

Appendix 8

“Needed housing” data tables

Report Purpose

The tables included in this report contain the information required to address "housing needs" requirements in Oregon Revised Statutes 197.296 and 197.303. This report provides a look at the region's historic and forecasted performance in housing mix, density, cost and affordability. Some elements of this appendix also appear in different formats throughout the urban growth report.

Use of scenarios

MetroScope scenarios are used to forecast future performance. Forecasted results are reported for two different MetroScope scenarios:

- Low Growth Scenario—assumes that population growth occurs at the low end of the forecasted range.
- High Growth Scenario—assumes that population growth occurs at the high end of the forecasted range.

All other assumptions are the same for the high and low growth scenarios. Those assumptions are intended to represent a continuation of current policies and investment trends. Different policy and investment choices or assumptions would produce different results.

Full documentation of the growth forecast is available in Appendix 12 and full documentation of the MetroScope scenario assumptions is available in Appendix 2.

Relationship of scenarios to the urban growth report

The scenario assumptions and results described in this analysis inform the urban growth report, but do not constitute the urban growth report. The urban growth report is an analysis of residential demand and capacity, while scenarios provide information about the possible performance of the region's residential capacity in light of forecasted demand. Performance is measured as housing mix, density, cost and affordability. If residential development of a particular type and tenure (rent/own) is reported as a scenario forecast, capacity for that household type is implicitly available. In this sense, scenarios do not identify a capacity gap. That determination is left to the urban growth report.

Three additional reasons that the results of these scenarios will differ somewhat from numbers reported in the urban growth report are:

Capture rate: The urban growth report assumes that 61.8 percent of future residential growth in the 7-county area will occur in the Metro UGB. This 61.8 percent capture rate is based on historic data. This UGR capture rate helps to establish the amount of residential demand (through the year 2030) that must be accommodated in the Metro UGB. Scenarios, on the other hand, produce a capture rate as an output of the scenario (i.e. it is not an assumption fed into the model). Consequently, the household numbers reported as scenario results, while similar, are not the same as the household demand numbers used in the urban growth report.

Refill rate: As with the capture rate, the urban growth report assumes a future refill rate. Scenarios, on the other hand, produce a refill rate as an output. Consequently scenario results will again differ somewhat from numbers used in the urban growth report's capacity analysis.

Timeframe: Scenario results are reported for the 2005 to 2030 timeframe. The UGR analysis covers the 2010 to 2030 timeframe. As a consequence, the results are somewhat different.

Formatting of report and relation to legal requirements

The tables included in this report contain the information required to address "housing needs" requirements in ORS 197.296 and 197.303. For ease of reference, the figures are numbered to correspond to the sections of those statutes:

- Figures 3.1 through 3.3 address the housing capacity and need requirements of ORS 197.296(3)(a) and (b)
- Figures 4.1 AB, C and D address the "buildable lands" inventory requirements of ORS 197.296(4)(a)(A), (B), (C) and (D)
- Figures 5.1 through 5.6 address the housing capacity and need requirements of ORS 197.296(5)(a)(A) and (B)
- Figures 5E.1 and 5E.2 address the housing trend requirements of ORS 197.296(5)(a) (E)
- Figure 6.1 reconciles the calculations of housing land need in this analysis and the UGR
- Figures 303.1 through 303.4 address the "needed housing" requirements of ORS 197.303.

ORS 197.296 suggests providing historic data for the previous five years, but allows for the presentation of a shorter or longer time series if doing so will provide more accurate and reliable data. Consequently the timeframe for the historic data reported in this analysis is sometimes longer than five years.

Analysis of data

Figure 3.1: forecasted housing demand by type and tenure

Figure 3.1 displays housing demand and supply by tenure (rent, own) and type (single-family, multi-family) for the years 2005 and 2030. Assuming a continuation of current policies and investment trends, the region is likely to see an increase in the total numbers of all housing types by the year 2030. However, the likely increase in multi-family residences (both owned and rented) is particularly noteworthy. The potential increase in multi-family units (123,000 to 176,000 more by 2030) is greater than the increase in single-family units (100,000 to 124,000 more by 2030).

