd Ave. and Hillsboro) could mask a significant difference in tax revenue amounts. Within the fully developed status category, the mean reduction in tax burden in the SE 82nd Ave. corridor, for example, is more than \$5,000; the corresponding mean in Hillsboro is less than one third that amount. The total amount of tax burden shifted from fully developed parcels under the 50% BRR tax is \$410,717. That amount is less than 20% of the total conventional tax revenue of over \$2 million and averages to about \$1,778 per parcel. Positively shifted tax revenue represents about 12% of the total conventional revenue, averaging \$508 per parcel.

A clearer picture of the amounts involved in comparative tax burdens is attained from the graphs shown in the following series. The graphs emphasize comparative tax burdens by dividing the two development status class totals by the corresponding parcels counts to arrive at a mean tax amount.

Mean tax amounts range from over \$20,000 per parcel in the SE 82nd Ave. corridor to a low of about \$3,000 in the SE Division corridor. The paired column graphs illustrate the comparative tax burdens of underutilized and fully developed parcels under the two tax systems. It now becomes clear that the 2-rate tax raises the tax burden on underutilized parcels, and lowers the tax on fully developed sites. The comparative tax yield from the two development classes of parcels varies among corridors. In the Hillsboro, SE Division and SE Hawthorne corridors tax amounts are comparable, but in the remaining commercial strips the tax on fully developed sites is noticeably higher.

Figure 5.1 LVT Effects on Fully Developed and Underutilized Parcels

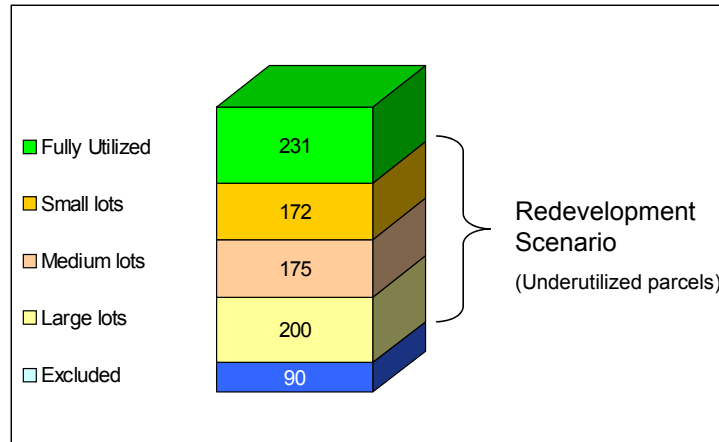


By showing separately the revenues obtained from land tax rates and building tax rates, the graphs illustrate the shift off of building values onto land values. Under the conventional tax system 76% of the total tax revenue from all fully developed sites (\$1.6 million) originates from the tax on building assessments; under the LVT system the major source of the tax is shifted – only 47% of the revenue stems from building assessments. The reverse occurs in the case of underdeveloped sites. Under the

conventional system, 54% of the total revenue comes from land assessments; under the LVT system, the figure is 79%, or \$2.9 million.

Redevelopment Scenario

The previous analysis compared LVT effects between underutilized and fully developed parcels. The redevelopment scenario focuses on the 547 currently underutilized sites, comparing the tax effects between their current utilization and their redeveloped status. The following graphic shows the parcel aggregations involved.



Redevelopment Standards

The redevelopment scenario envisions the following standard reuse for all six corridors:

Mixed-Use Street-Oriented Building:

- Ground Floor Commercial
- Upper Floor Residences
- Underground Parking

The object is to configure buildings according to lot size class, such that smaller lots will contain smaller buildings and larger lots larger buildings. Conventionally, building bulk is measured by FAR – the floor area ratio. METRO has assigned a standard FAR range for each lot size class, as follows:

<u>Lot Size Class</u>	<u>FAR Range</u>
Small (5000 – 9,999 sf)	1.5 - 2.0
Medium (10,000 – 19,999 sf)	2.0 - 3.0
Large (20,000 + sf)	3.0 - 5.0

Within these ranges, parcels in the Hillsboro, SE Stark, and SE 82nd Ave. corridors will be assigned FARs at the lower end of each range, while Beaverton, SE Division, and SE Hawthorne corridors will encompass higher FARs. Each corridor contains three lot size

classes, resulting in a set of 18 different building configurations envisioned in the scenario.

In order to simulate the comparative tax effects on parcels grouped by corridor and lot size class, it is necessary to derive the total assessed values for the ‘redeveloped’ parcels. The method of accomplishing this is to basically replicate the construction of the envisioned buildings in the form of a development proforma – a projection of total project costs. See Appendix 12 for a list of the major variables that comprise a proforma spreadsheet. There are two possible total cost outcomes depending upon the ownership of the site. Under the sale-purchase option, a new owner would have to include site control costs (equity plus acquisition & development loan financing) in the total project cost. Under the present owner as developer option, costs related to a purchase are not included. The second option is the one chosen for this scenario.

Each simulated development project’s total cost is used to arrive at a total assessed value for the building corresponding to its assigned FAR. It is not practical to use this method on 547 separate redevelopment parcels. Instead, a prototypical building representing each configuration is replicated in the proforma, resulting in a factor directly associated with the FAR assigned to that set. The factor is the unit building value: BV/LA, or building value per sq. ft. lot area, which is then multiplied by each parcel’s lot area to compute its building value. (See Authors’ note in Appendix 12 for an explanation of the operation of the proforma.)

Site and Value Attributes of Redeveloped Parcels

A summary of site and value characteristics associated with each lot size class within each corridor is found in Appendix 13. Average values of the same characteristics are contained in Table 5.5. The paired tables show comparisons between the two statuses of prototype development sites: present underutilized and redeveloped.

A close examination of the tables reveals a few discrepancies or abnormalities. First, the number of dwelling units obtainable within the prototype building configurations on small lots appears minute. Even so, there is no possibility that on-site parking can meet the needs of both residences and ground floor commercial establishments. One must conclude that small lots in any corridor are not viable sites for redevelopment of this type. The only way in which small lots could become feasible for redevelopment is through parcel assembly – the grouping of two or more lots for a construction site.

The second problem relates to parking space. In some of the lot group prototypes the number of dwelling units obtainable exceeds the number of parking spaces that can be accommodated on one sub-grade level. For example, on the SE Hawthorne corridor large-lot site it is evident that two parking levels will be necessary to meet acceptable standards for both residential and commercial uses within the building. Again, this raises the issue of feasibility; multi-level parking is costly. With regard to the redevelopment of strips and ribbons, it may be necessary to either lower on-site parking standards or provide for common parking.

Table 5.5 Site and Value Characteristics of Redeveloped Parcels
MEAN VALUES BY LOT SIZE GROUP

All Corridors

Small Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	7,302	
Residential floor area	-	5,477
Commercial floor area	2,245	6,207
Total building internal area	2,245	18,256
Floor Area Ratio	0.31	1.60
No. Dwelling Units	-	5
No. Residential floors	-	1
Rentable commercial space	1,482	4,097
No. subgrade parking spaces	-	22
Land Value	\$ 99,152	\$ 596,948
Building Value	\$ 94,454	\$ 1,890,334
LTV Ratio	0.54	0.24
Unit building value	\$ 13.48	\$ 258.91

Medium Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	13,582	
Residential floor area	-	22,844
Commercial floor area	3,774	11,545
Total building internal area	3,774	46,613
Floor Area Ratio	0.28	2.54
No. Dwelling Units	-	20
No. Residential floors	-	2
Rentable commercial space	2,490.54	7,620
No. subgrade parking spaces	-	38
Land Value	\$ 193,466	\$ 1,484,830
Building Value	\$ 158,714	\$ 4,701,963
LTV Ratio	0.57	0.24
Unit building value	\$ 12.17	\$ 346.69

Large Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	61,315	
Residential floor area	-	198,039
Commercial floor area	9,018	52,118
Total building internal area	9,018	305,341
Floor Area Ratio	0.15	4.15
No. Dwelling Units	-	174
No. Residential floors	-	4
Rentable commercial space	5,952.10	34,398
No. subgrade parking spaces	-	90
Land Value	\$ 787,897	\$ 9,040,462
Building Value	\$ 657,755	\$ 28,628,130
LTV Ratio	0.54	0.24
Unit building value	\$ 10.19	\$ 472.36

Nevertheless, the redevelopment of 547 underutilized sites into medium to high-density mixed-use buildings does add a great deal of capacity. At the densities envisioned, new construction on all currently underutilized parcels would yield more than 71 million sq. ft. of internal building space. Over a third of this capacity is obtained in the SE 82nd Ave. corridor where the largest mean lot sizes and highest number of vacant and surface parking lots is found. The total capacity obtained from all redevelopment sites would accommodate nearly 9 million sq. ft. of rentable commercial floor space and over 37,000 new dwelling units. Of course, this potential will never be fully realized due to market realities. The estimates of usable internal space on small size lots are particularly unreliable in the absence of parcel consolidation. This is due to the loss of economy of scale on small parcels; the required space for common areas and parking ramps consumes a higher proportion of total building space on small sites.

These issues point to the conclusion that accomplishing redevelopment in commercial corridors requires more than the issuance of public policies and regulations. Financial feasibility is a concern that must be addressed, at least in part through publicly generated financial incentives. The major question raised in this study is now placed in context: Does a land value tax offer ample incentive to redevelop underutilized sites?

Tax Effects: Redeveloped Parcels

The unit building values (BV/LA) derived from the proformas, and the standard LTV are used as factors to calculate the assessed values of all 547 redeveloped parcels (grouped by corridor and lot size group). Next, these RMV assessments are converted to taxable assessments by applying the ratio of RMV:TAXABLE unique to each parcel as derived from the original data set. As a whole, taxable values are 58% of the real market values. The total RMV assessment on redeveloped parcels amounts to \$8.93 billion, whereas the taxable amount is \$5.22 billion. A summary of taxable assessments is found in Appendix 14. These values can be compared to the assessments on the same parcels in their current underutilized status, shown in Appendix 10. The total RMV of these same 547 lots in their current status is \$346 million, and the taxable value \$200 million. Converting underutilized sites in six commercial corridors results in the addition of \$5 billion taxable value.

Simulated tax applications on redeveloped parcels utilize the same tax rates as previously applied in their underutilized status. This is a “what if” scenario, not a simulation of conditions as they would change over time. Appendix 15 summarizes the total tax revenue comparisons between the two statuses of prototype development sites: present underutilized and redeveloped. The grand total tax outcomes on *redeveloped* sites under the two tax systems are as follows:

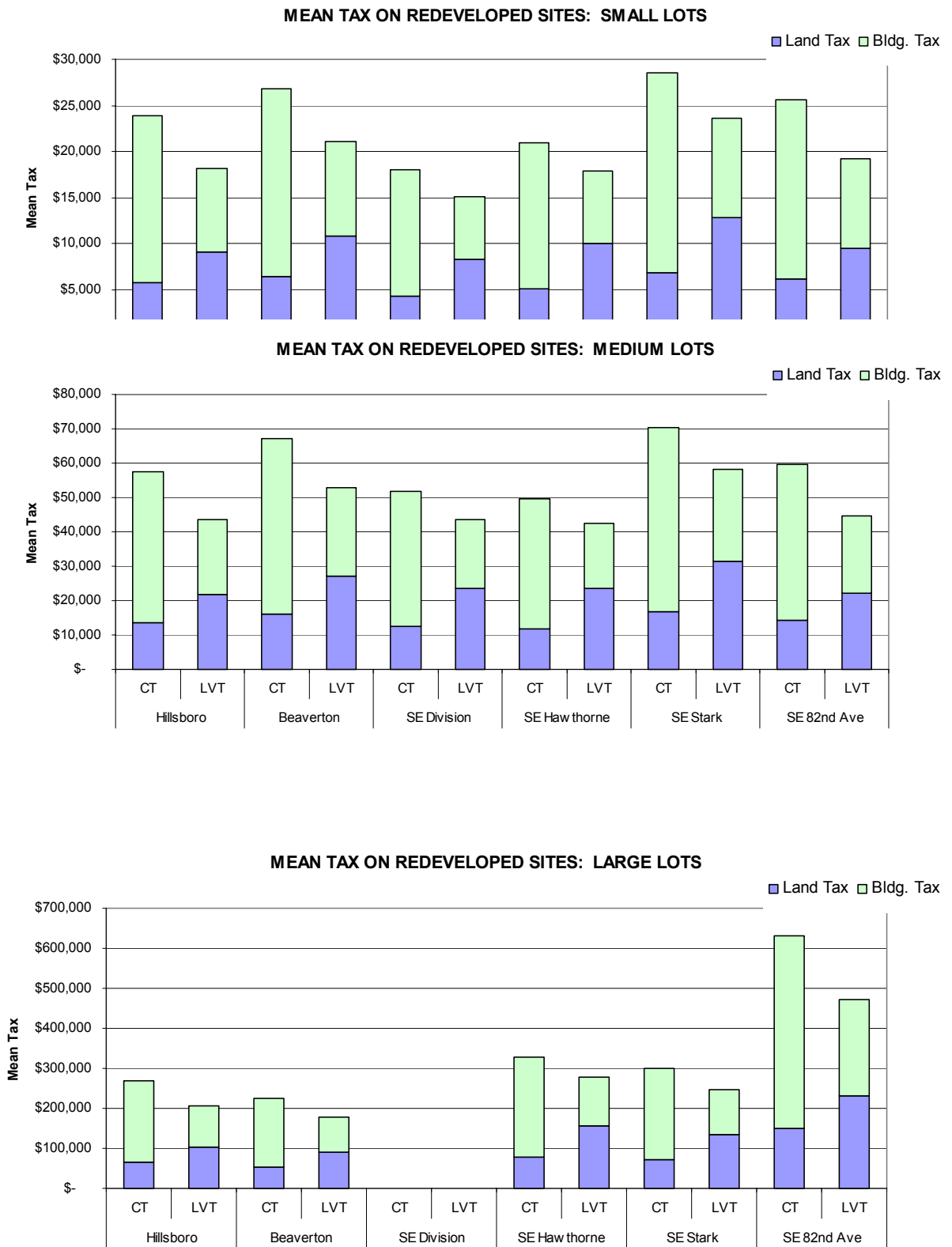
	Conventional Tax	2-Rate Tax	Tax Differential
Land Tax	\$20,449,662	\$33,966,861	\$13,517,199
Bldg. Tax	\$65,094,959	\$32,547,479	\$(32,547,479)
Total	\$85,544,621	\$66,514,340	\$(19,030,281)

Because the 2-rate tax rate falls heavily on land values, and building values comprise nearly three quarters of the total assessment on these properties, the tax burden is \$19 million less than what obtains from the conventional tax. In total, \$32.5 million is shifted off of building taxes (50% of the conventional tax revenue). The table in Appendix 15 illustrates the contrast in tax effects between underutilized and redeveloped status. Across the six corridors, proportional tax shift on redeveloped parcels varies between -14% and -25 percent. As in the case of fully developed parcels (Appendix 11), proportional tax shift is less in the SE Division and SE Hawthorne ribbons. The lower rates of negative shift are due to fewer numbers of parcels meeting the threshold criteria for underdeveloped, resulting in less lot area available for redevelopment.

The total amount of tax burden also varies by corridor. In the Beaverton strip, the total tax revenue obtainable from the conventional tax on redeveloped sites is 37 times the revenue obtained from underutilized sites. Because the LVT shifts taxes off of high value redeveloped sites, the multiple is reduced to twenty-five. A similar effect is found in all the corridors. Again, the SE 82nd Ave. strip contains the largest amount of redevelopable acreage, and therefore experiences the highest amount of negative tax shift - \$8.3 million, mostly from large-lot redevelopment.

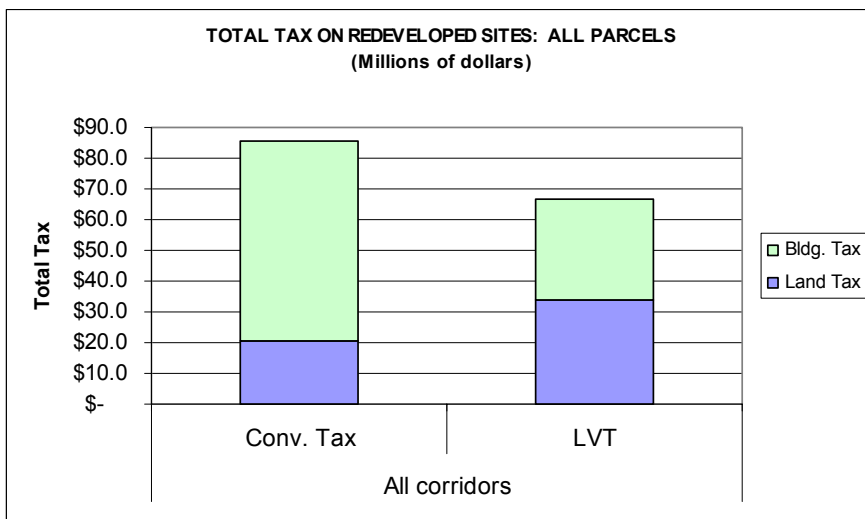
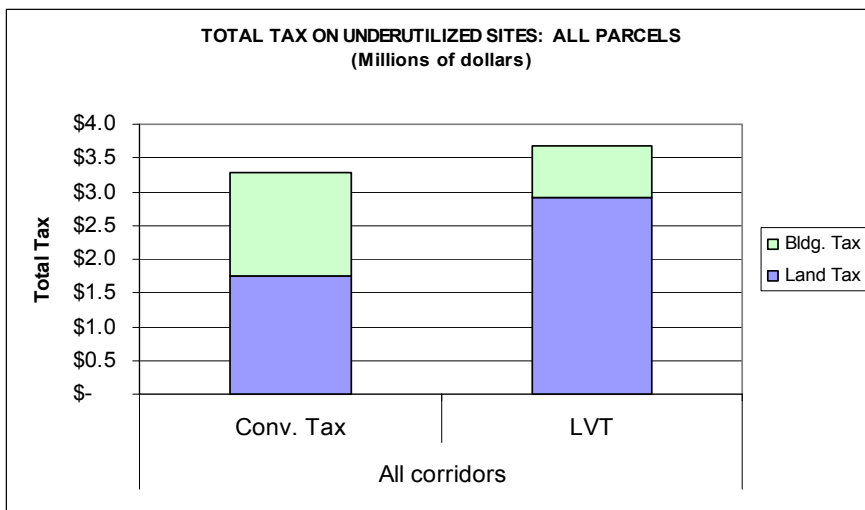
Comparative tax effects can be illustrated by graphing the mean tax burdens on the three lot-size groups. Figure 5.2 shows mean conventional tax and LVT comparisons across corridors. As in the case of fully developed parcels (Figure 5.1), average tax amounts are consistently lower under the LVT system. Differences in tax amounts among the corridors (reflected in column height) are a function of variation in mean lot size within lot-size groups. On the 82nd Ave. strip, the average building tax on large lots under the land value tax system is \$240,000 less than the conventional tax.

