
DENSITY AT ANY COST

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In September, the Portland region's Metro government released its draft 2014 Urban Growth Report. This Report deserves special attention by citizens and professionals in the local business community because it distorts economic data and will lead the region to make decisions that will harm economic growth. Much of the economic damage comes from an unrealistic view of housing markets, where the plan envisions a doubling of apartment rents over twenty years, creating a large burden for low-income households in the region. In addition, the plan assumes multi-billion dollar unfunded mandates on local government to subsidize housing and transportation projects. And ironically, the Metro plan is likely to cause net environmental harm to the global climate by shifting population growth from our region to places in the southeast and southwest United States where carbon emissions will be higher. In this article, I will explain the purpose of Metro's study and outline the implications of this Report.

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BACKGROUND

Under Oregon's land use laws, local governments are required to assess the capacity of their urban growth boundary (UGB) every five years and determine whether the UGB contains sufficient land supply to support 20 years worth of population growth and employment growth. In the case of the Portland region, the elected regional government, Metro, produces a demographic and economic forecast for the region to begin this planning process. The anticipated growth is then allocated between the Portland Metro jurisdiction and non-Metro locations in Clark County, Washington, and exurban communities such as Woodburn and Newberg. Metro then consults local governments to assess their capacity to receive that growth, using existing zoning regulation to estimate the supply potential of the region. The reconciliation of demand and supply of residential and employment land determines if the Urban Growth Boundary needs to be expanded.

Metro's UGB was established in the late 1970's and was initially set with a lot of capacity for future growth. In part due to the extended economic recession of that period, Metro's UGB was not significantly expanded in the 1980's. Economic growth in the region picked up in the 1990's, and using the process described above, Metro has expanded the Urban Growth Boundary in 1996, 2001, 2006, and 2011, primarily in eastern Clackamas County, but also in parts of Multnomah County and Washington County. That process hasn't produced many of the results anticipated since a large newly created jurisdiction, Damascus, lacked the infrastructure for development and many local citizens have resisted urbanization.

Part of the failure of Metro's expansion in the Damascus area of Clackamas County can also be blamed on the weak housing demand in Damascus. State rules governing UGB expansion call for UGBs to be expanded in places of low agricultural productivity, protecting land with high agricultural potential. The highest valued farmland in the exurban areas of Portland tends to be located in Washington County, where land is more flat, well drained, has good highway access, and has a better climate than the eastside. Unfortunately, housing development is also more attractive in places with flat land, well-drained soils, better highway access, and milder climates (along with good school quality and employment access). In effect, state land use rules that force UGB expansion in low-value agricultural land in the eastside has meant that the region has received relatively little housing production per acre when expanding the UGB.

Frustration with the UGB expansion process and with legal challenges by environmental interests to UGB expansion led the Oregon State Legislature to decide in March, 2014, to expand the UGB in the Portland and Salem metropolitan areas by statute. While the legislative decision largely validated administrative decisions that Metro had already made, it questions whether the focus for land use decision-making is moving from Metro headquarters to the state legislature in Salem.

METRO'S URBAN GROWTH REPORT AND THE IMPACT ON HOUSING COSTS

In recent UGB decisions, Metro has used a spatial planning model known as Metroscope, which assigns population and employment to parcels in the region. Although the description of the Metroscope model uses the words “demand” and “supply”, it’s important to recognize that Metroscope is not an economic forecasting model that tries to understand the decision by firms and households to locate inside or outside the region or understand what type of housing they want. Rather, Metroscope is a population and employment assignment model that treats the region’s urban growth boundary as paramount. Within the model, households and firms must locate within the UGB should any zoning capacity exist, even if that capacity can only be utilized at very high cost. Moreover, residential zoning within the City of Portland is relatively generous, whether measured as height limits or as floor area ratio. However, much of that generously zoned land is already developed and will be unlikely to develop to its full extent in any conceivable time horizon. Nevertheless, given the programming of the Metroscope model, the zoning capacity within the City of Portland acts as a sponge to soak up any potential housing demand.

The impact of the excessive zoning for multi-family in the City of Portland can be seen in the following table showing the percentage of single-family housing and multi-family housing in the Portland region over the last 55 years compared to the projected 20 years in the Metro plan. Historically, the Portland region’s housing stock has comprised of about two-third single-family homes and one-third multi-family housing. As land has become more expensive, multi-family housing has become more popular, but we still produce about 60% single-family housing and 40% multi-family housing. In the Urban Growth Report, Metro staff have become fixated on the last five years of building permit data, when the national economy was in crisis, home values deteriorated, consumers lost confidence in homeownership, and the federal government was the dominant supplier of credit, largely for multi-family housing. Using a limited amount of data, they have produced an unbelievable housing production forecast.