Figure 3.1: Forecasted number and share of dwelling units by type and tenure (years 2005 and 2030)

Owner	Dwelling units (2005)	Percent of units (2005)	Dwelling units (2030 low growth)	Percent of units (2030 low growth)	Dwelling units (2030 high growth)	Percent of units (2030 high growth)	Difference 2005 to 2030 (low growth)	Differences 2005 to 2030 (high growth)
Single Family Detached	313,752	87.5%	401,395	76.9%	426,604	73.0%	87,644	112,853
Single Family Attached	15,000	4.2%	19,254	3.7%	20,463	3.5%	4,254	5,463
Townhouse Condominium	15,865	4.4%	84,424	16.2%	119,383	20.4%	68,558	103,518
Manufactured	14,000	3.9%	16,947	3.2%	17,995	3.1%	2,947	3,995
Subtotal	358,617	100.0%	522,020	100.0%	584,445	100.0%	163,403	225,828
Renter	Dwelling units (2005)	Percent of units (2005)	Dwelling units (2030 low growth)	Percent of units (2030 low growth)	Dwelling units (2030 high growth)	Percent of units (2030 high growth)	Difference 2005 to 2030 (low growth)	Differences 2005 to 2030 (high growth)
Single Family Detached	41,468	19.4%	46,111	16.8%	43,411	15.0%	4,643	1,943
Single Family Attached	7,200	3.4%	7,970	2.9%	7,474	2.6%	770	274
Apartment	163,375	76.5%	218,089	79.6%	236,285	81.9%	54,714	72,910
Manufactured	1,650	0.8%	1,652	0.6%	1,383	0.5%	2	(267)
Subtotal	213,693	100.0%	273,822	100.0%	288,554	100.0%	60,129	74,861
Combined owner, renter	Dwelling units (2005)	Percent of units (2005)	Dwelling units (2030 low growth)	Percent of units (2030 low growth)	Dwelling units (2030 high growth)	Percent of units (2030 high growth)	Difference 2005 to 2030 (low growth)	Differences 2005 to 2030 (high growth)
Single Family Detached	355,220	62.1%	447,506	56.2%	470,016	53.8%	92,287	114,796
Single Family Attached	22,200	3.9%	27,224	3.4%	27,937	3.2%	5,024	5,737
Townhouse Condominium Apartment	179,240	31.3%	302,513	38.0%	355,668	40.7%	123,273	176,428
Manufactured	15,650	2.7%	18,598	2.3%	19,378	2.2%	2,948	3,728
Total	572,310	100.0%	795,842	100.0%	872,999	100.0%	223,532	300,689

Figure 3.2: Proforma residential densities

Figure 3.2a (low proforma densities) and Figure 3.2b (high proforma densities) present the variables used to establish the residential density ranges used in this analysis. These proforma values are a blend of MetroScope scenario results and historic data and are used as a potential range of built residential densities. The high densities do not assume any zoning changes. The final column of Figure 3.2 displays forecasted densities per gross buildable acre for four housing types.

The number of gross buildable acres of residential consumption in a given year is divided by the number of total new units for that year, including housing built on vacant land and housing built through infill and redevelopment (refill), yielding the weighted average of 9.99 (low) to 19.93 (high) units per gross acre.

Figure 3.2a (Low proforma residential densities through the year 2030)

	Lot size range (square feet)	Median lot size (sq. ft.)	Median number of units per net buildable acre	Average gross to net acres factor	Average refill rate	Average vacancy rate	Average underbuild factor	Density per gross buildable acre
Single Family Detached	1,750 - 43,560	5,500	7.9	0.65	20%	4%	5%	6.4
Single Family Attached	1,500 - 3,500	3,500	12.4	0.6	22%	4%	5%	9.5
Townhouse Condo Apartment	250 - 2,500	1,750	24.9	0.5	30%	4%	5%	17.6
Manufactured	2,500 - 43,500	5,500	7.9	0.65	20%	4%	5%	6.4
Proforma average weighted density in units per net acre			13.41	Proforma average weighted density in units per gross acre			9.99	

Figure 3.2b (High proforma residential densities through the year 2030)

	Lot size range (square feet)	Median lot size (sq. ft.) 2030	Median number of units per net buildable acre	Average gross to net acres factor	Average refill rate	Average vacancy rate	Average underbuild factor	Density per gross buildable acre
Single Family Detached	1,750 - 43,560	4,500	9.7	0.65	30%	4%	5%	8.9
Single Family Attached	1,500 - 3,500	2,500	17.4	0.55	40%	4%	5%	15.8
Townhouse Condo Apartment	250 - 2,500	900	48.4	0.5	45%	4%	5%	43.5
Manufactured	2,500 - 43,500	5,000	8.7	0.65	20%	4%	5%	7.0
Proforma average weighted density in units per net acre			22.08	Proforma average weighted density in units per gross acre				19.93