Figure 5.2 Comparative Tax Effects on Redeveloped Sites



The overall effects of the land value tax, comparing the grand total revenue yield from sites in their underutilized condition and redeveloped condition, are illustrated in Figure 5.3. (This is a graphic illustration of the amounts shown on page 35). The conventional and 2-rate totals are not equivalent for two reasons. First, the parcels selected for the scenario (numbering 547) are a subset of the total on which revenue neutrality was based (numbering 868). Secondly, the tax rates have not changed to account for the increase in total assessed values.

Figure 5.3 Comparative Tax Effects on Underutilized & Redeveloped Sites



Conclusion

The question of revenue neutrality is a legitimate issue to raise in the context of a redevelopment scenario. This study is a static analysis of comparative tax impacts on classes of property; tax rates do not change. In actual practice, the total tax rates would be adjusted annually in accordance with (i) updated assessments and total revenue requirements, as well as (ii) tax revenue limitations that the state laws may impose. The volume of redevelopment activity envisioned in the scenario would take many years to realize. In the intervening years, how is the LVT tax rate re-calculated? Only in the first year is revenue neutrality relevant, where the building tax is determined as a percentage of the conventional tax rate. After the introduction of a LVT, parity with conventionally taxed revenue has no meaning because the equal rate tax system would be obsolete. Enabling legislation would determine how the split rate tax is thence calculated; however, there are two practical choices: 1. A *hypothetical* equal rate is established on the basis of total revenue requirements, and a desired BRR is used to calculate the LVT building rate; 2. The BRR method is replaced by the Land Value Tax Ratio method, which sets the percentage of an independently derived total levy rate to be applied to land assessments (see The 2-Rate Tax Simulation Method, in Section II). The desired LVT ratio would correspond to the timing of a phase-in period. Using this corridor study as an example, a 56% LVT ratio is roughly equivalent to a BRR of 10% (LVT ratios vary slightly by corridor).

The following equivalents would apply to the graduated land value tax:

<u>BRR ratio:</u>	<u>LVT ratio:</u>
10%	56%
20%	62%
30%	67%
40%	72%
50%	78%

The first method might be employed if the LVT replaces the conventional tax only in limited areas such as special assessment districts or enterprise zones. The second method may be preferable in the instance that the LVT is adopted on a countywide basis.

Returning to the research question: Does a land value tax offer ample incentive to redevelop underutilized sites? The answer is not definitive because of the limited parameters of this study. In order to obtain conclusive evidence of incentive effects, it would be necessary to examine financial feasibility more thoroughly. At what point underutilized sites become a financial liability depends upon both holding costs and the income/costs associated with redevelopment. (Both are influenced by the property tax system in place.) Moreover, these factors change over time, as land prices, construction costs, and rent levels change according to the demand market.

At this point in time, it is highly unlikely that the conversion to a land-based tax system will precipitate a surge in new construction within the Portland metropolitan area's

commercial corridors. It can only be said with certainty that where the demand market supports redevelopment, the LVT system will facilitate the process of conversion. Concomitant with population growth and urban growth management policies discouraging lateral expansion, a land-based tax system can within a time horizon of perhaps 20 years cause significant redevelopment to occur sooner rather than later.

The idea of converting existing strips with their associated visual clutter and discordant land use into higher density, pedestrian-friendly, mixed-use corridors is not new. The 1982 Multnomah County zoning ordinance specifies an “SC” urban strip conversion district, the intent being to provide for the revitalization of strip commercial areas along major arterials. Neither is the capture of land value increments a new idea. The Oregon Department of Transportation has been looking at the capture of community-created value through the formation of special assessment districts to finance limited tax bonds for public improvements.⁽¹²⁾ Land value taxation in its various forms has assumed a prominent position on Oregon’s public finance reform agenda.

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8. Gihring. *Ibid.*
9. Nelson, Smith. *Ibid.*
10. Gihring. *Ibid.*
11. Nelson, Smith. *Ibid.*
12. Parsons Brinckerhoff. 1999. *Value Sharing to Help Fund Highway Improvements*. Report prepared for Region 1, Oregon Department of Transportation.

Appendix 1

Classification of Land Uses

Land Use Code	Land Use Description
01	Residential - Single Family
02	Manufactured home park
03	Residential - Multifamily
04	Residential - Multifamily + parking
05	Business - converted residence
06	Retail - building street oriented
07	Retail - building setback
08	Retail - building setback + parking
09	Retail - building street oriented + parking
10	Retail - shopping plaza + parking
11	Retail - shopping center + parking
12	Professional services + parking
13	Retail & Services - auto oriented + parking
14	Retail - auto/RV/boat sales + parking
15	Vehicle service + parking
16	Commercial + parking
17	Surface parking
18	Vacant lot

Explanation of Land Use Codes:

- 01 Properties classified as “single family residential” in the Assessors’ raw data files.
- 02 Property values include the entire home park site and the combined value of all manufactured homes.
- 03 Properties classified as “multi-family residential” in the Assessors’ raw data files, and also group homes. Includes both single buildings and complexes – with no or limited off-street parking.
- 04 Same as above – with off-street parking for all units.
- 05 Business use of a former single family residence; may include retail, offices, etc.
- 06 Main building is zero-lot line; customer entrance is from the public sidewalk – with no customer parking at the side or rear.
- 07 Main building is set back from the front lot line – with no on-site parking.
- 08 Same as above – with on-site parking. Entrance is typically on the side or rear.
- 09 Main building is zero-lot line; customer main entrance is from the public sidewalk – with on-site customer parking at the side or rear.

- 10 A ‘shopping plaza’ contains one or more retail outlets under a single roof on a large lot, less than 100,000 sq. ft. in area, with extensive customer parking. Includes large supermarkets and department stores.
- 11 A “shopping center” contains several retail outlets clustered on a site greater than 100,000 sq. ft. in area, with extensive customer parking.
- 12 Includes professional service uses such as offices, clinics, as well as non-residential institutions – with on-site parking.
- 13 Main building is small compared to the surface parking area surrounding it. “Auto oriented” includes fast-food outlets and drive-through retail & service establishments such as banks.
- 14 Sales of vehicles such as autos, recreation vehicles, boats, motor cycles, featuring the outdoor display of vehicles.
- 15 Servicing of equipment related to motorized vehicles, including gas stations, auto repair, tire sales & service, equipment rental – with on-site parking.
- 16 Commercial designation is distinct from retail use, and features a set-back building. Includes storage facilities, tool rental, and other semi-industrial uses – with on-site parking.
- 17 A surface parking lot is exclusive of major residential or commercial buildings. It may consist of a ‘split lot’ joined or adjacent to another lot that does include a building.
- 18 A vacant lot does not contain any discernable uses, nor does it contain buildings of any kind.

General Land Use Classes

These consist of grouped use classes, as follows:

Code	Land Use Description	Combined Land Use codes
1	Single family, Manufactured home	01,02
2	Multifamily	03,04
3	Street oriented retail, Res. conversion	05,06
4	Retail, Prof. services - parking	07,08,09,10,11,12
5	Auto oriented retail, service, commercial	13,14,15,16
6	Surface parking	17
7	Vacant	18

Appendix 2

Distribution of Land Uses by Corridor

LUCode	Land Use Description	No. Parcels	Hillsboro	Beaverton	SE Division	SE Hawthorne	SE Stark	SE 82nd Ave
01	Residential - Single Family	247	21	73	65	20	59	9
02	Manufactured home park	6	1				2	3
03	Residential - Multifamily	18	11		1	6		
04	Residential - Multifamily + parking	56	1	16	10	3	24	2
05	Business - converted residence	44	4	7	8	15	9	1
06	Retail - building street oriented	58	2		27	29		
07	Retail - building setback	4	1	2	1			
08	Retail - building setback + parking	142	18	38	16	11	26	33
09	Retail - building street oriented + parking	32	5	1	8	17		1
10	Retail - shopping plaza + parking	15	5	1		2	1	6
11	Retail - shopping center + parking	19	3	4			1	11
12	Professional services + parking	18	4	7	1	1	5	
13	Retail & Svc. - auto oriented + parking	31	9	8			2	12
14	Retail - auto/RV/boat sales + parking	17	9				4	4
15	Vehicle service + parking	29	5	6	6	1	8	3
16	Commercial + parking	39	4	9	5	1	3	17
17	Surface parking	57	17	12	4	3	1	20
18	Vacant lot	36	4	8	1		9	14
Total		868	124	192	153	109	154	136

Appendix 3

Valuation Summary by Land Use Class, by Corridor

Hillsboro					TAXABLE VALUE		
REAL MARKET VALUE					TAXABLE VALUE		
LUCode	# Parcels*	Land Value	Building Value	Total Value	Land Value	Building Value	Total Value
01	21	1,856,500	1,353,060	3,209,560	1,157,255	852,205	2,009,460
02	1	1,589,950	2,944,970	4,534,920	754,253	1,397,057	2,151,310
03	11	1,917,000	5,700,830	7,617,830	1,330,728	3,979,892	5,310,620
04	1	481,270	563,850	1,045,120	398,800	467,230	866,030
05	4	425,460	419,990	845,450	202,794	110,516	313,310
06	2	120,040	336,530	456,570	68,314	217,406	285,720
07	1	306,280	211,350	517,630	156,817	108,213	265,030
08	18	4,328,420	5,292,230	9,620,650	2,608,232	3,060,638	5,668,870
09	5	1,272,590	1,009,510	2,282,100	646,259	518,661	1,164,920
10	5	3,156,600	4,313,400	7,470,000	1,340,358	1,778,252	3,118,610
11	3	8,189,120	13,016,860	21,205,980	2,831,510	4,476,030	7,307,540
12	4	1,857,340	1,744,680	3,602,020	962,034	874,066	1,836,100
13	9	3,846,710	4,014,690	7,861,400	1,951,115	1,959,155	3,910,270
14	9	4,040,360	2,312,350	6,352,710	2,018,323	1,293,857	3,312,180
15	5	1,853,390	2,149,740	4,003,130	800,566	1,113,274	1,913,840
16	4	1,871,400	1,895,070	3,766,470	879,347	959,003	1,838,350
17	17	2,253,030	480,360	2,733,390	1,253,043	223,637	1,476,680
18	4	540,150	28,270	568,420	406,635	12,455	419,090
Total	124	39,905,610	47,787,740	87,693,350	19,766,384	23,401,546	43,167,930

Beaverton					TAXABLE VALUE		
LUCode	# Parcels*	Land Value	Building Value	Total Value	Land Value	Building Value	Total Value
01	73	7,310,260	4,777,017	12,087,277	4,442,203	3,020,747	7,462,950
02							
03							
04	16	3,355,510	10,173,940	13,529,450	2,361,595	7,212,835	9,574,430
05	7	856,010	404,610	1,260,620	391,846	182,024	573,870
06							
07	2	231,160	58,170	289,330	135,116	34,444	169,560
08	38	8,303,040	13,266,980	21,570,020	4,593,900	7,008,580	11,602,480
09	1	47,920	41,080	89,000	29,867	25,603	55,470
10	1	962,540	788,400	1,750,940	583,206	477,694	1,060,900
11	4	3,184,600	5,130,860	8,315,460	1,983,209	3,114,851	5,098,060
12	7	1,200,280	1,840,720	3,041,000	723,091	1,107,179	1,830,270
13	8	2,907,530	3,176,120	6,083,650	1,595,778	1,699,412	3,295,190
14							
15	6	1,643,550	2,547,620	4,191,170	860,841	1,267,719	2,128,560
16	9	3,198,480	7,242,560	10,441,040	1,844,819	4,298,001	6,142,820
17	12	2,713,040	451,740	3,164,780	1,590,857	253,373	1,844,230
18	8	1,282,860	-	1,282,860	571,060	-	571,060
Total	192	37,196,780	49,899,817	87,096,597	21,707,386	29,702,464	51,409,850

SE Division St.							
LUCode	# Parcels*	Land Value	Building Value	Total Value	Land Value	Building Value	Total Value
01	65	4,976,480	8,493,090	13,469,570	2,361,307	4,026,793	6,388,100
02							
03	1	111,760	269,250	381,010	53,019	127,731	180,750
04	10	2,006,280	3,844,890	5,851,170	1,095,557	2,124,543	3,220,100
05	8	699,580	1,374,960	2,074,540	267,861	493,319	761,180
06	27	3,200,480	10,332,340	13,532,820	1,241,387	3,783,983	5,025,370
07	1	80,500	109,350	189,850	28,893	39,247	68,140
08	16	2,476,030	4,060,000	6,536,030	843,951	1,379,439	2,223,390
09	8	1,169,460	1,272,360	2,441,820	461,970	501,160	963,130
10							
11							
12	1	61,030	228,250	289,280	27,445	102,645	130,090
13							
14							
15	6	1,063,550	705,360	1,768,910	433,608	288,452	722,060
16	5	497,130	812,510	1,309,640	215,122	350,188	565,310
17	4	412,130	151,290	563,420	175,922	63,188	239,110
18	1	45,810	1,200	47,010	15,319	401	15,720
Total	153	16,800,220	31,654,850	48,455,070	7,221,361	13,281,089	20,502,450

SE Hawthorne St.							
LUCode	# Parcels*	Land Value	Building Value	Total Value	Land Value	Building Value	Total Value
01	20	1,767,340	3,699,080	5,466,420	873,689	1,826,891	2,700,580
02							
03	6	864,860	4,358,160	5,223,020	369,580	1,635,990	2,005,570
04	3	1,081,380	2,430,920	3,512,300	554,924	1,363,856	1,918,780
05	15	1,639,940	3,103,410	4,743,350	620,952	1,077,368	1,698,320
06	29	5,488,140	13,214,340	18,702,480	2,099,224	4,909,106	7,008,330
07							
08	11	2,878,090	2,426,020	5,304,110	1,098,123	1,047,127	2,145,250
09	17	4,779,620	6,409,680	11,189,300	1,729,975	2,430,745	4,160,720
10	2	3,660,390	8,106,830	11,767,220	1,596,781	3,664,699	5,261,480
11							
12	1	67,190	133,650	200,840	25,031	49,789	74,820
13							
14							
15	1	184,350	363,440	547,790	79,923	157,567	237,490
16	1	534,030	1,202,300	1,736,330	252,500	568,470	820,970
17	3	496,870	27,600	524,470	195,567	11,303	206,870
18							
Total	109	23,442,200	45,475,430	68,917,630	9,496,268	18,742,912	28,239,180

* Valid parcels

SE Stark St.							
LUCode	# Parcels*	Land Value	Building Value	Total Value	Land Value	Building Value	Total Value
01	59	4,280,020	7,537,070	11,817,090	2,330,516	4,235,234	6,565,750
02	2	1,279,060	1,240,840	2,519,900	751,311	728,859	1,480,170
03							
04	24	5,161,510	19,941,200	25,102,710	3,131,145	12,299,555	15,430,700
05	9	895,280	1,784,710	2,679,990	457,001	932,609	1,389,610
06							
07							
08	26	10,061,280	10,738,840	20,800,120	5,405,509	5,779,081	11,184,590
09							
10	1	288,840	408,340	697,180	164,845	233,045	397,890
11	1	1,174,990	2,442,580	3,617,570	564,549	1,173,591	1,738,140
12	5	1,344,670	2,459,250	3,803,920	693,438	1,316,922	2,010,360
13	2	1,014,850	605,460	1,620,310	571,249	335,941	907,190
14	4	3,670,120	6,567,890	10,238,010	2,086,493	3,776,507	5,863,000
15	8	2,578,530	1,571,650	4,150,180	1,055,331	710,049	1,765,380
16	3	1,347,260	904,500	2,251,760	530,456	400,724	931,180
17	1	419,700	55,300	475,000	188,132	24,788	212,920
18	9	941,680	-	941,680	439,920	-	439,920
Total	154	34,457,790	56,257,630	90,715,420	18,369,895	31,946,905	50,316,800