Table 1: Single family vs. multi-family housing, tri-county region

Census Year	Single Family	Multi Family
1960	85%	15%
1970	76%	24%
1980	81%	19%
1990	80%	20%
2000	74%	26%
2010	70%	30%

Units Built 1960-2010

60%	40%
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Metro Plan, 2015-35

36%	64%
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Source: Metro staff, Metro Urban Growth Report

To achieve that level of multi-family development inside the urban growth boundary, Metro projects that 96,911 of the 205,780 housing units produced in the next 20 years (47.1%) will be built at a density level of 46 units per acre or greater. 37.9% of the units produced will be built at the Pearl District density level of 101 units per acre or higher. By comparison, mostly single-family neighborhoods in East Portland were developed at 8 units per acre. In addition, a staggering 77% of the housing capacity of the region is estimated to come from redeveloped property or neighborhood infill, which means that for most housing projects built, some existing housing or business will need to be demolished. The City already faces considerable neighborhood discontent from apartment construction and the loss of on-street parking, adding to the doubts that this level of density will materialize. In the Report, Metro assumed that 60.2% of future housing unit production will happen in the City of Portland, 92% of which is multi-family construction, a complete reversal of historic trends. However, in the Metroscope model, housing preferences play no role, only zoning capacity.

While the Metroscope model provides an unrealistic model of existing housing capacity, it does provide us a measure of the costs and tradeoffs. One of the refinements of the Metroscope model in recent years recognized that increasing housing density requires higher apartment rents. Under current market conditions, for example, development of garden apartments (two-story structures with surface parking) require apartment rents of at least \$1.00-\$1.20 per square foot. Mid-rise apart-

ment construction (five story buildings with structured parking) require rents in the \$1.70-\$2.10 per square foot range. And high-rise construction (greater than 5 stories, often requiring steel construction and underground parking) require rents in the \$2.70-\$2.90 per square foot range. As a general rule, these higher density developments tend to occur in the central neighborhoods of the City of Portland, where rents tend to be highest.

As a result, when the Metroscope model looks for additional housing capacity, it must hit considerably higher rents in order to fit the 20-years of population growth inside the existing UGB. In addition, Metroscope treats single-family homes and apartments as perfect substitutes for another, regardless of household preferences. As a result, when the model has to accommodate a new household that would normally prefer a single-family home, it scours the region to find one. When it cannot, it assigns that household to a newly built multi-family structure. Much of the land zoned for multi-family is currently occupied by lower density structures, so the multi-family development requires some demolition and additional housing demand, which then needs to be accommodated by yet more high cost multi-family construction.

The amount of the increase in prices required by Metroscope to fit the growth in population inside the current UGB is staggering. Table 4 from Appendix 4 of the Urban Growth Report compares the inflation-adjusted prices in the baseline year (2015) with those in 2035. When you compare the projected prices by “value class” or household type, and add a 2-3% factor for inflation, you find that Metroscope is projecting a doubling of apartment rents and home prices in the region.

For example, if we look at household type 5, we find the estimated monthly rent rises from \$570 to \$774 per month in inflation-adjusted terms. If we add an inflation factor of 2.5% per year, the rent level will more than double from \$570 to \$1,268. Averaged across the eight household types, we find average rents rising by 124%.

Table 4: Baseline - medium growth scenario

Residential Demand by Value Class										
5/19/2014										
MetroScope UGR Scenario #1462 Results										
2015										
UGB 2015										
Value Class	Total Residential Demand (units)				Residential Prices		Est. Monthly Rent			
	Owner Single Family	Owner Multi-family	Renter Single Family	Renter Multi-family	Owner Single Family	Owner Multi-family	Rental Single Family	Rental Multi-family		
1	32,134	3,981	2,304	17,174	\$ 85,062	\$ 82,228	\$ 594	\$ 341		
2	34,995	2,971	9,215	32,778	120,071	116,423	790	384		
3	41,831	3,116	6,715	28,651	146,220	146,930	969	449		
4	41,709	1,910	8,045	26,407	174,310	166,718	1,136	502		
5	45,403	2,308	5,827	21,694	211,744	203,193	1,314	570		
6	46,250	1,771	9,891	26,187	240,862	228,855	1,505	647		
7	43,644	1,112	10,938	24,263	308,826	278,718	1,814	763		
8	45,834	1,104	14,451	18,389	485,427	434,509	3,168	1,167		
	331,800	18,273	67,386	195,543						
	54%	3%	11%	32%						
2035										
UGB 2035										
Value Class	Total Residential Demand (units)				Residential Prices		Est. Monthly Rent			
	Owner Single Family	Owner Multi-family	Renter Single Family	Renter Multi-family	Owner Single Family	Owner Multi-family	Rental Single Family	Rental Multi-family		
1	36,699	14,726	2,454	27,487	\$ 126,987	\$ 105,755	\$ 764	\$ 467		
2	44,988	15,488	8,464	40,720	182,219	162,159	956	522		
3	46,189	11,101	5,430	36,715	225,363	210,320	1,113	591		
4	55,806	10,406	7,340	37,894	268,789	245,241	1,338	678		
5	53,118	8,079	7,735	34,186	321,264	297,240	1,587	774		
6	59,070	6,749	9,220	32,249	368,411	344,918	1,892	895		
7	53,702	3,203	10,059	29,589	454,937	429,537	2,309	1,065		
8	59,853	3,940	16,393	31,048	734,872	699,781	4,091	1,636		
	409,425	73,692	67,095	269,888						
	50%	9%	8%	33%						

Note: "value class" refers to the aggregation of household characteristics attributed by household size, income, and age of householder (i.e., HIA) into eight household types as shown in Table 4.