Figure 3.3: Proforma gross buildable acres

Based on the low and high proforma densities found in figure 3.2, figure 3.3a (low growth) and figure 3.3b (high growth) show the gross buildable acres demanded by new household growth under two different growth scenarios¹: 223,532 (low growth) to 300,689 (high growth) new occupied units (232,473 to 312,716 units when adjusted for a four percent vacancy rate). In these scenarios, if households choose to locate in the Metro UGB, there is implicitly adequate capacity. It remains for policy discussion whether this potential future distribution of households would produce the region’s desired outcomes.

After adjusting for the refill rate, vacancy rate and under-build factors, these proforma density and growth assumptions produce a total vacant land demand that amounts to 13,967 to 29,292 gross vacant acres. Under these assumptions, single family detached housing would consume about 72 to 74 percent of the acres.

Figure 3.3a (Low growth): regional housing land demand in gross buildable acres (2005 to 2030)

	New dwelling units (low growth)	Low proforma density		High proforma density	
		Adjusted dwelling unit capacity per gross acre	Adjusted gross acres demanded	Adjusted dwelling unit capacity per gross acre	Adjusted gross acres demanded
Single Family Detached	92,287	6.4	14,516	8.9	10,392
Single Family Attached	5,024	9.5	531	15.8	318
Townhouse Condominium Apartment	123,273	17.6	7,018	43.5	2,836
Manufactured	2,948	6.4	464	7.0	422
Totals	223,532		22,528		13,967

¹ This residential demand range is comprised of the number of households “captured” in the Metro UGB in two MetroScope scenarios (low and high growth) between the years 2005 and 2030. For the reasons mentioned in the introductory paragraphs to this analysis, this household demand range is somewhat different from the household demand range used in the UGR.

Figure 3.3b (High growth): regional housing land demand in gross buildable acres (2005 to 2030)

	New dwelling units (high growth)	Low proforma density		High proforma density	
		Adjusted dwelling unit capacity per gross acre	Adjusted gross acres demanded	Adjusted dwelling unit capacity per gross acre	Adjusted gross acres demanded
Single Family Detached	114,796	6.4	18,056	8.9	12,926
Single Family Attached	5,737	9.5	607	15.8	364
Townhouse Condominium Apartment	176,428	17.6	10,044	43.5	4,058
Manufactured	3,728	6.4	586	7.0	533
Totals	300,689		29,292		17,882

Figures 4.1AB and C: vacant and partially vacant acres

Figures 4.1AB shows the region's residential capacity by generalized zoning. Figure 4.1AB depicts the gross buildable acres of land by "vacant" and "partially vacant" categories.

Table 4.1AB: Gross vacant and partially vacant acres inside the UGB by zoning class (year 2007)

Zone Class	Fully Vacant Tax lot Acres	Partially Vacant Tax Lot Acres	Total Vacant Acres
CC	21	24	45
CG	349	195	543
CN	28	34	62
CO	89	51	140
FF	2,788	3,570	6,358
IH	768	1,066	1,834
IL	2,415	2,386	4,801
MFR1	41	95	135
MFR2	168	174	341
MFR3	116	144	260
MFR4	95	96	191
MFR5	9	32	41
MFR6	1	0	1
MFR7	73	51	124
MU	2	0	2
MUE	1,114	1,371	2,485
MUR1	79	35	114
MUR10	105	66	170
MUR2	120	160	279
MUR3	24	21	45
MUR4	141	150	291
MUR5	177	71	249
MUR6	21	9	31
MUR7	200	87	286
MUR8	128	146	275
MUR9	110	97	207
PF	54	246	299
POS	274	349	622
RRFU	4,130	7,253	11,383
SFR1	47	61	108
SFR10	40	46	86
SFR11	41	16	57
SFR12	77	74	152
SFR14	44	8	52
SFR15	26	44	71
SFR2	778	884	1,662

SFR3	36	41	77
SFR4	1,463	1,663	3,126
SFR5	1,032	1,045	2,077
SFR6	1,043	1,470	2,513
SFR7	407	331	739
SFR8	21	34	55
SFR9	164	378	541
Total	18,859	24,073	42,932

Note: Acreages reported in this table differ somewhat from the acres reported in the UGR because of differences in how public rights of way, public lands, etc. are accounted for.