SE 82nd Ave.							
LUCode	# Parcels*	Land Value	Building Value	Total Value	Land Value	Building Value	Total Value
01	9	606,723	700,290	1,307,013	377,874	436,243	814,117
02	3	1,259,675	813,620	2,073,295	915,909	584,028	1,499,937
03							
04	2	484,125	190,620	674,745	259,408	118,100	377,508
05	1	100,959	31,920	132,879	72,226	22,835	95,061
06							
07							
08	33	9,470,328	15,653,330	25,123,658	6,869,909	11,390,532	18,260,441
09	1	105,112	42,390	147,502	75,194	30,324	105,518
10	6	5,758,673	8,585,890	14,344,563	4,138,581	6,174,952	10,313,533
11	11	39,876,724	52,753,690	92,630,414	28,234,268	37,478,919	65,713,187
12							
13	12	4,566,213	7,313,070	11,879,283	3,252,394	5,214,350	8,466,744
14	4	5,283,515	774,610	6,058,125	3,827,972	570,996	4,398,968
15	3	608,703	547,790	1,156,493	435,509	391,921	827,430
16	17	5,752,255	2,543,430	8,295,685	4,106,683	1,817,221	5,923,904
17	20	11,819,483	4,612,280	16,431,763	8,463,351	3,299,457	11,762,808
18	14	1,706,590	1,910	1,708,500	1,229,692	1,367	1,231,059
Total	136	87,399,078	94,564,840	181,963,918	62,258,969	67,531,246	129,790,215

* Valid parcels

Appendix 4 Unit Indicators by Land Use, by Corridors

4.1 Unit Land Values by Land Use, by Corridor

LUCode	Land Use Description	# Parcels	SE					SE82nd	All
			Hillsboro	Beaverton	SE Division	Haw thorne	SE Stark	Ave	Corridors
01	Residential - Single Family	247	9.45	6.34	17.10	19.32	6.33	8.88	8.40
02	Manufactured home park	6	3.22				3.51	5.96	3.86
03	Residential - Multifamily	18	5.54		22.35	18.34			7.27
04	Residential - Multifamily + parking	56	13.17	6.01	19.43	18.90	5.08	8.15	6.86
05	Business - converted residence	44	8.79	10.46	17.91	22.09	6.90	9.21	12.01
06	Retail - building street oriented	58	15.23		17.71	27.38			22.64
07	Retail - building setback	4	17.20	8.87	16.04				12.64
08	Retail - building setback + parking	142	12.46	11.64	18.58	19.43	11.10	14.24	12.88
09	Retail - building street oriented + parking	32	12.65	13.69	18.70	25.55		13.75	20.41
10	Retail - shopping plaza + parking	15	11.11	12.00		19.83	4.67	15.86	14.20
11	Retail - shopping center + parking	19	11.73	10.17			4.31	13.69	12.50
12	Professional services + parking	18	10.57	9.96	12.21	27.51	7.06		9.17
13	Retail & Svc. - auto oriented + parking	31	13.35	11.36			17.34	15.15	13.65
14	Retail - auto/RV/boat sales + parking	17	10.38				8.97	12.62	10.67
15	Vehicle service + parking	29	11.51	8.21	17.17	16.34	11.78	11.32	11.22
16	Commercial + parking	39	10.80	6.92	13.53	14.00	11.90	11.83	10.08
17	Surface parking	57	11.85	7.47	15.67	19.58	11.68	12.96	11.67
18	Vacant lot	36	14.38	6.88	20.10		6.18	13.60	8.96
Total		868	10.00	8.23	17.65	21.96	7.48	13.25	11.01

Real market land value per sq. ft. lot area

4.2 Unit Building Values by Land Use, by Corridor

LUCode	Land Use Description	# Parcels	SE					SE82nd	All
			Hillsboro	Beaverton	SE Division	Haw thorne	SE Stark	Ave	Corridors
01	Residential - Single Family	247	6.89	4.14	29.19	40.44	11.14	10.25	10.72
02	Manufactured home park	6	5.97				3.40	3.85	4.67
03	Residential - Multifamily	18	16.47		53.85	92.41			25.94
04	Residential - Multifamily + parking	56	15.43	18.21	37.24	42.49	19.63	3.21	20.29
05	Business - converted residence	44	8.68	4.94	35.21	41.80	13.75	2.91	18.53
06	Retail - building street oriented	58	42.71		57.17	65.92			61.38
07	Retail - building setback	4	11.87	2.23	21.79				7.75
08	Retail - building setback + parking	142	15.24	18.60	30.47	16.38	11.85	23.54	17.66
09	Retail - building street oriented + parking	32	10.03	11.73	20.34	34.27		5.54	24.28
10	Retail - shopping plaza + parking	15	15.18	9.83		43.92	6.60	23.65	22.80
11	Retail - shopping center + parking	19	18.65	16.39			8.97	18.12	17.48
12	Professional services + parking	18	9.93	15.28	45.65	54.73	12.91		12.96
13	Retail & Svc. - auto oriented + parking	31	13.93	12.41			10.35	24.27	16.72
14	Retail - auto/RV/boat sales + parking	17	5.94				16.05	1.85	7.93
15	Vehicle service + parking	29	13.35	12.73	11.39	32.22	7.18	10.18	11.15
16	Commercial + parking	39	10.94	15.67	22.11	31.52	7.99	5.23	11.15
17	Surface parking	57	2.53	1.24	5.75	1.09	1.54	5.06	3.72
18	Vacant lot	36	0.75	-	0.53		-	0.02	0.06
Total		868	11.97	11.04	33.25	42.60	12.21	14.34	14.99

Real market building value per sq. ft. lot area

4.3A Land-to-Total Value Ratios by Land Use, by Corridor: RMV Assessments

LUCode	Land Use Description	# Parcels	SE					SE 82nd	All
			Hillsboro	Beaverton	SE Division	Haw thorne	SE Stark	Ave	Corridors
01	Residential - Single Family	247	0.58	0.60	0.37	0.32	0.36	0.46	0.44
02	Manufactured home park	6	0.35				0.51	0.61	0.45
03	Residential - Multifamily	18	0.25		0.29	0.17			0.22
04	Residential - Multifamily + parking	56	0.46	0.25	0.34	0.31	0.21	0.72	0.25
05	Business - converted residence	44	0.50	0.68	0.34	0.35	0.33	0.76	0.39
06	Retail - building street oriented	58	0.26		0.24	0.29			0.27
07	Retail - building setback	4	0.59	0.80	0.42				0.62
08	Retail - building setback + parking	142	0.45	0.38	0.38	0.54	0.48	0.38	0.42
09	Retail - building street oriented + parking	32	0.56	0.54	0.48	0.43		0.71	0.46
10	Retail - shopping plaza + parking	15	0.42	0.55		0.31	0.41	0.40	0.38
11	Retail - shopping center + parking	19	0.39	0.38			0.32	0.43	0.42
12	Professional services + parking	18	0.52	0.39	0.21	0.33	0.35		0.41
13	Retail & Svc. - auto oriented + parking	31	0.49	0.48			0.63	0.38	0.45
14	Retail - auto/RV/boat sales + parking	17	0.64				0.36	0.87	0.57
15	Vehicle service + parking	29	0.46	0.39	0.60	0.34	0.62	0.53	0.50
16	Commercial + parking	39	0.50	0.31	0.38	0.31	0.60	0.69	0.47
17	Surface parking	57	0.82	0.86	0.73	0.95	0.88	0.72	0.76
18	Vacant lot	36	0.95	1.00	0.97		1.00	1.00	0.99
Total		868	0.46	0.43	0.35	0.34	0.38	0.48	0.42

Real market values: land-to-total assessment ratio

4.3B Land-to-Total Value Ratios by Land Use, by Corridor: Taxable Assessments

LUCode	Land Use Description	# Parcels	SE					SE 82nd	All
			Hillsboro	Beaverton	SE Division	Haw thorne	SE Stark	Ave	Corridors
01	Residential - Single Family	247	0.58	0.60	0.37	0.32	0.35	0.46	0.44
02	Manufactured home park	6	0.35				0.51	0.61	0.47
03	Residential - Multifamily	18	0.25		0.29	0.18			0.23
04	Residential - Multifamily + parking	56	0.46	0.25	0.34	0.29	0.20	0.69	0.25
05	Business - converted residence	44	0.65	0.68	0.35	0.37	0.33	0.76	0.42
06	Retail - building street oriented	58	0.24		0.25	0.30			0.28
07	Retail - building setback	4	0.59	0.80	0.42				0.64
08	Retail - building setback + parking	142	0.46	0.40	0.38	0.51	0.48	0.38	0.42
09	Retail - building street oriented + parking	32	0.55	0.54	0.48	0.42		0.71	0.46
10	Retail - shopping plaza + parking	15	0.43	0.55		0.30	0.41	0.40	0.39
11	Retail - shopping center + parking	19	0.39	0.39			0.32	0.43	0.42
12	Professional services + parking	18	0.52	0.40	0.21	0.33	0.34		0.41
13	Retail & Svc. - auto oriented + parking	31	0.50	0.48			0.63	0.38	0.44
14	Retail - auto/RV/boat sales + parking	17	0.61				0.36	0.87	0.58
15	Vehicle service + parking	29	0.42	0.40	0.60	0.34	0.60	0.53	0.48
16	Commercial + parking	39	0.48	0.30	0.38	0.31	0.57	0.69	0.48
17	Surface parking	57	0.85	0.86	0.74	0.95	0.88	0.72	0.75
18	Vacant lot	36	0.97	1.00	0.97		1.00	1.00	0.99
Total		868	0.46	0.42	0.35	0.34	0.37	0.48	0.43

Taxable values: land-to-total assessment ratio

4.4A Mean Lot Size by General Land Use, by Corridor

MLU Code	Description	# Parcels	SE					SE 82nd Ave	All Corridors
			Hillsboro	Beaverton	SE Division	Haw thorne	SE Stark		
1	Single family, Manufactured home	253	31,358	15,801	4,476	4,573	17,067	23,320	14,019
2	Multifamily	74	31,884	34,919	9,840	11,597	42,333	29,691	30,126
3	Street oriented retail, Res. conversion	102	9,382	11,693	6,280	6,243	14,423	10,957	13,132
4	Retail, Prof. services + parking	230	45,100	23,706	7,915	16,845	43,360	77,403	37,976
5	Auto oriented retail, service, commercial	116	37,474	39,922	8,973	24,712	47,054	35,001	33,354
6	Surface parking	57	11,180	30,257	6,574	8,461	35,924	45,587	27,237
7	Vacant	36	9,393	23,313	2,279	-	16,941	8,962	14,008
Total		868	32,192	23,533	6,223	9,794	29,910	48,492	25,035

4.4B Mean Lot Size by Land Use, By Corridor

LUCode	Land Use Description	# Parcels	SE					SE 82nd Ave	All Corridors
			Hillsboro	Beaverton	SE Division	Haw thorne	SE Stark		
01	Residential - Single Family	247	9,350	15,801	4,476	4,573	11,467	7,591	10,029
02	Manufactured home park	6	493,532				182,269	70,506	178,265
03	Residential - Multifamily	18	31,460		5,000	7,860			22,124
04	Residential - Multifamily + parking	56	36,545	34,919	10,324	19,069	42,333	29,691	32,698
05	Business - converted residence	44	12,103	11,693	4,882	4,949	14,423	10,957	8,734
06	Retail - building street oriented	58	3,940		6,694	6,912			6,708
07	Retail - building setback	4	17,806	13,027	5,018				12,220
08	Retail - building setback + parking	142	19,293	18,768	8,327	13,467	34,852	20,151	20,514
09	Retail - building street oriented + parking	32	20,121	3,501	7,818	11,002		7,645	11,292
10	Retail - shopping plaza + parking	15	56,836	80,178		92,299	61,885	60,513	64,928
11	Retail - shopping center + parking	19	232,659	78,249			272,308	264,712	220,795
12	Professional services + parking	18	43,936	17,213	5,000	2,442	38,111		27,457
13	Retail & Svc. - auto oriented + parking	31	32,016	31,987			29,263	25,109	29,157
14	Retail - auto/RV/boat sales + parking	17	43,259				102,319	104,666	71,604
15	Vehicle service + parking	29	32,216	33,368	10,326	11,280	27,356	17,928	24,385
16	Commercial + parking	39	43,312	51,345	7,349	38,144	37,754	28,605	33,584
17	Surface parking	57	11,180	30,257	6,574	8,461	35,924	45,587	27,237
18	Vacant lot	36	9,393	23,313	2,279		16,941	8,962	14,008
Total		868	32,192	23,533	6,223	9,794	29,910	48,492	25,035

Appendix 5

The Building Rate Reduction Method

Formula for Converting a Conventional Tax Rate to a Revenue Neutral Split Tax Rate:

Abbreviations:

CR	= Conventional tax Rate
BRRrt by .__)	= Building Rate Reduction rate (reduce bldg. rate
Σ BV assessment)	= Sum of the Building Values (grand total building
Σ LV assessment)	= Sum of the Land Values (grand total land
AR	= Assessment Ratio
BRR	= Building Rate Reduction
LRI	= Land Rate Increase
BR	= Building tax Rate
LR	= Land tax Rate

Steps in the calculation:

1. $BRR = CR * BRRrt$
2. $AR = \Sigma BV / \Sigma LV$
3. $BR = CR - BRR$
4. $LRI = BRR * AR$
5. $LR = CR + LRI$
6. Convert to mill rate: $(BR * 1000)$ $(LR * 1000)$

Example:

If the CR is 5%, and the desired BRRrt is .2 (a 20% reduction), and the Σ of the building assessment = \$450 million, and the Σ of the land assessment = \$150 million,

Then:

$$BRR = 1\%$$

$$AR = 3$$

$$LRI = 3\%$$

$$BR = (5\% - 1\%) = 4\%$$

$$LR = (5\% + 3\%) = 8\%$$

Hence, the 4% building rate is 20% less than the 5% conventional rate.

Note: The authors devised the above formula from the example cited in the periodical *Incentive Taxation*, July 2000, published by the Center for the Study of Economics, Columbia, MD.

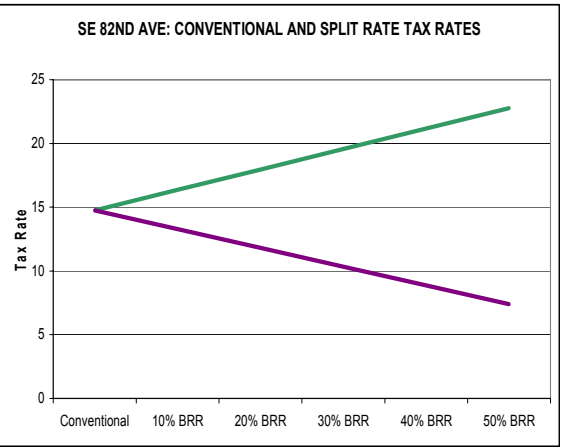
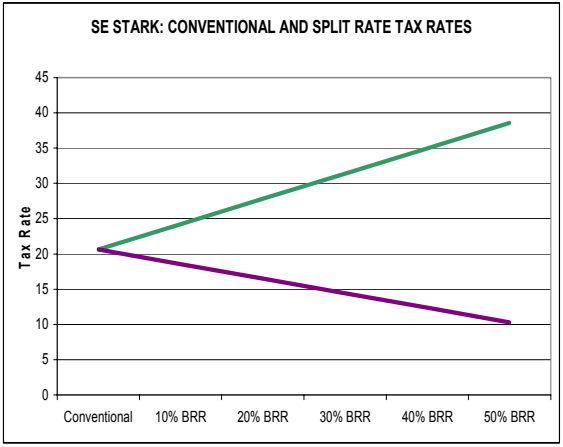
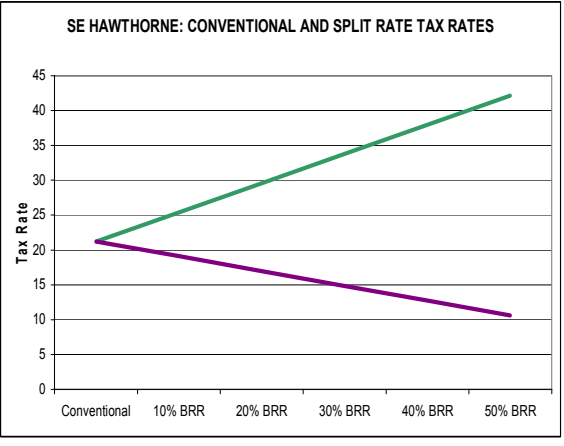
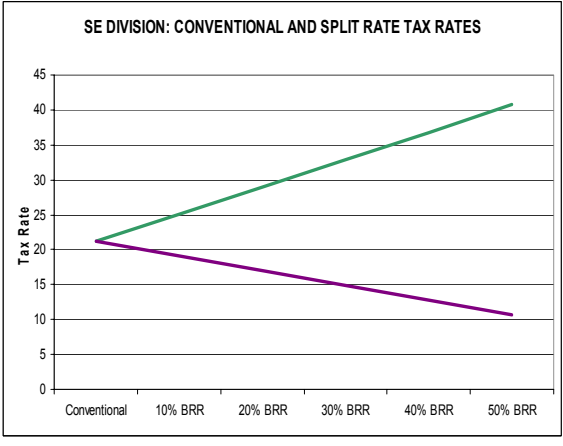
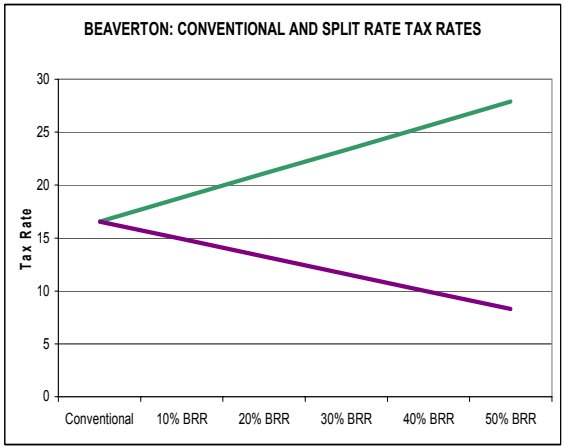
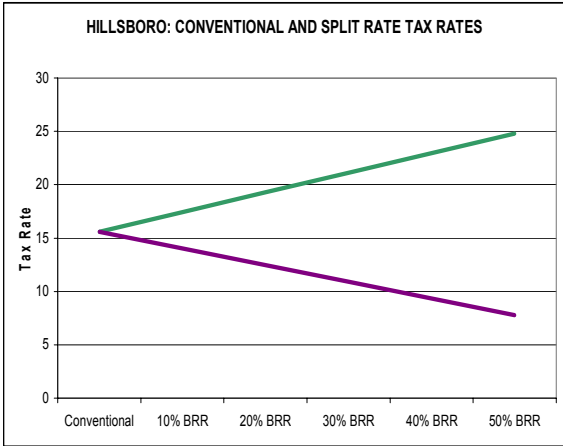
Appendix 6