Table 2: Home prices and rents

Household Group	Apartment Rent				
	2015	2035 (\$2015)	2035	Real increase	Nominal increase
1	\$341	\$467	\$765	37%	124%
2	\$384	\$522	\$855	36%	123%
3	\$449	\$591	\$968	32%	116%
4	\$502	\$678	\$1,111	35%	121%
5	\$570	\$774	\$1,268	36%	123%
6	\$647	\$895	\$1,467	38%	127%
7	\$763	\$1,065	\$1,745	40%	129%
8	\$1,167	\$1,636	\$2,681	40%	130%
				37%	124%

Household Group	Single Family House Price				
	2015	2035 (\$2015)	2035	Real increase	Nominal increase
1	\$85,062	\$126,987	\$208,083	49%	145%
2	\$120,071	\$182,219	\$298,587	52%	149%
3	\$146,220	\$225,363	\$369,284	54%	153%
4	\$174,310	\$268,789	\$440,442	54%	153%
5	\$211,744	\$321,264	\$526,428	52%	149%
6	\$240,862	\$368,411	\$603,684	53%	151%
7	\$308,826	\$454,937	\$745,467	47%	141%
8	\$485,427	\$734,872	\$1,204,173	51%	148%
				52%	148%

Source: Metro, author's calculations

On the homeownership side, the price increase required in the Metro Urban Growth Report is even more dramatic, with housing prices growing by a factor of 148% over the 20-year planning horizon. The PSU Center for Real Estate finds the median house price in the region at \$290,000 in the third quarter of 2014. An increase of 148% over 20 years would mean a median house price of \$719,000 in 2035.

What would be the impact of this level of housing price and rent appreciation? To assess this, I've created a table of median apartment rents by metropolitan area for the largest 20 metropolitan areas, including a few additional west coast competitors.

Rents vary across metropolitan areas for a variety of factors, including total population, employment opportunities, land availability, and amenities within that region.

Table 3: Median gross rent by metropolitan area

	2009		2035 (projected)
San Francisco	\$1,303	San Francisco	\$2,476
Washington	\$1,303	Washington	\$2,476
San Diego	\$1,224	San Diego	\$2,326
Los Angeles	\$1,197	Portland	\$2,281
New York	\$1,125	Los Angeles	\$2,275
Boston	\$1,123	New York	\$2,138
Miami	\$1,077	Boston	\$2,134
Seattle	\$1,015	Miami	\$2,047
Sacramento	\$998	Seattle	\$1,929
Atlanta	\$912	Sacramento	\$1,896
Philadelphia	\$912	Atlanta	\$1,733
Phoenix	\$912	Philadelphia	\$1,733
Chicago	\$900	Phoenix	\$1,733
Denver	\$876	Chicago	\$1,710
Portland	\$876	Denver	\$1,665
Houston	\$848	Houston	\$1,611
Dallas	\$846	Dallas	\$1,608
Minneapolis	\$840	Minneapolis	\$1,596
Salt Lake City	\$835	Salt Lake City	\$1,587
Detroit	\$783	Detroit	\$1,488
St. Louis	\$732	St. Louis	\$1,391
Cleveland	\$695	Cleveland	\$1,321

2009 American Community Survey, US Census Bureau, author's calculations

In 2009, Portland fits in the middle of the pack among competing Western metro areas like Denver and Phoenix, and national competitors like Dallas, Minneapolis, and Chicago. Firms considering relocation from the Bay Area or Seattle can suggest to their employees that they will pay lower housing costs. To simulate the situation in 2035, we increase the rents in all metropolitan areas by 2.5% per year, roughly equal to the rate of inflation in the last two decades. If rents were to rise by 37% in inflation-adjusted terms, the median Portland area rent would rise to \$2,281, roughly equal to levels in Los Angeles, San Diego, or San Francisco, eroding an important comparative advantage for the region. Yet nothing in Metro's planning effort accounts for the impact of these cost increases on the region's economic competitive-

ness. That is, MetroScope records the price levels required for development to match the density levels anticipated in the plan, but does not consider the competitive implications of such a price shift.

METRO'S URBAN GROWTH REPORT AND INCOME INEQUALITY

Metro's Report attempts to reconcile these cost increases with housing choices and income inequality. In terms of the housing choice between single-family and multi-family housing, Metro anticipates that 63% of the increase in housing demand in 2015-35 will come in the form of multi-family housing and 37% from single family housing. That split is a complete reversal of the traditional 40%-60% split that the region has experienced. And to reconcile the shift from single family to multi-family with underlying preferences for ownership housing, Metro forecasts a tripling of condominium ownership from 3% to 9% of the housing stock. Both of these shifts in housing type suggest a decline in average housing unit size since multi-family housing tends to be considerably smaller than single family housing, making the region's housing stock less family-friendly. In other words, Metro is forecasting a large increase in housing prices and an unprecedented decrease in housing unit size and quality.