Figure 4.1.D: estimate of redevelopment and infill (refill) capacity

Figure 4.1D presents an estimate of the number of developed acres within the UGB with potential for additional residential development during the planning period through infill or redevelopment (refill). This estimate is made based on zoning, land values, improvement values, and tax lot sizes. The maximum refill capacities found in Figure 4.1.D are assumptions that are fed into the two MetroScope scenarios. These estimates do not assume any changes to zoning.

Figure 4.1.D: Estimate of possible refill capacity in UGB based on existing zoning (year 2005)

Zone class	Gross buildable acres	Refill capacity estimate (dwelling units)
MFR1	76	1,147
MFR2	238	4,761
MFR3	160	3,988
MFR4	212	6,353
MFR5	33	1,160
MFR6	3	114
MFR7	134	8,036
MUR1	12	119
MUR10	241	30,114
MUR2	162	2,428
MUR3	24	471
MUR4	235	5,879
MUR5	325	9,762
MUR6	47	1,657
MUR7	288	12,960
MUR8	214	13,878
MUR9	135	16,841
SFR10	38	383
SFR11	12	135
SFR12	140	1,682
SFR14	486	6,808
SFR15	160	2,403
SFR5	1,024	5,122
SFR6	994	5,966
SFR7	450	3,153
SFR8	31	251
SFR9	339	3,048
<i>Grand Total</i>	<i>6,215</i>	<i>148,621</i>

Though this refill capacity is available in the scenarios, it is not necessarily all consumed (developed) in the scenarios. The amount that gets consumed in the model is reported as a forecasted refill rate. The amount of refill that is actually realized in the future will depend on the decisions of individual owners, prices, regional growth and government policies and investments. As detailed in the UGR, it is anticipated that, during the 2010 to 2030 time period, 33 percent of all residential development will occur through refill.

Based on existing policies, Metro anticipates another 42,900 to 52,900 dwelling units to be produced within existing urban renewal districts during the same time frame. Urban renewal district land is not typically zoned residential and is not displayed in Figure 4.1D. However, experience and modeling indicate substantial residential capacity is created in mixed-use urban renewal districts.

Figures 5.1 through 5.6: historic land consumption in UGB

Figures 5.1 through 5.6 document historically observed development data for comparison with the projected data contained in Figures 3.1 through 3.3. The figures provide at least five years of data on the number, density and average mix of housing types and the trends in density and average mix of housing types that have occurred in the UGB.

Table 5.1: Metro UGB historical land use consumption in acres: 2002-2007

Year	2002	2003	2004	2005	2006	2007
Developed land	201,336	203,145	204,456	205,894	209,419	210,582
Vacant land	52,514	50,705	51,151	49,727	46,235	45,076
Total	253,849	253,850	255,607	255,621	255,654	255,658
Vacant land detail	2002	2003	2004	2005	2006	2007
Residential vacant	16,488	15,617	14,944	13,672	12,307	12,099
Nonresidential vacant	12,047	11,679	11,865	9,764	8,881	8,485
Open space, rural, parks	16,560	16,290	17,303	15,362	15,610	15,307
Total gross buildable acres	45,095	43,586	44,112	38,798	36,797	35,891
Constrained land	7,419	7,118	7,039	10,929	9,437	9,185
Total vacant land	52,514	50,705	51,151	49,727	46,235	45,076

Notes:

- Acreages reported in this table differ somewhat from the acres reported in the UGR because of differences in how public rights of way, public lands, etc. are accounted for.
- For years 2005 - 2007: res = MFR, MUR, SFR; non-res = COM, IND, MUE; other = PF, POS, RUR. Except: no PF in 2005
- For years 2002 - 2004: res = MFR, SFR; non-res = COM, IND, MUC; other = POS, RUR
- For years 2002 - 2005: PF are part of COM
- Constrained land for years 2005 - 2007 is based on the constrained land analysis completed for the 2009 UGR and includes Title 3 and Title 13 land
- Constrained land for years 2002 - 2004 is based on Title 3 land only

Figure 5.2 shows that average densities for new residential construction have been increasing since the mid-1990s.