Conventional Tax Rates for Corridors Corresponding to Levy Code Areas

Study Corridor	Levy Code Area	Site City	County	Parcel Count	03-04 Tax Rate	03-04 Consolidated Tax Rate*
Hillsboro	007.01	Hillsboro	Washington	124	15.59	15.59
Beaverton	029.26	Beaverton	Washington	25	14.37	16.56
	051.50	Beaverton	Washington	167	16.88	
SE Division	001	Portland	Multnomah	153	21.21	21.21
SE Hawthorne	001	Portland	Multnomah	109	21.21	21.21
SE Stark	113	Portland	Multnomah	32	20.74	20.63
	153	Portland	Multnomah	14	21.04	
	160	Portland	Multnomah	22	20.59	
	161	Portland	Multnomah	21	20.74	
	406	Portland	Multnomah	38	20.03	
	407	Portland	Multnomah	26	21.04	
	901	Portland	Multnomah	1	20.95	
SE 82nd Ave	12051	Portland / Milwaukie	Clackamas	74	14.76	14.76
	12124	Portland	Clackamas	33	14.76	
	12144	Portland	Clackamas	4	14.76	
	12169	Portland	Clackamas	25	14.76	

* Mill rates, calculated for each corridor using weighted average of levy code area rates

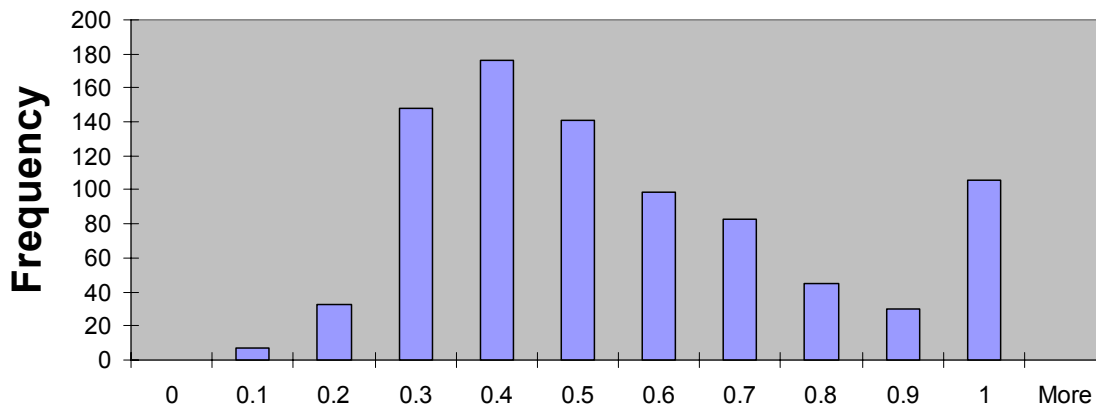
Revenue Neutral Split Rates		2-RATE TAX					Total Revenue
Corridor	CONVENTIONAL TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR	
HILLSBORO	15.59						\$ 672,988
Land		17.436	19.281	21.127	22.973	24.819	
Improvements		14.031	12.472	10.913	9.354	7.795	
BEAVERTON	16.56						\$ 851,347
Land		18.826	21.092	23.358	25.624	27.890	
Improvements		14.904	13.248	11.592	9.936	8.280	
SE DIVISION ST	21.21						\$ 434,857
Land		25.111	29.012	32.912	36.813	40.714	
Improvements		19.089	16.968	14.847	12.726	10.605	
SE HAWTHORNE ST	21.21						\$ 598,953
Land		25.396	29.582	33.769	37.955	42.141	
Improvements		19.089	16.968	14.847	12.726	10.605	
SE STARK ST	20.63						\$ 1,038,036
Land		24.218	27.805	31.393	34.981	38.569	
Improvements		18.567	16.504	14.441	12.378	10.315	
SE 82ND AVE	14.76						\$ 1,915,704
Land		16.361	17.962	19.563	21.164	22.765	
Improvements		13.284	11.808	10.332	8.856	7.380	



Appendix 7
Frequency Distribution of Site And Value Ratios

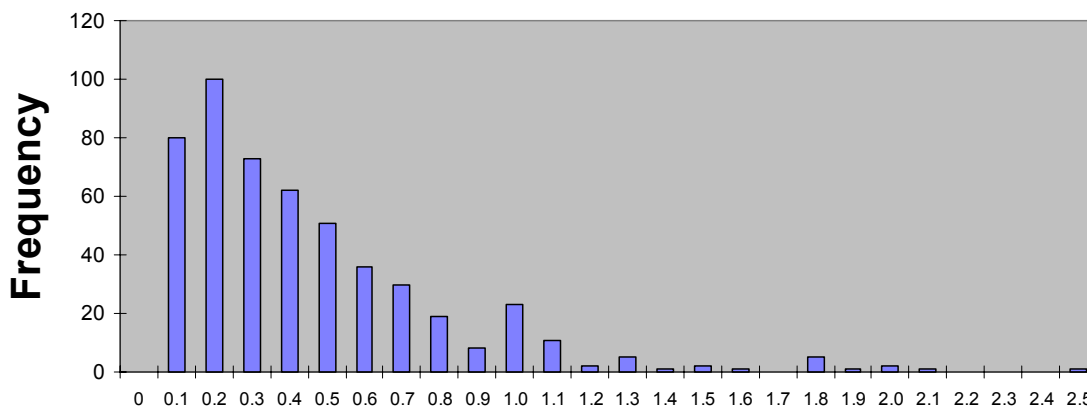
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Distribution of LTV Ratios



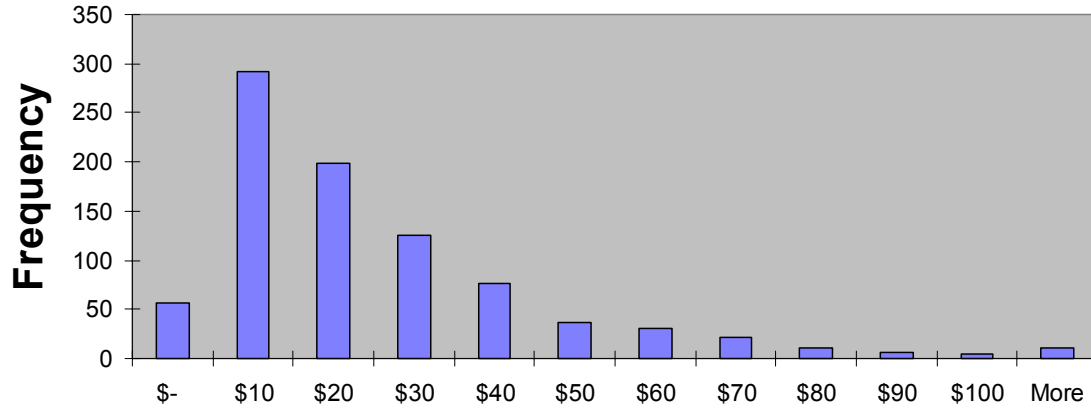
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Distribution of FAR values

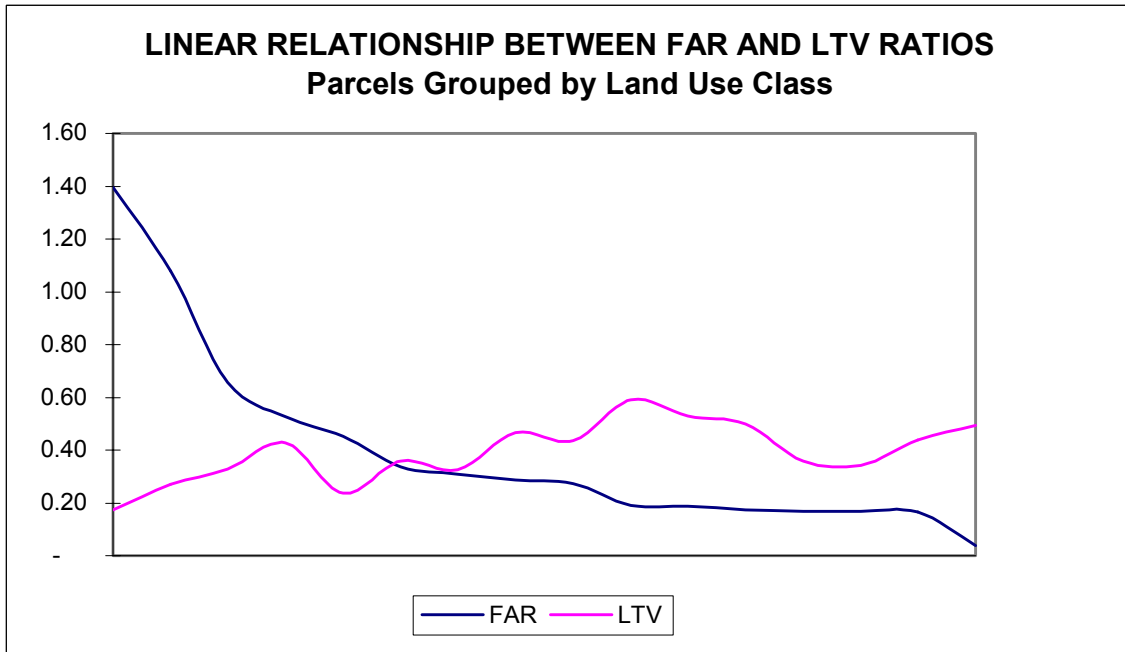


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Distribution of BV/LA Ratio Values



7D



Appendix 8
Tax Burden Shift by General Land Use Class:
Total Parcels

Washington County
Hillsboro Corridor

Code	Major Land Use Class	# Parcels	CONVENTIONAL	2-RATE TAX				
			TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
1	Single family, Manufactured home	22	\$64,866	\$64,888	\$64,909	\$64,931	\$64,952	\$64,974
2	Multifamily	12	\$96,294	\$92,553	\$88,812	\$85,071	\$81,331	\$77,590
3	Street oriented retail, Res. conversion	6	\$9,339	\$9,328	\$9,317	\$9,306	\$9,296	\$9,285
4	Retail, Prof. services + parking	36	\$301,839	\$300,749	\$299,659	\$298,569	\$297,479	\$296,389
5	Auto oriented retail, service, commercial	27	\$171,095	\$173,220	\$175,345	\$177,469	\$179,594	\$181,719
6	Surface parking	17	\$23,021	\$24,986	\$26,950	\$28,914	\$30,878	\$32,842
7	Vacant	4	\$6,534	\$7,265	\$7,996	\$8,727	\$9,458	\$10,189
TOTAL		124	\$672,988	\$672,988	\$672,988	\$672,988	\$672,988	\$672,988

Code	Major Land Use Class	# Parcels	CONVENTIONAL	PERCENTAGE CHANGE				
			TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
1	Single family, Manufactured home	22		0.0%	0.1%	0.1%	0.1%	0.2%
2	Multifamily	12		-3.9%	-7.8%	-11.7%	-15.5%	-19.4%
3	Street oriented retail, Res. conversion	6		-0.1%	-0.2%	-0.3%	-0.5%	-0.6%
4	Retail, Prof. services + parking	36		-0.4%	-0.7%	-1.1%	-1.4%	-1.8%
5	Auto oriented retail, service, commercial	27		1.2%	2.5%	3.7%	5.0%	6.2%
6	Surface parking	17		8.5%	17.1%	25.6%	34.1%	42.7%
7	Vacant	4		11.2%	22.4%	33.6%	44.8%	56.0%
TOTAL		124		0.0%	0.0%	0.0%	0.0%	0.0%

Beaverton Corridor

Code	Major Land Use Class	# Parcels	CONVENTIONAL	2-RATE TAX				
			TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
1	Single family, Manufactured home	73	\$123,586	\$128,650	\$133,713	\$138,776	\$143,840	\$148,903
2	Multifamily	16	\$158,553	\$151,959	\$145,366	\$138,773	\$132,180	\$125,586
3	Street oriented retail, Res. conversion	7	\$9,503	\$10,090	\$10,676	\$11,263	\$11,849	\$12,436
4	Retail, Prof. services + parking	53	\$328,165	\$326,914	\$325,662	\$324,411	\$323,160	\$321,908
5	Auto oriented retail, service, commercial	23	\$191,542	\$189,258	\$186,974	\$184,689	\$182,405	\$180,121
6	Surface parking	12	\$30,540	\$33,726	\$36,911	\$40,096	\$43,281	\$46,466
7	Vacant	8	\$9,457	\$10,751	\$12,045	\$13,339	\$14,633	\$15,927
TOTAL		192	\$851,347	\$851,347	\$851,347	\$851,347	\$851,347	\$851,347

Code	Major Land Use Class	# Parcels	CONVENTIONAL	PERCENTAGE CHANGE				
			TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
1	Single family, Manufactured home	73		4.1%	8.2%	12.3%	16.4%	20.5%
2	Multifamily	16		-4.2%	-8.3%	-12.5%	-16.6%	-20.8%
3	Street oriented retail, Res. conversion	7		6.2%	12.3%	18.5%	24.7%	30.9%
4	Retail, Prof. services + parking	53		-0.4%	-0.8%	-1.1%	-1.5%	-1.9%
5	Auto oriented retail, service, commercial	23		-1.2%	-2.4%	-3.6%	-4.8%	-6.0%
6	Surface parking	12		10.4%	20.9%	31.3%	41.7%	52.1%
7	Vacant	8		13.7%	27.4%	41.0%	54.7%	68.4%
TOTAL		192		0.0%	0.0%	0.0%	0.0%	0.0%

Multnomah County SE Hawthorne Corridor

Code	Major Land Use Class	# Parcels	CONVENTIONAL	2-RATE TAX				
			TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
1	Single family, Manufactured home	65	\$135,492	\$136,162	\$136,832	\$137,502	\$138,172	\$138,843
2	Multifamily	11	\$72,132	\$71,835	\$71,539	\$71,242	\$70,945	\$70,649
3	Street oriented retail, Res. conversion	35	\$122,733	\$119,548	\$116,363	\$113,178	\$109,993	\$106,808
4	Retail, Prof. services + parking	26	\$71,791	\$72,815	\$73,839	\$74,863	\$75,887	\$76,912
5	Auto oriented retail, service, commercial	11	\$27,305	\$28,481	\$29,657	\$30,833	\$32,009	\$33,185
6	Surface parking	4	\$5,072	\$5,624	\$6,176	\$6,728	\$7,280	\$7,833
7	Vacant	1	\$333	\$392	\$451	\$510	\$569	\$628
TOTAL		153	\$434,857	\$434,857	\$434,857	\$434,857	\$434,857	\$434,857

Code	Major Land Use Class	# Parcels	CONVENTIONAL	PERCENTAGE CHANGE				
			TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
1	Single family, Manufactured home	65		0.5%	1.0%	1.5%	2.0%	2.5%
2	Multifamily	11		-0.4%	-0.8%	-1.2%	-1.6%	-2.1%
3	Street oriented retail, Res. conversion	35		-2.6%	-5.2%	-7.8%	-10.4%	-13.0%
4	Retail, Prof. services + parking	26		1.4%	2.9%	4.3%	5.7%	7.1%
5	Auto oriented retail, service, commercial	11		4.3%	8.6%	12.9%	17.2%	21.5%
6	Surface parking	4		10.9%	21.8%	32.7%	43.6%	54.4%
7	Vacant	1		17.7%	35.3%	53.0%	70.7%	88.3%
TOTAL		153		0.0%	0.0%	0.0%	0.0%	0.0%