In terms of income inequality, the large projected increases in housing costs work greatly to the disadvantage of low-income households. Housing expenditures as a percentage of income tend to decline with income. A household in the lowest 10% of incomes spends an average of 50% of their income in housing, whereas a household in the highest 10% of income spends about 10% of their income in housing. As a result, any policy that increases housing prices will be regressive and exacerbate income inequality in the region. While some local homeowners may enjoy the increase in the value of their property, higher income households own more property and will receive proportionately greater wealth gains. Moreover, existing homeowners cannot enjoy the benefits of that increase until they leave the region, and young homeowners will face a high cost for entering the housing market.

The authors of Metro's Urban Growth Report discuss the question of housing burdens and inequality in Appendix 12. However much of the analysis on Appendix 12 is inconsistent with other parts of the Urban Growth Report. Whereas in Appendix 4, the table presented above clearly shows that inflation adjusted rents rise by 37% and home prices by 52%, Tables 1 and 2 of Appendix 12 suggest that overall housing costs will fall from 2010 to 2035 by 8.5% (\$21,200 to \$19,400 per year) and apartment rents will rise by only 5.4% (\$9,200 to \$9,700 per year).

Table 1: Housing and transportation costs for all households in UGB (2010\$)

Year	Median income	Average housing expenditure	Average transportation expenditure
2010	\$70,800	\$21,200	\$6,400
2035 low growth scenario	\$69,500	\$18,900	\$5,200
2035 medium growth scenario	\$69,400	\$19,400	\$5,200
2035 high growth scenario	\$69,200	\$20,100	\$5,200

Table 2: Housing and transportation costs for renter households in UGB (2010\$)

Year	Median income	Average housing expenditure	Average transportation expenditure
2010	\$39,300	\$9,200	\$4,700
2035 low growth scenario	\$40,400	\$9,500	\$3,600
2035 medium growth scenario	\$40,300	\$9,700	\$3,600
2035 high growth scenario	\$40,100	\$10,000	\$3,600

In attempting to reconcile these numbers, Metro officials point to the unprecedented decline in prices following the housing bust of 2007-2011 and they cite, “The large shift from more expensive single family housing units to cheaper multi-family units.” The first argument doesn’t make sense since housing prices are actually higher today than in 2010. In fact, the latest numbers from the Case-Shiller housing price index show that the Portland single-family housing market has returned to the go-go days of the last decade. We need the regional government to add to land supply to meet that demand, rather than come up with numbers to make us feel good about the escalating costs. On the second point, Metro officials return to the refrain that citizens should adjust to the rise in prices by consuming smaller, lower-quality units.

Table 4: Portland metropolitan area home prices, Case-Shiller price index, August

2001	108.8	5.4%
2002	112.9	3.8%
2003	121.7	7.7%
2004	130.9	7.6%
2005	155.0	18.5%
2006	181.0	16.8%
2007	186.0	2.8%
2008	171.9	-7.6%
2009	150.5	-12.5%
2010	147.0	-2.3%
2011	135.9	-7.6%
2012	140.8	3.6%
2013	159.1	13.0%
2014	170.7	7.2%

Source: Standard and Poor's

In fact, the authors of Appendix 12 appear to dismiss the possibility that high housing costs could ever become a burden for young homeowners.

“Defining cost-burden for homeowners is somewhat more difficult than rents since many homeowners regard their homes as not just a residence but as an investment. Homeowners often spend a substantial burden of their income on their home, but do not necessarily regard these expenditures as a burden. This is particularly the case for affluent homeowners. For these reasons, this analysis assumes that to be cost-burden, a household must rent, not own.”

Unfortunately, this analysis ignores that not every household starts the 2015-35 planning process as a homeowner. High housing costs force households to remain renters living in small apartments or force them to choose small condominiums rather than the single-family homes they would prefer.

METRO’S URBAN GROWTH REPORT AND UNFUNDED LOCAL GOVERNMENT MANDATES

There are two features of Metro’s Urban Growth Report that assume large local government subsidies for transportation and housing development. The transportation subsidies appear within Appendix 12 of the Urban Growth Report, which was ostensibly written to show the burden of the Urban Growth Report on income inequality.

In this Appendix, Metro has chosen to analyze renter household cost burdens that combine housing and transportation costs as a single amount. Traditionally, housing expenditures above 30% of income are seen as a cost burden. In Metro’s analysis, the combination of housing and transportation expenditure can rise to 45% of income before they become a burden. Using the above table, we find that Metro expects the average household inflation-adjusted transportation costs would fall by 18.8% (\$6,400 to \$5,200) and the average renter household transportation budget would fall by 23.4% (\$4,700 to \$3,600). What accounts for this dramatic reduction in travel costs? According to the Report, “...Census data point to an increase in the non-auto mode share, which reduces transportation costs, particularly for households with lower incomes residing in apartments. This influences the forecast.”