Figure 5.2: Average density of new residential construction inside the Metro UGB (1995 to 2006)

Year	Estimated dwelling unit permits	Average density per net acre	Average weighted lot size (single-family)	Average weighted lot size (multi-family)
1995	11,692	5.5	No Data	No Data
1996	13,105	8.4	No Data	No Data
1997	13,680	8.6	7,648	2,383
1998	12,449	7.7	8,386	2,027
1999	10,133	7.0	8,840	914
2000	8,710	8.6	6,476	1,268
2001	8,942	6.5	8,356	2,047
2002	7,967	9.0	7,610	1,580
2003	8,557	10.9	6,003	1,416
2004	7,136	9.7	6,190	1,053
2005	8,456	9.7	6,070	1,250
2006	9,104	10.7	5,441	2,586

The average, observed density for new residential construction during the 2002 to 2006 period was approximately 10 units per net acre. A comparison of the historic data with the forecast through year 2030 (see Figure 3.2) shows that residential densities are expected to increase during the period 2010 to 2030 to between 13.5 to 22 units per net buildable acre.

Figure 5.3 provides more explanation for the 1995 – 2006 density trends shown in Figure 5.2. Figure 5.3 presents the number of single family and multi-family units constructed within the UGB during the 1995 to 2006 period. Though lot size, gross to net ratio and refill rate also affect residential density, a change in the mix of dwelling unit types profoundly affects density and associated land consumption. Generally, multi-family housing production tends to increase during periods of economic growth. For example, during the 1995 - 1998 period of quickening economic growth, the multi-family share of the housing market grew to 48.3 percent and densities rose rapidly. Conversely, starting in 1999, regional economic growth slowed, single family market share climbed to over 71 percent and residential densities declined. During the entire eleven-year period from 1995 to 2006, multi-family units comprised about 36 percent of total production. By way of comparison, it is forecasted (see figure 3.1) that multi-family will comprise 38 to 41 percent of production for the 2005 to 2030 period.

Figure 5.3: New residential units inside the UGB by type (1995 to 2006)

Year	New multi-family units	New single-family units	Total units	Multi-family share
1995	5,399	6,293	11,692	46.2%
1996	6,324	6,781	13,105	48.3%
1997	4,675	9,005	13,680	34.2%
1998	3,018	9,431	12,449	24.2%
1999	2,912	7,221	10,133	28.7%
2000	1,461	7,249	8,710	16.8%
2001	2,229	6,713	8,942	24.9%
2002	3,647	4,320	7,967	45.8%
2003	3,772	4,785	8,557	44.1%
2004	2,381	4,755	7,136	33.4%
2005	2,766	5,690	8,456	32.7%
2006	4,374	4,730	9,104	48.0%
Totals	42,958	76,973	119,931	35.8%

Figure 5.4 shows sales price, median house size, lot size and imputed density trends for new single-family homes during the 1995 to 2006 time period. During this time, the trend was rising home prices and declining lot sizes. As prices rose, lot size decreased and number of units per gross acre increased. Building permit data indicate total single family construction was relatively steady, between 6,000 and 7,000 units per year, until 2002 when permit numbers dropped into the 4,000 to 5,000 per year range. Data in Figure 5.4 include single-family attached as well as detached housing.

Figure 5.4: Newly constructed single-family residence characteristics (1995 to 2006)

Year	Median sale price	Median house size	Median lot size	Dwelling units per gross acre	New permits (in UGB)
1995	\$ 169,000	1,858	6,738	4.2	6,293
1996	\$ 179,000	1,896	6,698	4.2	6,781
1997	\$ 191,000	1,957	6,481	4.4	9,005
1998	\$ 192,000	1,882	5,996	4.7	9,431
1999	\$ 204,000	1,958	6,151	4.6	7,221
2000	\$ 191,500	1,904	5,436	5.2	7,249
2001	\$ 191,385	1,838	5,250	5.4	6,713
2002	\$ 197,822	1,793	5,000	5.7	4,320
2003	\$ 209,513	1,830	4,750	6.0	4,785
2004	\$ 237,803	1,914	4,858	5.8	4,755
2005	\$ 274,950	1,973	4,549	6.2	5,690
2006	\$ 315,000	2,025	4,300	6.6	4,730

Figure 5.5 provides data similar to Figure 5.4, but for multi-family units. Here, median rent applies to all multi-family units rather than only newly constructed units. Multi-family housing production has varied year to year, generally increasing during periods of regional economic growth. During the 1995 to 2006 time period, the median rent has increased by approximately 26 percent.