SE Division Corridor

Code	Major Land Use Class	# Parcels	CONVENTIONAL	2-RATE TAX				
			TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
1	Single family, Manufactured home	20	\$57,279	\$57,062	\$56,845	\$56,627	\$56,410	\$56,193
2	Multifamily	9	\$83,235	\$80,743	\$78,251	\$75,758	\$73,266	\$70,773
3	Street oriented retail, Res. conversion	44	\$184,668	\$183,358	\$182,048	\$180,738	\$179,428	\$178,118
4	Retail, Prof. services + parking	31	\$246,933	\$250,306	\$253,679	\$257,053	\$260,426	\$263,800
5	Auto oriented retail, service, commercial	2	\$22,450	\$22,302	\$22,153	\$22,005	\$21,857	\$21,708
6	Surface parking	3	\$4,388	\$5,182	\$5,977	\$6,772	\$7,567	\$8,361
7	Vacant	-	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL		109	\$598,953	\$598,953	\$598,953	\$598,953	\$598,953	\$598,953

Code	Major Land Use Class	# Parcels	CONVENTIONAL	PERCENTAGE CHANGE				
			TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
1	Single family, Manufactured home	20		-0.4%	-0.8%	-1.1%	-1.5%	-1.9%
2	Multifamily	9		-3.0%	-6.0%	-9.0%	-12.0%	-15.0%
3	Street oriented retail, Res. conversion	44		-0.7%	-1.4%	-2.1%	-2.8%	-3.5%
4	Retail, Prof. services + parking	31		1.4%	2.7%	4.1%	5.5%	6.8%
5	Auto oriented retail, service, commercial	2		-0.7%	-1.3%	-2.0%	-2.6%	-3.3%
6	Surface parking	3		18.1%	36.2%	54.3%	72.4%	90.6%
7	Vacant	-						
TOTAL		109		0.0%	0.0%	0.0%	0.0%	0.0%

SE Stark Corridor

Code	Major Land Use Class	# Parcels	CONVENTIONAL	2-RATE TAX				
			TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
1	Single family, Manufactured home	61	\$165,987	\$166,803	\$167,619	\$168,435	\$169,251	\$170,067
2	Multifamily	24	\$318,335	\$304,195	\$290,055	\$275,915	\$261,774	\$247,634
3	Street oriented retail, Res. conversion	9	\$28,668	\$28,383	\$28,099	\$27,815	\$27,530	\$27,246
4	Retail, Prof. services + parking	33	\$316,278	\$323,236	\$330,193	\$337,150	\$344,108	\$351,065
5	Auto oriented retail, service, commercial	17	\$195,299	\$199,748	\$204,197	\$208,647	\$213,096	\$217,545
6	Surface parking	1	\$4,393	\$5,016	\$5,640	\$6,264	\$6,888	\$7,512
7	Vacant	9	\$9,076	\$10,654	\$12,232	\$13,811	\$15,389	\$16,967
TOTAL		154	\$1,038,036	\$1,038,036	\$1,038,036	\$1,038,036	\$1,038,036	\$1,038,036

Code	Major Land Use Class	# Parcels	CONVENTIONAL	PERCENTAGE CHANGE				
			TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
1	Single family, Manufactured home	61		0.5%	1.0%	1.5%	2.0%	2.5%
2	Multifamily	24		-4.4%	-8.9%	-13.3%	-17.8%	-22.2%
3	Street oriented retail, Res. conversion	9		-1.0%	-2.0%	-3.0%	-4.0%	-5.0%
4	Retail, Prof. services + parking	33		2.2%	4.4%	6.6%	8.8%	11.0%
5	Auto oriented retail, service, commercial	17		2.3%	4.6%	6.8%	9.1%	11.4%
6	Surface parking	1		14.2%	28.4%	42.6%	56.8%	71.0%
7	Vacant	9		17.4%	34.8%	52.2%	69.6%	87.0%
TOTAL		154		0.0%	0.0%	0.0%	0.0%	0.0%

Clackamas County

SE 82nd Ave. Corridor

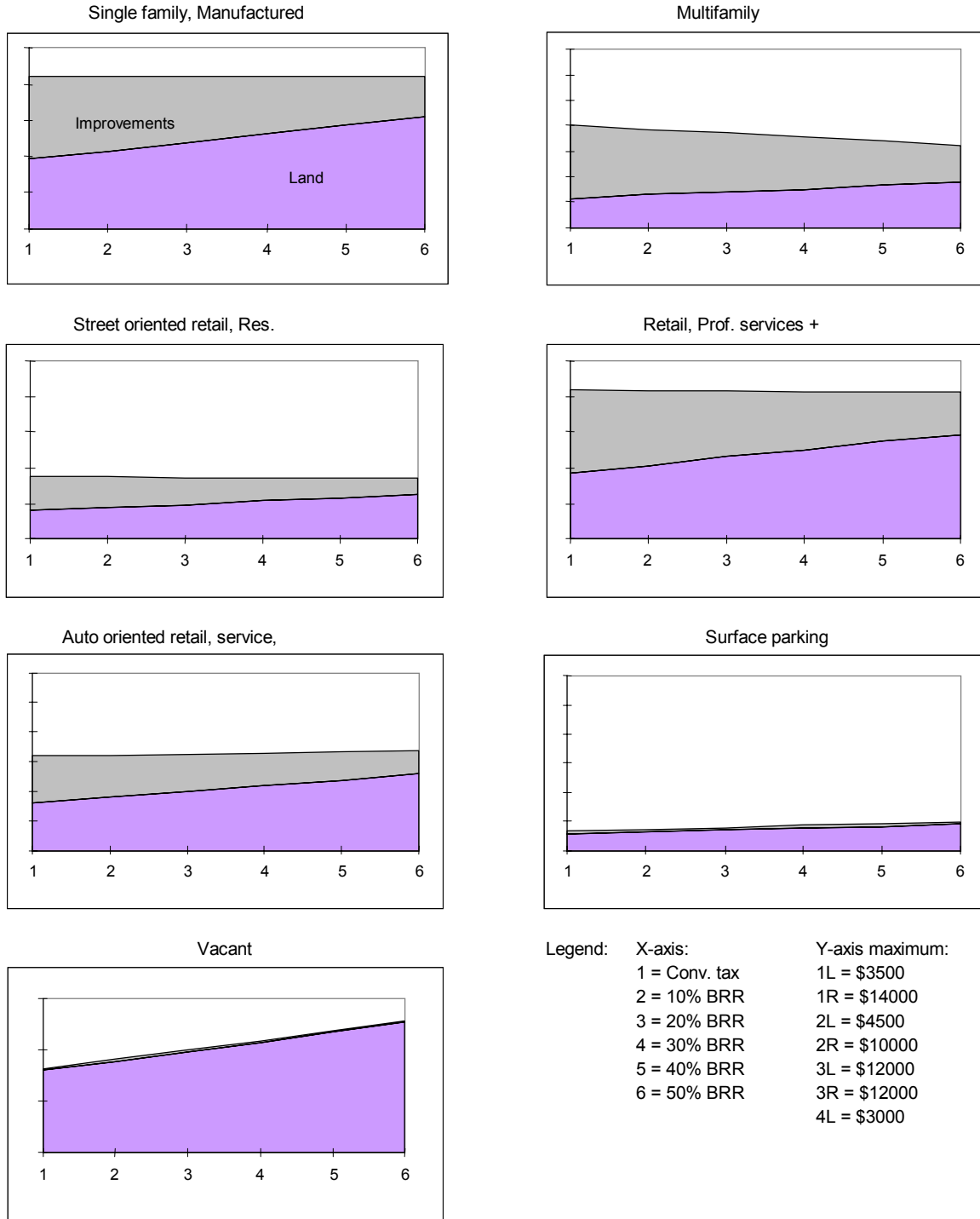
Code	Major Land Use Class	# Parcels	CONVENTIONAL	2-RATE TAX				
			TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
1	Single family, Manufactured home	12	\$34,155	\$34,721	\$35,286	\$35,852	\$36,417	\$36,983
2	Multifamily	2	\$5,572	\$5,813	\$6,054	\$6,295	\$6,536	\$6,777
3	Street oriented retail, Res. conversion	1	\$1,403	\$1,485	\$1,567	\$1,649	\$1,731	\$1,813
4	Retail, Prof. services + parking	51	\$1,393,236	\$1,374,893	\$1,356,551	\$1,338,208	\$1,319,866	\$1,301,523
5	Auto oriented retail, service, commercial	36	\$289,548	\$296,355	\$303,163	\$309,971	\$316,779	\$323,586
6	Surface parking	20	\$173,619	\$182,299	\$190,979	\$199,658	\$208,338	\$217,018
7	Vacant	14	\$18,170	\$20,137	\$22,104	\$24,071	\$26,037	\$28,004
TOTAL		136	\$1,915,704	\$1,915,704	\$1,915,704	\$1,915,704	\$1,915,704	\$1,915,704

Code	Major Land Use Class	# Parcels	CONVENTIONAL	PERCENTAGE CHANGE				
			TAX	10% BRR	20% BRR	30% BRR	40% BRR	50% BRR
1	Single family, Manufactured home	12		1.7%	3.3%	5.0%	6.6%	8.3%
2	Multifamily	2		4.3%	8.7%	13.0%	17.3%	21.6%
3	Street oriented retail, Res. conversion	1		5.8%	11.7%	17.5%	23.4%	29.2%
4	Retail, Prof. services + parking	51		-1.3%	-2.6%	-3.9%	-5.3%	-6.6%
5	Auto oriented retail, service, commercial	36		2.4%	4.7%	7.1%	9.4%	11.8%
6	Surface parking	20		5.0%	10.0%	15.0%	20.0%	25.0%
7	Vacant	14		10.8%	21.6%	32.5%	43.3%	54.1%
TOTAL		136		0.0%	0.0%	0.0%	0.0%	0.0%

Tax Burden Shift Under a Graduated Land Value Tax, by General Land Use

Washington County
Hillsboro Corridor

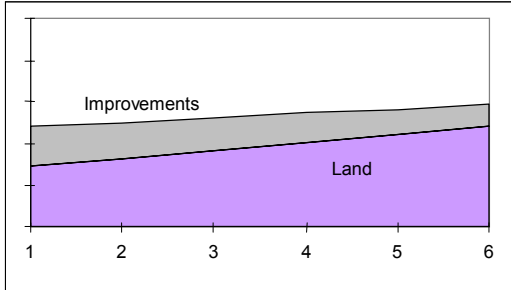
Mean Tax by Land Use Class



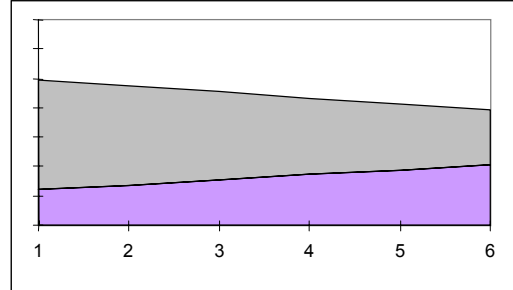
Beaverton Corridor

Mean Tax by Land Use Class

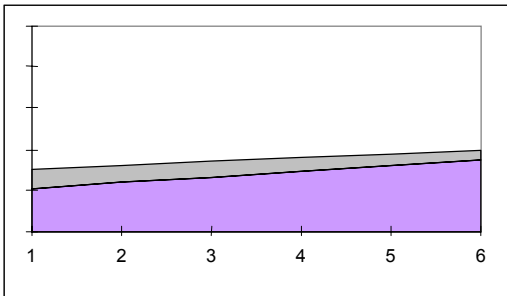
Single family, Manufactured



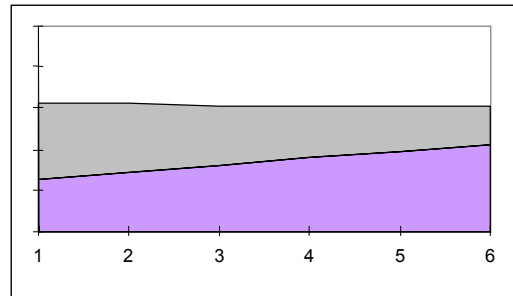
Multifamily



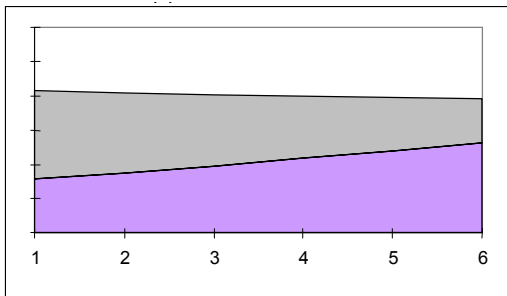
Street oriented retail, Res.



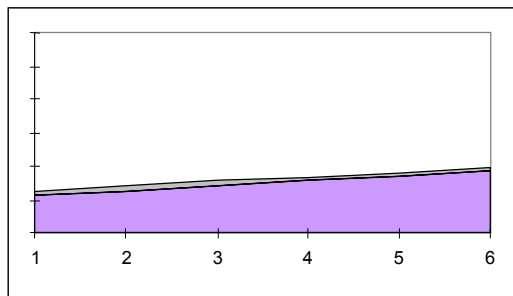
Retail, Prof. services +



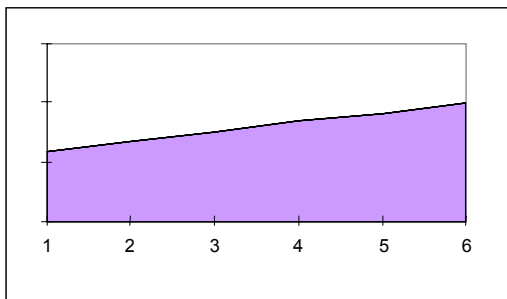
Auto oriented retail, service,



Surface parking



Vacant



Legend: X-axis: Y-axis maximum:

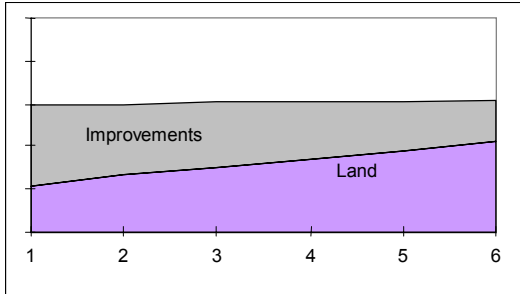
1 = Conv. tax	1L = \$3500
2 = 10% BRR	1R = \$14000
3 = 20% BRR	2L = \$4500
4 = 30% BRR	2R = \$10000
5 = 40% BRR	3L = \$12000
6 = 50% BRR	3R = \$12000
	4L = \$3000

Multnomah County

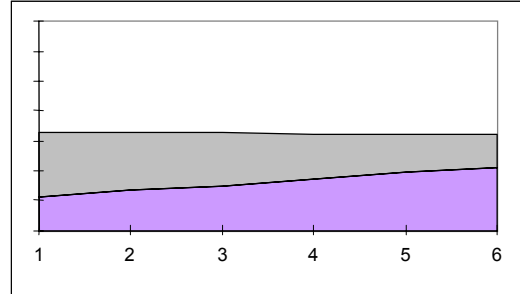
SE Division Corridor

Mean Tax by Land Use Class

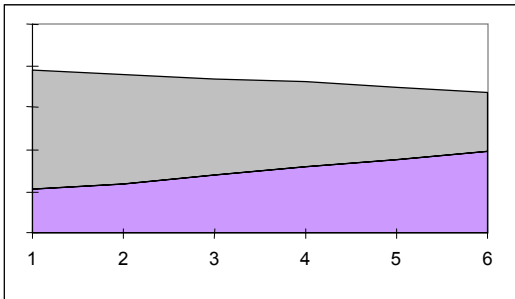
Single family, Manufactured



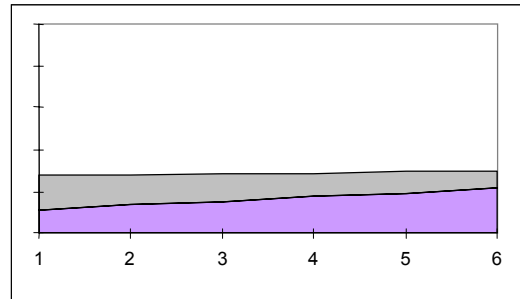
Multifamily



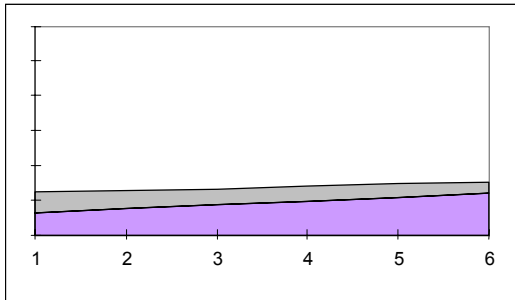
Street oriented retail, Res.