The assumption that we will make large swings in transportation mode share has no basis in fact. Over the last two decades, the mode choice of commuters in the Portland metropolitan area has been remarkably stable, despite significant increases in investment in public transportation. Roughly 80% of Portland metro area workers commute by automobile, mostly on their own, but some in carpools. Transit use has remained steady at about 6% of the workforce. While transit use is cheaper than automobile use, most commuters prefer automobiles over mass transit because transit takes longer or cannot serve the journey they need to make. While they might save money by using transit, they decide to drive to save time and improve their wellbeing.

Table 5: Transportation mode, journey to work, Portland metropolitan area

	1990	2009
Automobile, drive along	72.6%	71.6%
Automobile, carpool	12.5%	9.9%
Public transit	6.0%	6.1%
Walk	na	3.2%
Other	8.9%	3.1%
Work at Home	na	6.1%

Source: US Census

Nevertheless, Metro has stated that transportation costs will fall by 18.8% primarily due to the switch from automobile use to non-auto mode shares. What are we to make of this assumption? First, the shift to non-auto modes will greatly increase commuting times, which is a burden to residents. The typical transit commute in the United States takes 47.8 minutes while the typical auto commute takes between 23.9 and 25.2 minutes depending upon whether the person drives alone or carpools. Second, the shift to non-automobile shares will create a large burden to Tri-Met and

local taxpayers. Transit operations are subsidized by local taxes, and the construction of new transit lines requires substantial local and federal subsidies. Metro's Urban Growth Report doesn't quantify the degree of shift from automobile to non-auto share, but it can be estimated using this formula:

$$TAC = AC \times AS + NAC \times (1-AS)$$

Where TAC equals Total Average Cost, AC equals Auto Cost, AS equals Auto Share, and NAC equals Non-Auto Cost. As an example, we can assign zero cost to the non-auto share (i.e., free transit) and use the 2009 percentages of 81.5% auto and 18.5% non-auto, and solve for an auto share that reduces total travel cost by 18.8%:

$$TAC = AC \times 0.815 + 0 \times 0.185$$

$$AC = TAC/0.815 = 1.227 TAC$$

$$(0.812) TAC = 1.227 TAC \times AS + 0 \times (1-AS)$$

$$AS=0.662$$

Hence, the level of automobile driving would need to fall from the current level of 81.5% to 66.2% of commuters. By comparison, the percentage of commuters who drive in the metropolitan areas of Philadelphia (83.6%), Washington, DC (83.2%), Boston (82.7%), San Francisco (81.0%), and Chicago (81.6%) are much higher. Only the New York metropolitan area has a lower rate of automobile usage at 65.7%. Of course, our region has nothing like the transportation or land use characteristics of these older metropolitan areas that support the higher level of transit use.

To achieve even a modest shift in commuting mode would require enormous subsidies to develop the subway and bus transit lines in those older cities. We know from past experience that the region has spent over \$500 million in local tax dollars and over \$1 billion in federal tax dollars building new mass transit lines, with very little impact on mode share. And operating the new transit lines would require significant tax increases (or significant fare increases). At present, Tri-Met's transit riders pay 25% of operating costs, with the payroll tax paying the remaining 75%. Therefore under current policies, doubling or tripling our transit ridership would require doubling or tripling the region's payroll tax.

The second major unfunded mandate in Metro's Urban Growth Report comes from assumed subsidies to develop high-density housing projects. In Appendix 11 of the Urban Growth Report, Metro measures the level of subsidies needed to create housing projects in various urban renewal areas and neighborhoods in Multnomah County, Clackamas County, and Washington County. The developer incentives vary from \$10,000 per unit to \$50,000 per unit, depending upon the location. In part they recognize some of the cost barriers to high-density development outlined earlier in this article.

The amount of housing subsidy expected as part of Metro's program is staggering, almost \$3 billion of developer incentives. While the Report says that these subsidies are, "based upon existing programs", none of these programs are currently producing housing on this scale. Moreover, nothing in the Urban Growth Report suggests where these subsidy dollars will come from. 92.4% of the subsidy dollars are identified within urban renewal areas within the City of Portland. In theory, urban renewal dollars are generated by taxes on increases in assessed value within urban renewal areas that public improvements have incentivized. In practice, most property within the Portland metropolitan area is assessed at substantially below its real market value. Because properties are assessed below market prices, assessed values will increase by 3% per year (the maximum allowed by state statute) regardless of any urban renewal investment. And since those increases would likely occur independently of investments in urban renewal spending, a large fraction of those subsidy dollars will come at the expense of other county and city government functions.