Figure 5.5: Newly constructed multi-family residence characteristics (1995 to 2006)

Year	Median Rent	Units per Gross Acre	New Permits (in UGB)
1995	\$ 572	No Data	5,399
1996	\$ 599	No Data	6,324
1997	\$ 616	14.6	4,675
1998	\$ 634	17.2	3,018
1999	\$ 658	38.1	2,912
2000	\$ 702	27.5	1,461
2001	\$ 730	17.0	2,229
2002	\$ 747	22.1	3,647
2003	\$ 771	24.6	3,772
2004	\$ 795	33.1	2,381
2005	\$ 717	27.9	2,766
2006	\$ 723	13.5	4,374

Figure 5.6 lists attached and detached single-family units by year built. Data come from the home sales survey and make the assumption that all homes built on lots of less than 3,500 square feet are attached units. Figure 5.6 indicates that the attached share of single-family home construction has been steadily increasing over the period 1995 – 2006. (The year 2001 reflects an incomplete sample in the home sales record.) In 1995 small lot or attached dwelling units comprised about six percent of the newly built single-family stock. By the year 2006, small lot/attached units comprised almost 50 percent of the new single-family stock.

Figure 5.6: Newly constructed small lot (or attached single-family) and detached larger lot single family units 1995 - 2006

Year	Attached dwelling units	Detached dwelling units	Total dwelling units	Percent attached/small lot units
1995	144	2,187	2,331	6.2%
1996	225	4,840	5,065	4.4%
1997	265	3,373	3,638	7.3%
1998	324	2,533	2,857	11.3%
1999	751	3,671	4,422	17.0%
2000	807	3,314	4,121	19.6%
2001	233	464	697	33.4%
2002	1,335	2,950	4,285	31.2%
2003	1,975	2,780	4,755	41.5%
2004	1,990	2,765	4,755	41.9%
2005	2,510	3,230	5,740	43.7%
2006	2,305	2,410	4,715	48.9%

Figure 5E.1: number of new dwelling units by housing type and capacity source

Figure 5E.1.a provides the number of dwelling units that were permitted during the 2001 to 2006 period by housing type and capacity type (vacant land or refill). Further detail on how much development occurred on the partially vacant component of vacant land is included in figure 5E.2.

The refill rate indicates the percent of all new dwelling units that were built through redevelopment and infill. Generally, higher refill rates are achieved for multi-family housing than single-family housing. The bulk of this difference shows up in redevelopment (infill numbers for single-family and multi-family are similar).

Figure 5E.1.a: Number of new dwelling units by housing type and capacity source (2001 to 2006)

New single-family residences					
Year	New units on vacant land	New units through refill	New units through infill	New units through redevelopment	Refill rate
2001 - 2002	3,640	675	365	310	15.6%
2002 - 2003	4,030	755	355	400	15.8%
2003 - 2004	3,755	1,000	445	555	21.0%
2004 - 2005	4,965	725	340	385	12.7%
2005 - 2006	3,645	1,085	400	685	22.9%
Totals	20,035	4,240	1,905	2,335	17.5%
New multi-family residences					
Year	New units on vacant land	New units through refill	New units through infill	New units through redevelopment	Refill rate
2001 - 2002	3,126	521	90	431	14.3%
2002 - 2003	2,199	1,573	515	1,058	41.7%
2003 - 2004	1,329	1,052	297	755	44.2%
2004 - 2005	1,825	941	214	727	34.0%
2005 - 2006	2,976	1,398	25	1,373	32.0%
Totals	11,455	5,485	1,141	4,344	32.4%
New residences (single-family and multi-family combined)					
Year	New units on vacant land	New units through refill	New units through infill	New units through redevelopment	Refill rate
2001 - 2002	6,766	1,196	455	741	15.0%
2002 - 2003	6,229	2,328	870	1,458	27.2%
2003 - 2004	5,084	2,052	742	1,310	28.8%
2004 - 2005	6,790	1,666	554	1,112	19.7%
2005 - 2006	6,621	2,483	425	2,058	27.3%
Totals	31,490	9,725	3,046	6,679	23.6%

Figure 5E.1.b: lot sizes of new construction by housing type and capacity source

Figure 5E.1.b provides the lot sizes of new dwelling units that were permitted during the 2001 to 2006 period by housing type and by capacity source (refill and vacant).