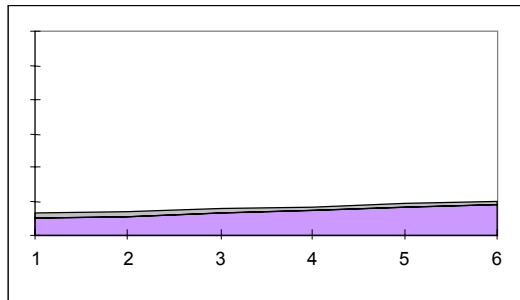
Retail, Prof. services +



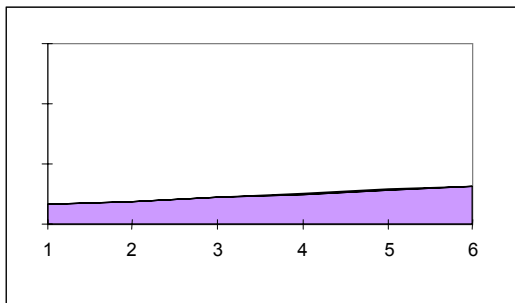
Auto oriented retail, service,



Surface parking



Vacant

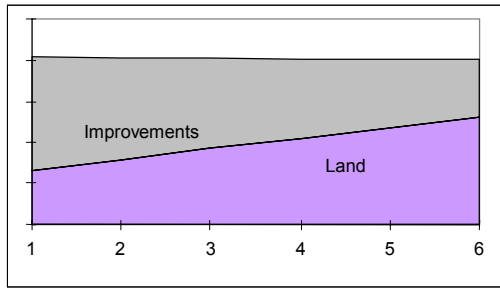


Legend: X-axis: Y-axis maximum:

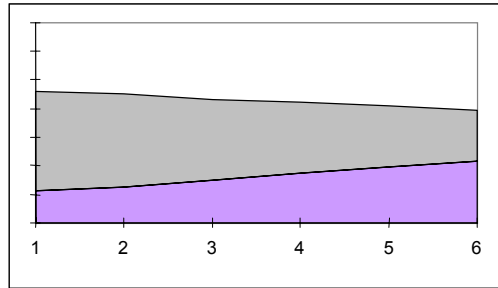
1 = Conv. tax	1L = \$3500
2 = 10% BRR	1R = \$14000
3 = 20% BRR	2L = \$4500
4 = 30% BRR	2R = \$10000
5 = 40% BRR	3L = \$12000
6 = 50% BRR	3R = \$12000
	4L = \$3000

SE Hawthorne Corridor Mean Tax by Land Use Class

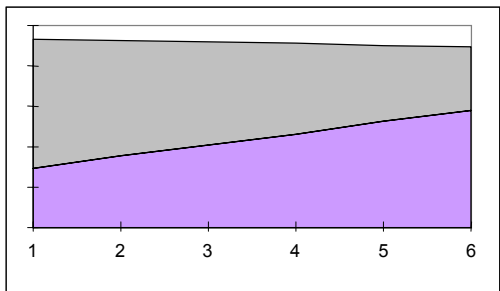
Single family, Manufactured home



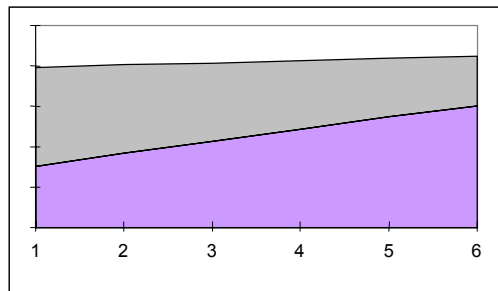
Multifamily Residential



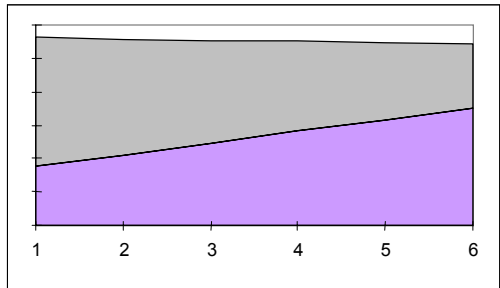
Street oriented retail, Res. conversion



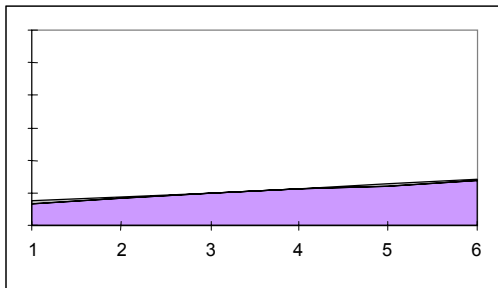
Retail, Prof. services + parking



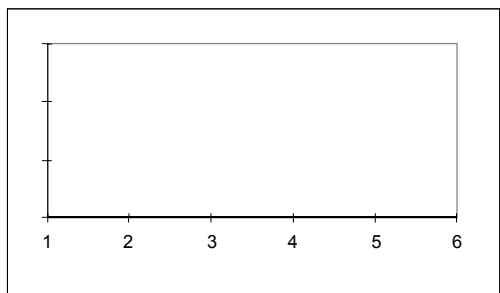
Auto oriented retail, service, commercial



Surface parking



Vacant



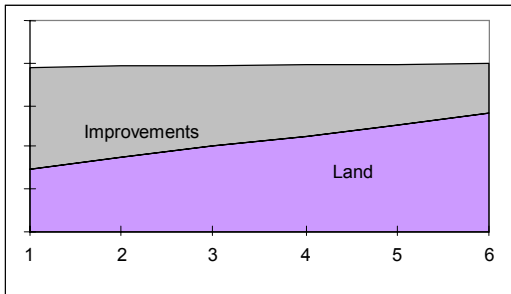
Legend: X-axis: Y-axis maximum:

1 = Conv. tax	1L = \$3500
2 = 10% BRR	1R = \$14000
3 = 20% BRR	2L = \$4500
4 = 30% BRR	2R = \$10000
5 = 40% BRR	3L = \$12000
6 = 50% BRR	3R = \$12000
	4L = \$3000

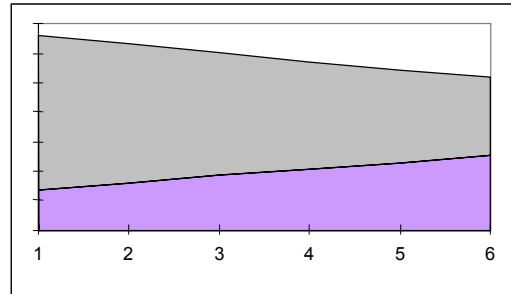
SE Stark Corridor

Mean Tax by Land Use Class

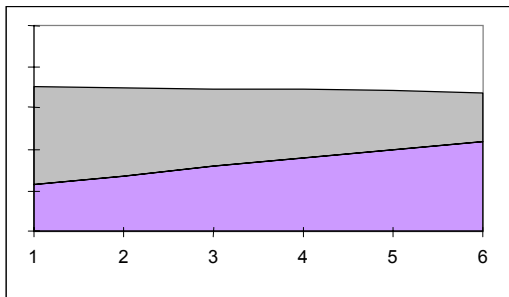
Single family, Manufactured



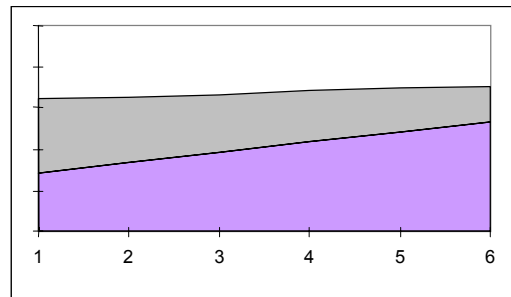
Multifamily



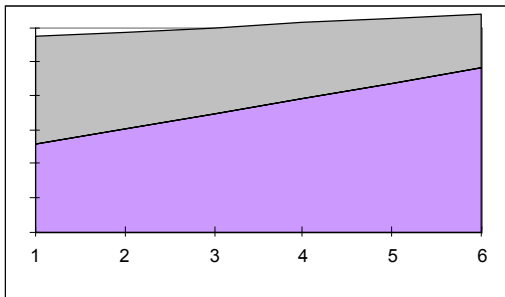
Street oriented retail, Res.



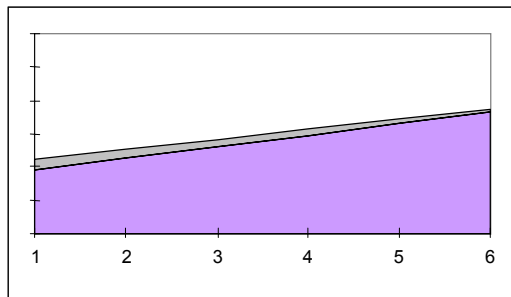
Retail, Prof. services +



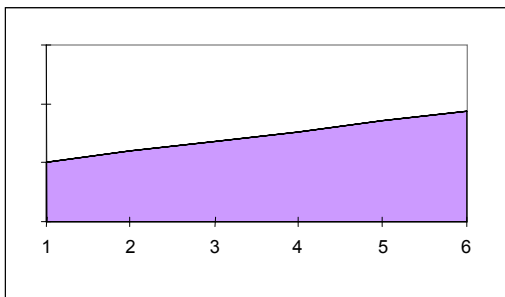
Auto oriented retail, service,



Surface parking



Vacant

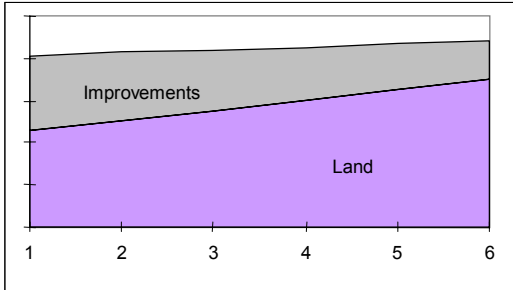


Legend: X-axis: Y-axis maximum:
 1 = Conv. tax 1L = \$3500
 2 = 10% BRR 1R = \$14000
 3 = 20% BRR 2L = \$4500
 4 = 30% BRR 2R = \$10000
 5 = 40% BRR 3L = \$12000
 6 = 50% BRR 3R = \$12000
 4L = \$3000

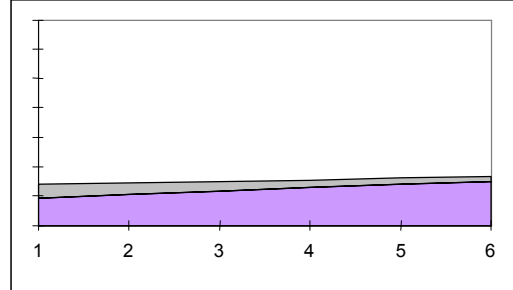
Clackamas County

SE 82nd Ave. Corridor Mean Tax by Land Use Class

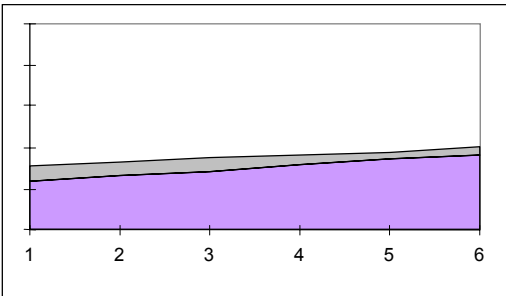
Single family, Manufactured



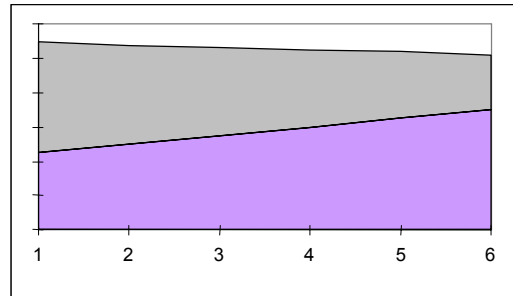
Multifamily



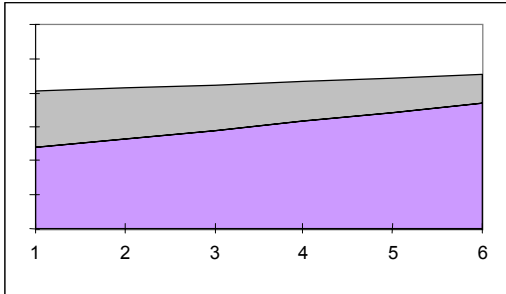
Street oriented retail, Res.



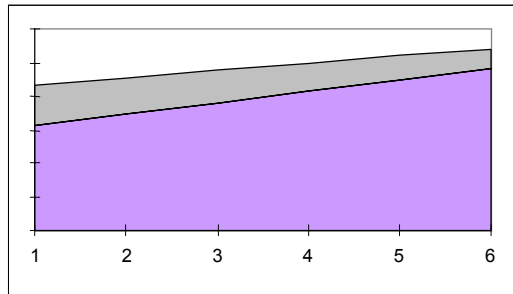
Retail, Prof. services +



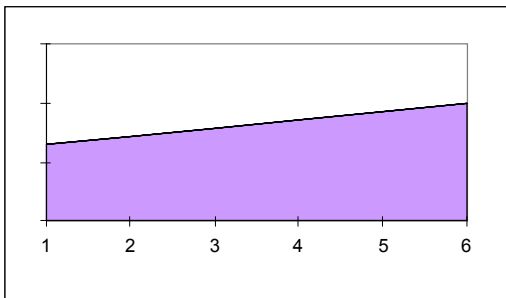
Auto oriented retail, service,



Surface parking



Vacant



Legend: X-axis: Y-axis maximum:

1 = Conv. tax	1L = \$3500
2 = 10% BRR	1R = \$14000
3 = 20% BRR	2L = \$4500
4 = 30% BRR	2R = \$30000
5 = 40% BRR	3L = \$12000
6 = 50% BRR	3R = \$12000
	4L = \$3000

Appendix 9

Tax Burden Shift by Land Use Class

HILLSBORO CORRIDOR

LUCode	Land Use Description	# Parcels*	Conventional Tax	2-Rate Tax 50% BRR	Tax Differential	Tax Shift
1	Residential - Single Family	21	\$31,327	\$35,364	\$4,037	12.9%
2	Manufactured home park	1	\$33,539	\$29,610	-\$3,929	-11.7%
3	Residential - Multifamily	11	\$82,793	\$64,050	-\$18,743	-22.6%
4	Residential - Multifamily + parking	1	\$13,501	\$13,540	\$38	0.3%
5	Business - converted residence	4	\$4,885	\$5,895	\$1,010	20.7%
6	Retail - building street oriented	2	\$4,454	\$3,390	-\$1,064	-23.9%
7	Retail - building setback	1	\$4,132	\$4,735	\$604	14.6%
8	Retail - building setback + parking	18	\$88,378	\$88,590	\$213	0.2%
9	Retail - building street oriented + parking	5	\$18,161	\$20,082	\$1,921	10.6%
10	Retail - shopping plaza + parking	5	\$48,619	\$47,127	-\$1,492	-3.1%
11	Retail - shopping center + parking	3	\$113,925	\$105,165	-\$8,760	-7.7%
12	Professional services + parking	4	\$28,625	\$30,690	\$2,065	7.2%
13	Retail & Svc. - auto oriented + parking	9	\$60,961	\$63,695	\$2,734	4.5%
14	Retail - auto/RV/boat sales + parking	9	\$51,637	\$60,177	\$8,541	16.5%
15	Vehicle service + parking	5	\$29,837	\$28,547	-\$1,290	-4.3%
16	Commercial + parking	4	\$28,660	\$29,300	\$640	2.2%
17	Surface parking	17	\$23,021	\$32,842	\$9,821	42.7%
18	Vacant lot	4	\$6,534	\$10,189	\$3,656	56.0%
Total		124	\$672,988	\$672,988	\$0	0.0%

BEAVERTON CORRIDOR

LUCode	Land Use Description	# Parcels*	Conventional Tax	2-Rate Tax 50% BRR	Tax Differential	Tax Shift
1	Residential - Single Family	73	\$123,586	\$148,903	\$25,317	20.5%
2	Manufactured home park		\$0	\$0	\$0	
3	Residential - Multifamily		\$0	\$0	\$0	
4	Residential - Multifamily + parking	16	\$158,553	\$125,586	-\$32,966	-20.8%
5	Business - converted residence	7	\$9,503	\$12,436	\$2,932	30.9%
6	Retail - building street oriented		\$0	\$0	\$0	
7	Retail - building setback	2	\$2,808	\$4,054	\$1,246	44.4%
8	Retail - building setback + parking	38	\$192,137	\$186,153	-\$5,984	-3.1%
9	Retail - building street oriented + parking	1	\$919	\$1,045	\$126	13.8%
10	Retail - shopping plaza + parking	1	\$17,569	\$20,221	\$2,652	15.1%
11	Retail - shopping center + parking	4	\$84,424	\$81,102	-\$3,322	-3.9%
12	Professional services + parking	7	\$30,309	\$29,334	-\$975	-3.2%
13	Retail & Svc. - auto oriented + parking	8	\$54,568	\$58,577	\$4,008	7.3%
14	Retail - auto/RV/boat sales + parking		\$0	\$0	\$0	
15	Vehicle service + parking	6	\$35,249	\$34,505	-\$744	-2.1%
16	Commercial + parking	9	\$101,725	\$87,039	-\$14,686	-14.4%
17	Surface parking	12	\$30,540	\$46,466	\$15,926	52.1%
18	Vacant lot	8	\$9,457	\$15,927	\$6,470	68.4%
Total		192	\$851,347	\$851,347	\$0	0.0%