Table 5: Areas with modeled assumptions for residential incentive programs

City of Portland	Type	Incentive per DU	SF DU	MF DU	Total DU
Central Eastside	Central City	\$50,000	0	1,196	1,196
Downtown Waterfront	Central City	\$50,000	0	3,376	3,376
North Macadam	Central City	\$50,000	0	10,574	10,574
Oregon Convention Center	Central City	\$50,000	0	7,105	7,105
River District	Central City	\$50,000	0	5,336	5,336
South Park Blocks	Central City	\$50,000	0	787	787
Gateway Regional Center	Regional Center	\$25,000	0	4,233	4,233
Lents Town Center	Town Center	\$10,000	682	17,209	17,891
Education URA (PSU)	Non-Center URA	\$10,000	0	831	831
Interstate Corridor	Non-Center URA	\$50,000	194	19,036	19,230
NPI - 42nd Avenue	NPI	\$10,000	14	813	827
NPI - 82nd Avenue and Division	NPI	\$10,000	38	2,690	2,728
NPI - Cully Blvd	NPI	\$10,000	4	1,960	1,964
NPI - Division Midway	NPI	\$10,000	0	507	507
NPI - Parkrose	NPI	\$10,000	2	339	341
NPI - Rosewood	NPI	\$10,000	61	248	309
TOD - E 122nd Ave MAX Station	Portland TOD	\$10,000	6	84	90
TOD - E 148th Ave MAX Station	Portland TOD	\$10,000	128	1,001	1,129
TOD - E 162nd Ave MAX Station	Portland TOD	\$10,000	4	54	58
TOD - NE 60th Ave MAX Station	Portland TOD	\$10,000	1	308	309
TOD - NE 82nd Ave MAX Station	Portland TOD	\$10,000	2	1,851	1,853
TOD - SE Division St	Portland TOD	\$10,000	1	978	979
Rest of UGB	Type	Incentive per DU	SF DU	MF DU	Total DU
Clackamas	Regional Center	\$25,000	0	248	248
Gresham	Regional Center	\$25,000	14	365	379
Hillsboro	Regional Center	\$25,000	238	408	646
Oregon City	Regional Center	\$25,000	0	886	886
Tanasbourne/AmberGlen	Regional Center	\$25,000	8	1,553	1,561
Gladstone	Town Center	\$10,000	10	0	10
Lake Oswego	Town Center	\$10,000	3	33	36
Rockwood	Town Center	\$10,000	0	1,135	1,135
Tigard	Town Center	\$10,000	67	337	404

Table 6: Subsidized housing costs by district

	Subsidy per unit	Units	Total Subsidy
Central Eastside	\$50,000	1,196	\$59,800,000
Downtown Waterfront	\$50,000	3,376	\$168,800,000
North Macadam	\$50,000	10,574	\$528,700,000
Oregon Convention Center	\$50,000	7,105	\$355,250,000
River District	\$50,000	5,336	\$266,800,000
South Park Blocks	\$50,000	787	\$39,350,000
Gateway Regional Center	\$25,000	4,233	\$105,825,000
Lents Town Center	\$10,000	17,891	\$178,910,000
Education URA	\$10,000	831	\$8,310,000
Interstate Corridor	\$50,000	19,230	\$961,500,000
Neighborhood Prosperity Initiative	\$10,000	6,676	\$66,760,000
Transit-Oriented Development	\$10,000	4,418	\$44,180,000
Clackamas	\$25,000	248	\$6,200,000
Gresham	\$25,000	379	\$9,475,000
Hillsboro	\$25,000	646	\$16,150,000
Oregon City	\$25,000	886	\$22,150,000
Tanasbourne/Amber Glen	\$25,000	1,561	\$39,025,000
Gladstone	\$10,000	10	\$100,000
Lake Oswego	\$10,000	36	\$360,000
Rockwood	\$10,000	1,135	\$11,350,000
Tigard	\$10,000	404	\$4,040,000
			\$2,893,035,000

METRO’S URBAN GROWTH REPORT AND THE IMPACT ON THE ENVIRONMENT

Oregon’s system of land use planning and its urban growth boundaries were established on a model of environmental protection. Resource lands for agriculture and forestry were seen as vulnerable to urban development. Every urbanized area within the state was required to establish an urban growth boundary, and property subdivision and housing production in rural areas was greatly constrained. As the urban economy within the state has expanded, the system of UGBs has created substantial differentials in land prices inside the UGB and outside the UGB, perhaps on a factor of 10. In more recent years, the justification for the land use planning system has morphed to include the idea of reduced public infrastructure costs, the value of open space, and the benefits to global warming from more compact development.

In 2009, the state legislature commissioned Metro to conduct a “Climate Smart Communities Scenario Project” to explore ways to reduce carbon emissions in the region. Unfortunately, rather than taking a direct approach to the problem of carbon emission, such as a carbon tax, Metro has proposed indirect approach, which coincides with many of the policy assumptions in the 2014 Draft Urban Growth Report, including encouraging higher density compact development, promoting mass transit, and encouraging mixed-use development. A Metro Council decision on the Climate Smart Communities Scenario Project will occur two weeks after the Metro Council decision on the Urban Growth Report, so that impact of the Urban Growth Report on climate change should be assessed carefully.