Figure 5E.1.b: Lot sizes (square feet) of new dwelling units by housing type and capacity source (2001 to 2006)

New single-family residences					
Year	Vacant	Refill	Infill	Redevelopment	Total average lot size
2001 - 2002	7,575	7,803	5,917	9,932	7,610
2002 - 2003	5,973	6,166	5,869	6,408	6,003
2003 - 2004	6,136	6,393	5,035	7,482	6,190
2004 - 2005	5,903	7,210	5,390	8,816	6,070
2005 - 2006	5,265	6,033	4,933	6,675	5,441
Totals	6,148	6,625	5,402	7,606	6,232
New multi-family residences					
Year	Vacant	Refill	Infill	Redevelopment	Total average lot size
2001 - 2002	564	1,675	3,259	1,344	1,580
2002 - 2003	1,457	1,359	676	1,691	1,416
2003 - 2004	1,062	1,042	1,211	976	1,053
2004 - 2005	1,236	1,278	1,456	1,225	1,250
2005 - 2006	3,224	1,228	2,828	1,199	2,586
Totals	1,864	1,281	1,212	1,299	1,675
New residences (single-family and multi-family combined)					
Year	Vacant	Refill	Infill	Redevelopment	Total average lot size
2001 - 2002	4,798	5,134	5,392	4,937	4,848
2002 - 2003	4,379	2,918	2,795	2,985	3,981
2003 - 2004	4,810	3,650	3,505	3,732	4,476
2004 - 2005	4,649	3,859	3,871	3,853	4,493
2005 - 2006	4,347	3,328	4,809	3,022	4,069
Totals	4,590	3,611	3,832	3,504	4,359

Figure 5E.2: New construction on partially vacant land

Figure 5E.2 provides the number of new dwelling units that were permitted on partially vacant land during the 2001 to 2006 time period. Average lot sizes are also indicated. The undeveloped portion of a developed taxlot may be included in the vacant land inventory as partially vacant land if it meets certain criteria:

- The entire taxlot is at least one acre
- Zoning would allow for the creation of a new lot
- There is at least ½ acre that is undeveloped²

Figure 5E.2: new dwelling units on partially vacant land by housing type (2001 to 2006)

New single-family residences					
Year	Partially vacant (dwelling units)	Vacant (dwelling units)	Percent on partially vacant	Partially vacant (lot size in sq ft)	Vacant (lot size in sq ft)
2001 - 2002	1,320	2,280	36.7%	15,077	3,264
2002 - 2003	1,230	2,295	34.9%	6,870	5,671
2003 - 2004	1,925	1,660	53.7%	5,704	6,952
2004 - 2005	2,545	1,685	60.2%	5,461	6,342
2005 - 2006	1,820	1,195	60.4%	5,389	6,123
Totals	8,840	9,115	49.2%		
New multi-family residences					
Year	Partially vacant (dwelling units)	Vacant (dwelling units)	Percent on partially vacant	Partially vacant (lot size in sq ft)	Vacant (lot size in sq ft)
2001 - 2002	675	2,338	22.4%	1,963	1,444
2002 - 2003	708	1,109	39.0%	2,265	1,246
2003 - 2004	384	414	48.1%	1,456	814
2004 - 2005	539	704	43.4%	1,337	1,337
2005 - 2006	1,132	1,167	49.2%	1,946	5,711
Totals	3,438	5,732	37.5%		
New residences (single-family and multi-family combined)					
Year	Partially vacant (dwelling units)	Vacant (dwelling units)	Percent on partially vacant	Partially vacant (lot size in sq ft)	Vacant (lot size in sq ft)
2001 - 2002	1,995	4,618	30.2%	10,640	2,343
2002 - 2003	1,938	3,404	36.3%	5,188	4,229
2003 - 2004	2,309	2,074	52.7%	4,998	5,727
2004 - 2005	3,084	2,389	56.3%	4,740	4,867
2005 - 2006	2,952	2,362	55.6%	4,069	5,919
Totals	12,278	14,847	45.3%		

² If the undeveloped portion of the taxlot is less than ½ acre, it would not be considered vacant, but the taxlot could be eligible for infill.

Figure 5E3(a): estimated capacity on lands zoned mixed use

Figure 5E3(a) provides an estimate of residential capacity on lands zoned mixed use. Capacity on vacant and refill land is included.