- BRR = 50%

SE DIVISION CORRIDOR

LUCode	Land Use Description	# Parcels*	Conventional Tax	2-Rate Tax 50% BRR	Tax Differential	Tax Shift
1	Residential - Single Family	65	\$135,492	\$138,843	\$3,351	2.5%
2	Manufactured home park		\$0	\$0	\$0	
3	Residential - Multifamily	1	\$3,834	\$3,513	-\$321	-8.4%
4	Residential - Multifamily + parking	10	\$68,298	\$67,135	-\$1,163	-1.7%
5	Business - converted residence	8	\$16,145	\$16,137	-\$7	0.0%
6	Retail - building street oriented	27	\$106,588	\$90,671	-\$15,917	-14.9%
7	Retail - building setback	1	\$1,445	\$1,593	\$147	10.2%
8	Retail - building setback + parking	16	\$47,158	\$48,990	\$1,832	3.9%
9	Retail - building street oriented + parking	8	\$20,428	\$24,123	\$3,696	18.1%
10	Retail - shopping plaza + parking		\$0	\$0	\$0	
11	Retail - shopping center + parking		\$0	\$0	\$0	
12	Professional services + parking	1	\$2,759	\$2,206	-\$553	-20.1%
13	Retail & Svc. - auto oriented + parking		\$0	\$0	\$0	
14	Retail - auto/RV/boat sales + parking		\$0	\$0	\$0	
15	Vehicle service + parking	6	\$15,315	\$20,713	\$5,398	35.2%
16	Commercial + parking	5	\$11,990	\$12,472	\$482	4.0%
17	Surface parking	4	\$5,072	\$7,833	\$2,761	54.4%
18	Vacant lot	1	\$333	\$628	\$295	88.3%
Total		153	\$434,857	\$434,857	\$0	0.0%

SE HAWTHORNE CORRIDOR

LUCode	Land Use Description	# Parcels*	Conventional Tax	2-Rate Tax 50% BRR	Tax Differential	Tax Shift
1	Residential - Single Family	20	\$57,279	\$56,193	-\$1,087	-1.9%
2	Manufactured home park		\$0	\$0	\$0	
3	Residential - Multifamily	6	\$42,538	\$32,924	-\$9,614	-22.6%
4	Residential - Multifamily + parking	3	\$40,697	\$37,849	-\$2,848	-7.0%
5	Business - converted residence	15	\$36,021	\$37,593	\$1,572	4.4%
6	Retail - building street oriented	29	\$148,647	\$140,525	-\$8,122	-5.5%
7	Retail - building setback		\$0	\$0	\$0	
8	Retail - building setback + parking	11	\$45,501	\$57,381	\$11,880	26.1%
9	Retail - building street oriented + parking	17	\$88,249	\$98,681	\$10,432	11.8%
10	Retail - shopping plaza + parking	2	\$111,596	\$106,154	-\$5,442	-4.9%
11	Retail - shopping center + parking		\$0	\$0	\$0	
12	Professional services + parking	1	\$1,587	\$1,583	-\$4	-0.3%
13	Retail & Svc. - auto oriented + parking		\$0	\$0	\$0	
14	Retail - auto/RV/boat sales + parking		\$0	\$0	\$0	
15	Vehicle service + parking	1	\$5,037	\$5,039	\$2	0.0%
16	Commercial + parking	1	\$17,413	\$16,669	-\$744	-4.3%
17	Surface parking	3	\$4,388	\$8,361	\$3,974	90.6%
18	Vacant lot		\$0	\$0	\$0	
Total		109	\$598,953	\$598,953	\$0	0.0%

- BRR = 50%

SE STARK CORRIDOR

LUCode	Land Use Description	# Parcels*	Conventional Tax	2-Rate Tax 50% BRR	Tax Differential	Tax Shift
1	Residential - Single Family	59	\$135,451	\$133,571	-\$1,880	-1.4%
2	Manufactured home park	2	\$30,536	\$36,495	\$5,959	19.5%
3	Residential - Multifamily		\$0	\$0	\$0	
4	Residential - Multifamily + parking	24	\$318,335	\$247,634	-\$70,701	-22.2%
5	Business - converted residence	9	\$28,668	\$27,246	-\$1,422	-5.0%
6	Retail - building street oriented		\$0	\$0	\$0	
7	Retail - building setback		\$0	\$0	\$0	
8	Retail - building setback + parking	26	\$230,738	\$268,095	\$37,357	16.2%
9	Retail - building street oriented + parking		\$0	\$0	\$0	
10	Retail - shopping plaza + parking	1	\$8,208	\$8,762	\$553	6.7%
11	Retail - shopping center + parking	1	\$35,858	\$33,880	-\$1,978	-5.5%
12	Professional services + parking	5	\$41,474	\$40,329	-\$1,145	-2.8%
13	Retail & Svc. - auto oriented + parking	2	\$18,715	\$25,498	\$6,782	36.2%
14	Retail - auto/RV/boat sales + parking	4	\$120,954	\$119,428	-\$1,526	-1.3%
15	Vehicle service + parking	8	\$36,420	\$48,027	\$11,607	31.9%
16	Commercial + parking	3	\$19,210	\$24,592	\$5,382	28.0%
17	Surface parking	1	\$4,393	\$7,512	\$3,119	71.0%
18	Vacant lot	9	\$9,076	\$16,967	\$7,892	87.0%
Total		154	\$1,038,036	\$1,038,036	\$0	0.0%

SE 82ND AVE CORRIDOR

LUCode	Land Use Description	# Parcels*	Conventional Tax	2-Rate Tax 50% BRR	Tax Differential	Tax Shift
1	Residential - Single Family	9	\$12,016	\$11,822	-\$195	-1.6%
2	Manufactured home park	3	\$22,139	\$25,161	\$3,022	13.6%
3	Residential - Multifamily		\$0	\$0	\$0	
4	Residential - Multifamily + parking	2	\$5,572	\$6,777	\$1,205	21.6%
5	Business - converted residence	1	\$1,403	\$1,813	\$410	29.2%
6	Retail - building street oriented		\$0	\$0	\$0	
7	Retail - building setback		\$0	\$0	\$0	
8	Retail - building setback + parking	33	\$269,524	\$240,455	-\$29,069	-10.8%
9	Retail - building street oriented + parking	1	\$1,557	\$1,936	\$378	24.3%
10	Retail - shopping plaza + parking	6	\$152,228	\$139,786	-\$12,442	-8.2%
11	Retail - shopping center + parking	11	\$969,927	\$919,346	-\$50,580	-5.2%
12	Professional services + parking		\$0	\$0	\$0	
13	Retail & Svc. - auto oriented + parking	12	\$124,969	\$112,523	-\$12,447	-10.0%
14	Retail - auto/RV/boat sales + parking	4	\$64,929	\$91,358	\$26,429	40.7%
15	Vehicle service + parking	3	\$12,213	\$12,807	\$594	4.9%
16	Commercial + parking	17	\$87,437	\$106,900	\$19,463	22.3%
17	Surface parking	20	\$173,619	\$217,018	\$43,399	25.0%
18	Vacant lot	14	\$18,170	\$28,004	\$9,834	54.1%
Total		136	\$1,915,704	\$1,915,704	\$0	0.0%

* BRR = 50%

Appendix 10
Assessed Values by Development Status
by Parcel Size, by Corridor

CURRENT STATUS		TAXABLE ASSESSMENTS			
	No. Parcels	Total Land Value	Total Building Value	Total Value	LTV Ratio
Hillsboro					
Fully developed	22	\$2,337,596	\$6,959,214	\$9,296,810	0.25
Underutilized - Small Lot	30	\$1,539,509	\$851,191	\$2,390,700	0.64
Underutilized - Medium Lot	19	\$1,939,233	\$914,017	\$2,853,250	0.68
Underutilized - Large Lot	47	\$13,790,108	\$14,585,582	\$28,375,690	0.49
EXCL	6	\$199,518	\$287,252	\$486,770	
Beaverton					
Fully developed	34	\$5,309,125	\$16,539,865	\$21,848,990	0.24
Underutilized - Small Lot	34	\$1,674,712	\$1,098,008	\$2,772,720	0.60
Underutilized - Medium Lot	63	\$4,482,915	\$3,161,995	\$7,644,910	0.59
Underutilized - Large Lot	56	\$10,065,456	\$8,832,754	\$18,898,210	0.53
EXCL	5	\$175,178	\$69,842	\$245,020	
SE Division					
Fully developed	46	\$2,038,960	\$6,634,390	\$8,673,350	0.24
Underutilized - Small Lot	40	\$1,622,561	\$2,048,639	\$3,671,200	0.44
Underutilized - Medium Lot	21	\$2,019,990	\$2,428,800	\$4,448,790	0.45
Underutilized - Large Lot	0				
EXCL	46	\$2,079,570	\$3,747,080	\$5,826,650	
SE Hawthorne					
Fully developed	50	\$3,957,921	\$12,745,039	\$16,702,960	0.24
Underutilized - Small Lot	20	\$1,220,530	\$1,706,020	\$2,926,550	0.42
Underutilized - Medium Lot	17	\$2,136,095	\$2,144,545	\$4,280,640	0.50
Underutilized - Large Lot	3	\$1,409,124	\$970,006	\$2,379,130	0.59
EXCL	19	\$1,415,948	\$2,903,712	\$4,319,660	
SE Stark					
Fully developed	57	\$6,415,255	\$21,560,415	\$27,975,670	0.23
Underutilized - Small Lot	20	\$702,064	\$919,436	\$1,621,500	0.43
Underutilized - Medium Lot	28	\$1,830,342	\$1,792,128	\$3,622,470	0.51
Underutilized - Large Lot	45	\$9,353,578	\$7,580,062	\$16,933,640	0.55
EXCL	4	\$181,989	\$409,301	\$591,290	
SE 82nd Ave					
Fully developed	22	\$8,215,125	\$23,954,475	\$32,169,600	0.26
Underutilized - Small Lot	28	\$2,024,884	\$883,150	\$2,908,034	0.70
Underutilized - Medium Lot	27	\$3,433,898	\$1,512,968	\$4,946,866	0.69
Underutilized - Large Lot	49	\$48,313,605	\$41,175,493	\$89,489,098	0.54
EXCL	10	\$271,457	\$5,160	\$276,617	

Appendix 11
Tax Burden Shift by Parcel Development Status

Hillsboro Corridor	No. parcels	Conventional		Tax	
		Tax	2-Rate Tax *	Differential	Tax Shift
FULLY DEVELOPED	22	\$ 144,937	\$ 112,263	\$ (32,674)	-22.5%
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	30	\$ 37,271	\$ 44,843	\$ 7,572	20.3%
Underutilized - Medium Lot	19	\$ 44,482	\$ 55,254	\$ 10,772	24.2%
Underutilized - Large Lot	47	\$ 442,377	\$ 455,945	\$ 13,568	3.1%
Total Underutilized	96	\$ 524,130	\$ 556,042	\$ 31,912	6.1%

Beaverton Corridor	No. parcels	Conventional		Tax	
		Tax	2-Rate Tax *	Differential	Tax Shift
FULLY DEVELOPED	34	\$ 361,819	\$ 285,020	\$ (76,800)	-21.2%
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	34	\$ 45,916	\$ 55,799	\$ 9,882	21.5%
Underutilized - Medium Lot	63	\$ 126,600	\$ 151,208	\$ 24,608	19.4%
Underutilized - Large Lot	56	\$ 312,954	\$ 353,857	\$ 40,903	13.1%
Total Underutilized	153	\$ 485,470	\$ 560,864	\$ 75,393	15.5%

SE Division Corridor	No. parcels	Conventional		Tax	
		Tax	2-Rate Tax *	Differential	Tax Shift
FULLY DEVELOPED	46	\$ 183,962	\$ 153,372	\$ (30,590)	-16.6%
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	40	\$ 77,866	\$ 87,787	\$ 9,921	12.7%
Underutilized - Medium Lot	21	\$ 94,359	\$ 107,999	\$ 13,641	14.5%
Underutilized - Large Lot	-	\$ -	\$ -	\$ -	
Total Underutilized	61	\$ 172,225	\$ 195,786	\$ 23,561	13.7%

SE Hawthorne Corridor	No. parcels	Conventional		Tax	
		Tax	2-Rate Tax *	Differential	Tax Shift
FULLY DEVELOPED	50	\$ 354,270	\$ 301,953	\$ (52,317)	-14.8%
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	20	\$ 62,072	\$ 69,527	\$ 7,455	12.0%
Underutilized - Medium Lot	17	\$ 90,792	\$ 112,761	\$ 21,968	24.2%
Underutilized - Large Lot	3	\$ 50,461	\$ 69,669	\$ 19,208	38.1%
Total Underutilized	40	\$ 203,326	\$ 251,957	\$ 48,631	23.9%

* 50% BRR

SE Stark Corridor	No. parcels	Conventional		Tax	
		Tax	2-Rate Tax *	Differential	Tax Shift
FULLY DEVELOPED	57	\$ 577,138	\$ 469,824	\$ (107,314)	-18.6%
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	20	\$ 33,452	\$ 36,562	\$ 3,110	9.3%
Underutilized - Medium Lot	28	\$ 74,732	\$ 89,080	\$ 14,348	19.2%
Underutilized - Large Lot	45	\$ 349,341	\$ 438,944	\$ 89,603	25.6%
Total Underutilized	93	\$ 457,524	\$ 564,585	\$ 107,061	23.4%

SE 82nd Ave Corridor	No. parcels	Conventional		Tax	
		Tax	2-Rate Tax *	Differential	Tax Shift
FULLY DEVELOPED	22	\$ 474,823	\$ 363,801	\$ (111,022)	-23.4%
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	28	\$ 42,923	\$ 52,614	\$ 9,691	22.6%
Underutilized - Medium Lot	27	\$ 73,016	\$ 89,338	\$ 16,323	22.4%
Underutilized - Large Lot	49	\$ 1,320,859	\$ 1,403,732	\$ 82,873	6.3%
Total Underutilized	104	\$ 1,436,797	\$ 1,545,685	\$ 108,887	7.6%

All Corridors	No. parcels	Conventional		Tax	
		Tax	2-Rate Tax *	Differential	Tax Shift
FULLY DEVELOPED	231	\$ 2,096,949	\$ 1,686,232	\$ (410,717)	-19.6%
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	172	\$ 299,500	\$ 347,132	\$ 47,632	15.9%
Underutilized - Medium Lot	175	\$ 503,980	\$ 605,640	\$ 101,659	20.2%
Underutilized - Large Lot	200	\$ 2,475,993	\$ 2,722,147	\$ 246,155	9.9%
Total Underutilized	778	\$ 3,279,473	\$ 3,674,919	\$ 395,446	12.1%

* 50% BRR

Appendix 12 Contents of a Redevelopment Proforma

PROJECT DEVELOPMENT PROFORMA

Existing site specifications:

Lot sq. ft.
Site value
Bldg. value
Internal sq. ft.

Proposed:

RESIDENTIAL

No. floors with residential units
Avg. unit size
Common area
No. dwelling units
Total internal sq. ft.
 Lot coverage ratio

MIXED USE

Ground floor commercial:
 Lot coverage ratio
 Total internal sq. ft.
 Common area
 Rentable floor space

Parking:

 Lot coverage ratio
 Pkg. space standards
 Total pkg. sq. ft.
 No. residential spaces
 No. commercial spaces
 No. public spaces

Total bldg. sq. ft.
Subtotal above ground bldg. sq. ft.
GFAR
FAR

PROJECT DEVELOPMENT COSTS:

 Unit costs -
Demolition cost
Hazardous materials abatement

New construction costs:

Site Improvements
Residential floor area
Commercial floor area
Subgrade parking area

Total hard costs

Soft costs

Total Development Costs

PROJECT FINANCING COSTS:

A&D Loan:

 Loan terms
Ann. mortgage payments
Ann. property tax payments
Total annual payments
Total equity
Total carrying costs

Total Financing Costs

Total Project Cost

Total appraised value
Standard LTV ratio
 Land value
 Bldg. value
BV/sf Lot Area

AUTHORS' NOTE: Initial entries on the proforma spreadsheet consist of four *existing* site specifications: two valuation and two site utilization measures, representing each of the 18 underutilized parcel aggregations. Three of these average measures are found in Table 5.4, but a fourth must be calculated: internal floor space. Because this measure is not universally available in the raw data, estimates are needed. From the 514 parcels for which internal building space is included, a mean FAR for each lot size class can be calculated. These ratios are as follows: Small Lot FAR = .307, Medium Lot FAR = .278, Large Lot FAR = .147. The FAR estimates are multiplied by mean lot size to arrive at an estimated mean floor area for each of the 18 aggregations.

The end product on the financial side of the proforma is the unit building value of a newly constructed building. In order to replicate a new building on the same site, a single indicator of building bulk must be entered into a precedent cell in the *proposed* section of the spreadsheet. The most workable variable for this purpose seems to be the number of floors in the residential portion of the project. However, the actual measure required is the standard FAR. But the FAR is an outcome, not a determinant. Converting the FAR from a dependent to an antecedent variable is accomplished through a simple iteration by which the outcome FAR value is changed to the standard value by changing the input value for number of residential floors. What makes this operation possible is the dynamic nature of this particular proforma. Because all cell entries are interdependent, a change to an antecedent variable will produce changes throughout the spreadsheet. For example, a value of 2 residential floors might result in an FAR of 1.65. The FAR can then be changed to a desired value of 3.0 by changing the floor number.

Repeating this procedure using a different set of existing site specifications, the outcome unit building values are calculated for all 18 aggregations. Prior to this calculated outcome, the total project cost as the equivalent of the total market value assessment must first be broken down into land and building components. In the previously reported assessment summaries by current development status, fully developed parcels are found to have an overall LTV ratio of .24 (see Table 5.1). This ratio can also be used as a standard for new construction. Thus, to find the appraised land value, the total appraised value figure is multiplied by .24; the residual is the building value which is divided by the lot area to derive the unit building value BV/LA.