What should be clear from the above discussion about the changes in transportation behavior and mode share in the Urban Growth Report is that Metro’s statements about outcomes in 2035 are largely aspirational, rather than a forecast or a financial plan. The Climate Smart Communities Scenario Project discusses in more detail some plans to achieve the transportation behavior changes, but most of the tools discussed are largely more intensive versions of existing policy: increasing funding of mass transit, support for more dense urban development, better bike paths and sidewalks, development of safer streets and highways, etc. Nothing in this plan or in Metro’s Urban Growth Report point to the Portland region attaining the non-automobile commuting share of the New York metropolitan region. This suggests that there is no justification for the transportation cost benefits promised in the Draft Urban Growth Report.

What is certain about Metro’s Urban Growth Report is that real estate development will become more difficult and housing costs in the region will rise. And we can be certain that this will lead economic growth to move outside the region.

In a recent study of carbon emissions across US metropolitan areas, Harvard economist Edward Glaeser and UCLA economist Matthew Kahn found that carbon emissions tend to be lower in cities rather than suburbs, lower in new houses compared to older homes, and in lower western states such as California and Oregon, compared to Southern states such as Texas and Georgia (where cooling costs are high) or Northern states such as Illinois or Pennsylvania (where heating costs are high). After factoring in the source of fuel in each region and an estimated \$43 of damage for each ton carbon emitted, they came up with the following estimate of the carbon emission cost per household. The table has been edited to emphasize larger metro areas and Western metro areas.

Table 7: Annual carbon emissions cost, per household, by metropolitan area

Metropolitan area	Average New House	Average House	Average/ New Difference	City/ Suburban Difference
Los Angeles	\$840	\$1,188	\$348	-\$45
San Diego	\$844	\$1,148	\$304	na
San Francisco	\$858	\$1,152	\$294	\$173
Sacramento	\$913	\$1,237	\$324	\$85
Phoenix	\$983	\$1,307	\$324	\$84
Denver	\$1,037	\$1,336	\$299	na
Portland	\$1,044	\$1,347	\$303	\$128
New York	\$1,062	\$1,379	\$317	\$289
Salt Lake City	\$1,100	\$1,406	\$306	na
Boston	\$1,123	\$1,253	\$130	\$256
Seattle	\$1,177	\$1,477	\$300	\$105
Miami	\$1,203	\$1,768	\$565	na
Chicago	\$1,243	\$1,781	\$538	na
Minneapolis	\$1,264	\$1,866	\$602	\$171
St. Louis	\$1,282	\$1,737	\$455	\$92
Cleveland	\$1,309	\$1,633	\$324	\$111
Detroit	\$1,313	\$1,862	\$549	-\$77
Washington	\$1,319	\$1,832	\$513	\$195
Atlanta	\$1,338	\$1,866	\$528	\$258
Philadelphia	\$1,357	\$1,698	\$341	\$222
Dallas	\$1,375	\$1,926	\$551	\$133
Houston	\$1,394	\$1,932	\$538	\$164

Source: Glaeser and Kahn (2008)

As the table shows, households in Portland emit relatively little carbon compared to most metropolitan areas, largely due to our relatively mild climate and the high percentage of hydropower used to generate electricity. Cities in California and the western United States also tend to have milder climates and use more hydro and less coal than other states. Cities in the South and the Midwest tend to have much higher carbon emissions. Also, new homes tend to have fewer emissions, as they tend to be more energy efficient, offsetting the additional driving typically associated living in a new home, which is shown in column 3. Glaeser and Kahn have also estimated the differences in carbon emission between a typical household in the central city vs. its suburb for most of the metro areas. As a general pattern, city resi-

dents emit less carbon due to their smaller houses and greater use of mass transit. However, that differential is generally smaller than the difference between new and existing homes and between homes in different regions.

Given these patterns, we ought be encouraging new housing development, particularly in Portland and other cities in the western United States as part of a strategy to reduce carbon emissions. Unfortunately, our policies against new development are raising housing prices and steering population growth in the Southeastern and Southwestern United States, where carbon emissions are much higher.

METRO'S URBAN GROWTH REPORT AND ECONOMIC DEVELOPMENT

This review has focused on the impact of Metro's policies on housing costs. We have found that the Urban Growth Report favors higher density housing development that can only be supported by significantly higher rents and housing prices. While local residents will suffer those burdens in the short run, long run impacts of housing appreciation not warranted by amenity increases will result in less investment and employment in the region. In an amenity-rich region, firms may reduce wages knowing that prospective employees will receive a "second paycheck" in the form of milder climate, better schools, and greater entertainment options. The idea of an amenity advantage has been a big driver in the economic development of the Sunbelt states, as employers are able to experience a lower labor cost structure.

Unfortunately, the housing appreciation anticipated in the Urban Growth Report exceeds any range of possible increase in amenities, causing potential employees to seek wage premiums to move to such a location. This pattern of barriers to development in high amenity areas has steered development to regions in the country more amenable to development. As Edward Glaeser writes regarding growth controls in California:

While limits on California's growth may make that state seem greener, they're making the country as a whole browner and increasing carbon emissions worldwide. Houston's developers should thank California's anti-growth movement. If they hadn't stopped building in Coastal California, where incomes are high and the climate is sublime, then there wouldn't have been nearly as much demand for living in the less pleasant parts of the Sunbelt.

Thus, the challenge of global warming is to remember that citizens have choices. If we make paradise unaffordable, people will live elsewhere.

The bias in Metro's Urban Growth Report also extends to commercial and industrial development, which has not been a focus of this review. For example, in the acreage assigned for industrial development, Metro has included acres of land that have been assessed as brownfields, substantial acreage on West Hayden Island, and several golf courses near the Portland Airport. In each of these cases, there is a low

chance of development happening in the next 20 years. No funding mechanism for widespread remediation of brownfields exists that supports this assumption. Or put differently, brownfields will only redevelop when property demand is very high to support that development. On West Hayden Island, the City of Portland's Planning and Sustainability Commission adopted an annexation plan that required extension mitigation costs on development, leading the Port of Portland to abandon plans to develop that site. And no one anticipates member-owned golf courses being converted into industrial uses. The compensation cost to the membership would exhaust the value of any potential demand by industrial users. Nevertheless, the assumption that these lands are available for industrial use was kept in the Urban Growth Report, largely to prevent a need to expand the urban growth boundary.

RETHINKING LAND USE PLANNING POLITICS

This review has questioned many of the assumptions behind Metro's Urban Growth Report and suggests that it will harm the economic vitality of the region and further skew economic benefits from low-income households to high-income households. Metro has developed a plan that increases housing costs, increases commute times, and reduces employment opportunities. The Urban Growth Report isn't internally consistent, and its policy effect will prevent land from being utilized for vital human needs.

What is the alternative? How should we plan for future growth in the region? Those are broad questions, but here are some ideas.

One possibility is that MetroScope needs to become an even more sophisticated regional planning model, so that changes in housing prices affect economic investment, employment, and population growth. Such a modeling effort would require a lot of time and investment, but it would recognize that we live in a region where urban planning can have significant feedback impacts on local economic activity. That might raise an issue of whether we want our region to grow or whether we want our children to move elsewhere, but at least the debate would be clear.

A second option might be to raise the importance of housing costs and human habitat to the level being placed by farmland preservation and a tight urban growth boundary in our regional decision-making. The current formulation has a baseline assumption of a fixed urban growth boundary. The Urban Growth Report tests whether future population growth can fit into that boundary, even with highly unrealistic housing cost impacts. An alternative might be to accept a certain level of housing price appreciation, perhaps a 5% growth after inflation over 20 years, and then find a combination of higher density development and urban growth boundary expansion that fits into that housing cost assumption. Currently, we pay only lip service to housing affordability.

Third, we might increase the priority placed to local housing prices and land prices, which act as a signal to where people want to live. Land prices on the western and southern edge of the metro area tend to be much higher inside the urban

growth boundary than outside. That differential represents an increase in welfare that would come from expanding the boundary in those locations. As we expand on the west side, we could target expansions to avoid particularly high valued forests and farmland, such as the wineries of Yamhill County. Unfortunately, the current system focuses expansion on places on the east side of the region, which is the least attractive to housing consumers. In fact, much of the land in the Damascus area could be taken out of the UGB and replaced by land elsewhere at enormous benefit to the public. Using prices as a guide, UGB expansions could be determined in a decentralized way by underlying consumer choice, rather than in a regional planning model or by log-rolling politics.

Finally, our planning system needs to address the problems of road construction and infrastructure development seriously, rather than assume a wholesale shift to non-automobile commuting. While visitors marvel at the light rail construction in our region, that experiment has failed to change the percentage of transit commuters and our highways are as congested as ever. We obviously need smarter highways to smooth out demand between rush hour and off-peak driving and give more incentives to choose alternatives. Tools like congestion pricing can be used to selectively add capacity, as our leaders were prepared to do with the Columbia River Crossing, and create incentives for alternative modes. And we will benefit from a new generation of cleaner cars, so that the impact of accommodating the public's preference for driving themselves doesn't have to come at a cost to air quality. However, we shouldn't base our land use planning decisions on commuting assumptions that won't happen.

The Metro Council may adopt the draft Urban Growth Report in December, despite the criticisms presented here. However, it's also possible that the state legislature, less beholden to the special interests at Metro headquarters, will repeat the grand bargain of last March and perform another end-run around the Metro decision-making process. It's important for legislators in other parts of the state to recognize that economic development is not a zero-sum game. Economic growth in Portland brings trade and investment across the entire state and region, represented by suppliers of building materials, Willamette Valley farms, Oregon coast fisheries, or tourist destinations in the Cascades or Eastern Oregon. Whether Oregon can escape the California disease of anti-growth policies should be of concern to everyone. ■