A caveat should be issued on the use of the standard LTV ratio. Land values do not accrue on a parcel-specific basis. Only after the general area has experienced an influx of new building investment and public improvements will land values see a general increase. Hence, the real market values assigned to the land portion of an individual parcel within these subsets are 'real' only at the aggregate level. A qualification to the FAR measure is also in order. Because total project costs include all construction components, the floor area ratio must reflect this. The standard measure of FAR has been developed primarily as a planning/zoning tool. It is intended to measure visual impacts on development sites, and therefore accounts only for above-grade building bulk. The redevelopment scenarios envision some below-grade construction in the form of parking structures. Therefore, the accessory ratio in this case is the gross floor area ratio, or GFAR.

Appendix 13 Site and Value Characteristics of Redeveloped Parcels

Mean Values by Lot Size Group

Hillsboro Corridor		
Small Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	7,624	
Residential floor area	-	5,718
Commercial floor area	2,344	6,481
Total building internal area	2,344	19,061
Floor Area Ratio	0.31	1.60
No. Dwelling Units	-	5
No. Residential floors	-	1
Rentable commercial space	1,547	4,277
No. subgrade parking spaces	-	22
Land Value	\$87,744	\$622,458
Building Value	\$48,771	\$1,971,117
LTV Ratio	0.64	0.24
Unit building value	\$6	\$259

Medium Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	14,877	
Residential floor area	-	22,316
Commercial floor area	4,133	12,646
Total building internal area	4,133	48,352
Floor Area Ratio	0.28	2.35
No. Dwelling Units	-	20
No. Residential floors	-	2
Rentable commercial space	2,728.04	8,346
No. subgrade parking spaces	-	44
Land Value	\$182,232	\$1,555,719
Building Value	\$84,782	\$4,926,445
LTV Ratio	0.68	0.24
Unit building value	\$6	\$331

Large Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	63,049	
Residential floor area	-	189,146
Commercial floor area	9,273	53,591
Total building internal area	9,273	299,480
Floor Area Ratio	0.15	3.85
No. Dwelling Units	-	166
No. Residential floors	-	4
Rentable commercial space	6,120.35	35,370
No. subgrade parking spaces	-	105
Land Value	\$632,271	\$8,924,489
Building Value	\$705,001	\$28,260,881
LTV Ratio	0.47	0.24
Unit building value	\$11	\$448

Beaverton Corridor		
Small Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	8,156	
Residential floor area	-	6,117
Commercial floor area	2,508	6,933
Total building internal area	2,508	20,391
Floor Area Ratio	0.31	1.60
No. Dwelling Units	-	5
No. Residential floors	-	1
Rentable commercial space	1,655	4,576
No. subgrade parking spaces	-	24
Land Value	\$84,669	\$665,418
Building Value	\$55,552	\$2,107,158
LTV Ratio	0.60	0.24
Unit building value	\$7	\$258

Medium Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	14,779	
Residential floor area	-	27,711
Commercial floor area	4,106	12,562
Total building internal area	4,106	53,575
Floor Area Ratio	0.28	2.73
No. Dwelling Units	-	24
No. Residential floors	-	3
Rentable commercial space	2,710.02	8,291
No. subgrade parking spaces	-	39
Land Value	\$126,152	\$1,684,250
Building Value	\$92,766	\$5,333,460
LTV Ratio	0.58	0.24
Unit building value	\$6	\$361

Large Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	35,500	
Residential floor area	-	133,126
Commercial floor area	5,221	30,175
Total building internal area	5,221	195,251
Floor Area Ratio	0.15	4.60
No. Dwelling Units	-	117
No. Residential floors	-	5
Rentable commercial space	3,446.13	19,916
No. subgrade parking spaces	-	36
Land Value	\$310,095	\$5,688,292
Building Value	\$267,230	\$18,012,924
LTV Ratio	0.54	0.24
Unit building value	\$8	\$507

SE Division Corridor

Small Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	5,812	
Residential floor area	-	4,359
Commercial floor area	1,787	4,940
Total building internal area	1,787	14,529
Floor Area Ratio	0.31	1.60
No. Dwelling Units	-	4
No. Residential floors	-	1
Rentable commercial space	1,179	3,260
No. subgrade parking spaces	-	17
Land Value	\$ 95,797	\$ 475,981
Building Value	\$ 118,744	\$ 1,507,274
LTV Ratio	0.45	0.24
Unit building value	\$ 20.43	\$ 259.35

Medium Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	11,928	
Residential floor area	-	22,364
Commercial floor area	3,314	10,138
Total building internal area	3,314	43,238
Floor Area Ratio	0.28	2.73
No. Dwelling Units	-	20
No. Residential floors	-	2.5
Rentable commercial space	2,187.13	6,691
No. subgrade parking spaces	-	32
Land Value	\$ 225,473	\$ 1,365,688
Building Value	\$ 261,416	\$ 4,324,678
LTV Ratio	0.46	0.24
Unit building value	\$ 21.92	\$ 362.58

Large Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)		
Residential floor area		
Commercial floor area		
Total building internal area		
Floor Area Ratio		
No. Dwelling Units		
No. Residential floors		
Rentable commercial space		
No. subgrade parking spaces		
Land Value		
Building Value		
LTV Ratio		
Unit building value		

SE Hawthorne Corridor

Small Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	7,082	
Residential floor area	-	5,311
Commercial floor area	2,177	6,019
Total building internal area	2,177	17,704
Floor Area Ratio	0.31	1.60
No. Dwelling Units	-	5
No. Residential floors	-	1
Rentable commercial space	1,437	3,973
No. subgrade parking spaces	-	21
Land Value	\$ 154,990	\$ 581,972
Building Value	\$ 213,334	\$ 1,842,911
LTV Ratio	0.42	0.24
Unit building value	\$ 30.12	\$ 260.23

Medium Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	12,822	
Residential floor area	-	24,041
Commercial floor area	3,562	10,899
Total building internal area	3,562	46,479
Floor Area Ratio	0.28	2.73
No. Dwelling Units	-	21
No. Residential floors	-	2.5
Rentable commercial space	2,351.11	7,193
No. subgrade parking spaces	-	34
Land Value	\$ 332,773	\$ 1,472,767
Building Value	\$ 317,997	\$ 4,663,763
LTV Ratio	0.51	0.24
Unit building value	\$ 24.80	\$ 363.73

Large Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	58,455	
Residential floor area	-	219,206
Commercial floor area	8,598	49,687
Total building internal area	8,598	321,502
Floor Area Ratio	0.15	4.60
No. Dwelling Units	-	192
No. Residential floors	-	5
Rentable commercial space	5,674.43	32,793
No. subgrade parking spaces	-	59
Land Value	\$ 1,198,057	\$ 9,402,031
Building Value	\$ 813,213	\$ 29,773,099
LTV Ratio	0.60	0.24
Unit building value	\$ 13.91	\$ 509.33

SE Stark Corridor

Small Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	7,733	
Residential floor area	-	5,799
Commercial floor area	2,377	6,573
Total building internal area	2,377	19,331
Floor Area Ratio	0.31	1.60
No. Dwelling Units	-	5
No. Residential floors	-	1
Rentable commercial space	1,569	4,338
No. subgrade parking spaces	-	23
Land Value	\$ 68,337	\$ 630,227
Building Value	\$ 83,491	\$ 1,995,719
LTV Ratio	0.45	0.24
Unit building value	\$ 10.80	\$ 258.09

Medium Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	14,098	
Residential floor area	-	21,148
Commercial floor area	3,917	11,984
Total building internal area	3,917	45,820
Floor Area Ratio	0.28	2.35
No. Dwelling Units	-	19
No. Residential floors	-	2
Rentable commercial space	2,585.17	7,909
No. subgrade parking spaces	-	42
Land Value	\$ 116,905	\$ 1,471,354
Building Value	\$ 116,589	\$ 4,659,287
LTV Ratio	0.50	0.24
Unit building value	\$ 8.27	\$ 330.48

Large Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	47,705	
Residential floor area	-	143,116
Commercial floor area	7,017	40,550
Total building internal area	7,017	226,600
Floor Area Ratio	0.15	3.85
No. Dwelling Units	-	126
No. Residential floors	-	4
Rentable commercial space	4,630.93	26,763
No. subgrade parking spaces	-	80
Land Value	\$ 411,785	\$ 6,749,215
Building Value	\$ 321,468	\$ 21,372,514
LTV Ratio	0.56	0.24
Unit building value	\$ 6.74	\$ 448.01

SE 82nd Ave Corridor

Small Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	7,407	
Residential floor area	-	5,555
Commercial floor area	2,277	6,296
Total building internal area	2,277	18,517
Floor Area Ratio	0.31	1.60
No. Dwelling Units	-	5
No. Residential floors	-	1
Rentable commercial space	1,503	4,155
No. subgrade parking spaces	-	22
Land Value	\$ 103,377	\$ 605,629
Building Value	\$ 46,833	\$ 1,917,825
LTV Ratio	0.69	0.24
Unit building value	\$ 6.32	\$ 258.93

Medium Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	12,989	
Residential floor area	-	19,484
Commercial floor area	3,609	11,041
Total building internal area	3,609	42,215
Floor Area Ratio	0.28	2.35
No. Dwelling Units	-	17
No. Residential floors	-	2
Rentable commercial space	2,381.79	7,287
No. subgrade parking spaces	-	38
Land Value	\$ 177,262	\$ 1,359,204
Building Value	\$ 78,734	\$ 4,304,145
LTV Ratio	0.69	0.24
Unit building value	\$ 6.06	\$ 331.36

Large Lot Group	Current Status	Redeveloped
Lot Area (sq. ft.)	101,868	
Residential floor area	-	305,603
Commercial floor area	14,983	86,588
Total building internal area	14,983	483,871
Floor Area Ratio	0.15	3.85
No. Dwelling Units	-	268
No. Residential floors	-	4
Rentable commercial space	9,888.66	57,148
No. subgrade parking spaces	-	170
Land Value	\$ 1,387,278	\$ 14,438,283
Building Value	\$ 1,181,864	\$ 45,721,231
LTV Ratio	0.54	0.24
Unit building value	\$ 11.60	\$ 448.83

Appendix 14
Assessed Values of Redeveloped Parcels
by Parcel Size, by Corridor

Redeveloped Status		Taxable Assessments			
	No. Parcels	Total Land Value	Total Building Value	Total Value	LTV Ratio
Hillsboro					
Redeveloped - Small Lot	30	10,999,110	35,012,149	46,011,259	0.24
Redeveloped - Medium Lot	19	16,704,439	53,173,238	69,877,677	0.24
Redeveloped - Large Lot	47	194,412,138	618,848,858	813,260,996	0.24
Beaverton					
Redeveloped - Small Lot	34	13,182,351	41,961,798	55,144,149	0.24
Redeveloped - Medium Lot	63	61,186,520	194,767,716	255,954,236	0.24
Redeveloped - Large Lot	56	182,270,413	580,199,559	762,469,972	0.24
SE Division					
Redeveloped - Small Lot	40	8,106,553	25,804,619	33,911,172	0.24
Redeveloped - Medium Lot	21	12,249,138	38,991,212	51,240,350	0.24
Redeveloped - Large Lot	0				
SE Hawthorne					
Redeveloped - Small Lot	20	4,724,389	15,038,583	19,762,972	0.24
Redeveloped - Medium Lot	17	9,482,938	30,185,901	39,668,839	0.24
Redeveloped - Large Lot	3	11,049,213	35,171,636	46,220,849	0.24
SE Stark					
Redeveloped - Small Lot	20	6,609,918	21,040,560	27,650,478	0.24
Redeveloped - Medium Lot	28	22,825,573	72,657,910	95,483,483	0.24
Redeveloped - Large Lot	45	155,893,830	496,238,146	652,131,976	0.24
SE 82nd Ave					
Redeveloped - Small Lot	28	11,616,832	36,978,469	48,595,301	0.24
Redeveloped - Medium Lot	27	26,129,061	83,173,508	109,302,569	0.24
Redeveloped - Large Lot	49	500,611,344	1,593,536,089	2,094,147,433	0.24

Appendix 15

Tax Burden Shift on Redevelopment Sites

Total Tax Revenue by Lot Size Group

Hillsboro Corridor	No. parcels	Conventional Tax	2-Rate Tax *	Tax Differential	Tax Shift
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	30	\$ 37,271	\$ 44,843	\$ 7,572	20.3%
Underutilized - Medium Lot	19	\$ 44,482	\$ 55,254	\$ 10,772	24.2%
Underutilized - Large Lot	47	\$ 442,377	\$ 455,945	\$ 13,568	3.1%
REDEVELOPMENT SCENARIO:					
Redeveloped - Small Lot	30	\$ 717,316	\$ 545,902	\$ (171,414)	-23.9%
Redeveloped - Medium Lot	19	\$ 1,089,393	\$ 829,065	\$ (260,328)	-23.9%
Redeveloped - Large Lot	47	\$ 12,678,739	\$ 9,648,954	\$ (3,029,785)	-23.9%
Multiples of total current:		28	20		
Beaverton Corridor					
No. parcels	Conventional Tax	2-Rate Tax *	Tax Differential	Tax Shift	
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	34	\$ 45,916	\$ 55,799	\$ 9,882	21.5%
Underutilized - Medium Lot	63	\$ 126,600	\$ 151,208	\$ 24,608	19.4%
Underutilized - Large Lot	56	\$ 312,954	\$ 353,857	\$ 40,903	13.1%
REDEVELOPMENT SCENARIO:					
Redeveloped - Small Lot	34	\$ 913,187	\$ 715,094	\$ (198,093)	-21.7%
Redeveloped - Medium Lot	63	\$ 4,238,602	\$ 3,319,145	\$ (919,457)	-21.7%
Redeveloped - Large Lot	56	\$ 12,626,503	\$ 9,887,505	\$ (2,738,998)	-21.7%
Multiples of total current:		37	25		
SE Division Corridor					
No. parcels	Conventional Tax	2-Rate Tax *	Tax Differential	Tax Shift	
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	40	\$ 77,866	\$ 87,787	\$ 9,921	12.7%
Underutilized - Medium Lot	21	\$ 94,359	\$ 107,999	\$ 13,641	14.5%
Underutilized - Large Lot	-	\$ -	\$ -	\$ -	
REDEVELOPMENT SCENARIO:					
Redeveloped - Small Lot	40	\$ 719,256	\$ 603,709	\$ (115,547)	-16.1%
Redeveloped - Medium Lot	21	\$ 1,086,808	\$ 912,214	\$ (174,594)	-16.1%
Redeveloped - Large Lot		\$ -	\$ -	\$ -	
Multiples of total current:		10	8		
SE Hawthorne Corridor					
No. parcels	Conventional Tax	2-Rate Tax *	Tax Differential	Tax Shift	
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	20	\$ 62,072	\$ 69,527	\$ 7,455	12.0%
Underutilized - Medium Lot	17	\$ 90,792	\$ 112,761	\$ 21,968	24.2%
Underutilized - Large Lot	3	\$ 50,461	\$ 69,669	\$ 19,208	38.1%
REDEVELOPMENT SCENARIO:					
Redeveloped - Small Lot	20	\$ 419,173	\$ 358,576	\$ (60,597)	-14.5%
Redeveloped - Medium Lot	17	\$ 841,376	\$ 719,744	\$ (121,632)	-14.5%
Redeveloped - Large Lot	3	\$ 980,344	\$ 838,623	\$ (141,722)	-14.5%
Multiples of total current:		11	8		

SE Stark Corridor	No. parcels	Conventional Tax	2-Rate Tax *	Tax Differential	Tax Shift
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	20	\$ 33,452	\$ 36,562	\$ 3,110	9.3%
Underutilized - Medium Lot	28	\$ 74,732	\$ 89,080	\$ 14,348	19.2%
Underutilized - Large Lot	45	\$ 349,341	\$ 438,944	\$ 89,603	25.6%
REDEVELOPMENT SCENARIO:					
Redeveloped - Small Lot	20	\$ 570,429	\$ 471,969	\$ (98,460)	-17.3%
Redeveloped - Medium Lot	28	\$ 1,969,824	\$ 1,629,819	\$ (340,005)	-17.3%
Redeveloped - Large Lot	45	\$ 13,453,483	\$ 11,131,321	\$ (2,322,161)	-17.3%
Multiples of total current:		35	23		
SE 82nd Ave Corridor					
No. parcels	Conventional Tax	2-Rate Tax *	Tax Differential	Tax Shift	
CURRENT STATUS SCENARIO:					
Underutilized - Small Lot	28	\$ 42,923	\$ 52,614	\$ 9,691	22.6%
Underutilized - Medium Lot	27	\$ 73,016	\$ 89,338	\$ 16,323	22.4%
Underutilized - Large Lot	49	\$ 1,320,859	\$ 1,403,732	\$ 82,873	6.3%
REDEVELOPMENT SCENARIO:					
Redeveloped - Small Lot	28	\$ 717,267	\$ 537,358	\$ (179,909)	-25.1%
Redeveloped - Medium Lot	27	\$ 1,613,306	\$ 1,208,648	\$ (404,658)	-25.1%
Redeveloped - Large Lot	49	\$ 30,909,616	\$ 23,156,694	\$ (7,752,922)	-25.1%
Multiples of total current:		23	16		

* 50% BRR