Figure 5E3(a): estimated residential capacity on lands zoned mixed use

Zoning class	Estimated dwelling unit capacity
MUR 1	776
MUR 2	4,488
MUR 3	927
MUR 4	9,757
MUR 5	9,437
MUR 6	3,067
MUR 7	19,452
MUR 8	19,804
MUR 9	39,737
MUR 10	24,754
Total	132,200

Figure 5E3: characteristics of new housing in mixed use zones

Figure 5E3: characteristics of new housing in mixed use zones (2002 to 2006)

Year	Multi-family dwellings		Single-family dwellings		All dwellings	
	New dwelling units	Average lot size (sq. ft.)	New dwelling units	Average lot size (sq. ft.)	New dwelling units	Average lot size (sq. ft.)
2002	753	1,345	370	2,749	1,123	1,807
2003	1,106	642	360	6,640	1,466	2,115
2004	1,003	611	430	2,206	1,433	1,090
2005	723	1,286	755	2,860	1,478	2,090
2006	2,293	3,575	635	1,813	2,928	3,193

Overview of figures 303.1 through 303.3

Figures 303.1 through 303.3 provide supporting documentation to determine the amount of land necessary to accommodate housing for a 20-year time span. "Housing need" must, under state law, be determined by type and rent/housing price ranges. Accordingly, Figure 303.1 presents total dwelling units within the UGB in 2005 and projections for 2030 by rent/price range and type. All dollar amounts are expressed in year 2005 dollars. Figure 303.2 depicts details of housing type by tenure (rent vs. own) for 2005 and 2030. Figure 303.3 contains an "affordability analysis" for the years 2005 and 2030.

Data for the year 2005 and earlier years come primarily from the Year 2000 Census STF-3 files and data published for the Portland Metropolitan Area in the American Housing Survey. These data are supplemented by detailed data available from the year 2005 calibration of MetroScope. Year 2030 estimates are obtained from MetroScope scenarios that assume a continuation of current policies and investment trends.

The data presented in the accompanying figures and tables derive primarily from MetroScope modeling. In this sense "need" takes on an explicit economic definition where supply and demand are not static points, but respond to each other through price effects. Consequently, scenarios do not identify a capacity gap. Instead, they illustrate the possible price effects of a continuation of current policies and investment trends.

On the demand side of "need", the housing quantities - along with the accompanying prices/rents, tenure and housing type choices - represent what consumers are willing to pay given their income, age and household size and preferences for neighborhood, housing quantity and travel time to work. On the supply side of "need"—housing quantities and types—price represents the adjustment of the vintage housing stock to demand prices and suppliers' responses to housing prices throughout the region given land availability, land prices, zoning, economies of scale factors and development costs.

Figure 303.1: dwelling unit demand by price and housing type

Figure 303.1a and 303.1b show a possible shift in numbers by price/rent category. Compared to the year 2005, the 2030 distribution is more concentrated toward the higher end of the price/rent distribution. The result is that there are absolute decreases in dwelling units with lower rents and prices. The shift upward in the price/rent distribution reflects a combination of increasing real incomes between 2005 and 2030 and very limited supply in high demand areas within the UGB. The increase in price/rent reflects a relative lack of single-family detached capacity in high-demand central city areas and results in a shift toward higher density housing types.

Figure 303.1a: owner-occupied dwelling units by price (2005\$) and housing type (2005 and 2030)

Owner-occupied dwelling units							
Approx. dwelling value	Total dwelling units			Detached Housing		Attached Housing	
	Year 2005	Year 2030	Difference in dwelling units 2005 to 2030)	Single-family and manufactured units	Manufactured units in parks	Single family units	Apartments, townhouses, condos
< \$150,000	30,259	44,411	14,152	A	A	A	A
\$150,000 - \$200,000	27,191	26,954	(237)	A	A	A	A
\$200,000 - \$250,000	31,796	15,301	(16,495)	MRKT	MRKT	MRKT	MRKT
\$250,000 - \$300,000	21,442	30,657	9,215	MRKT	MRKT	MRKT	MRKT
\$300,000 - \$400,000	44,089	41,522	(2,566)	MRKT	MRKT	MRKT	MRKT
\$400,000 - \$500,000	49,363	52,167	2,804	MRKT	MRKT	MRKT	MRKT
\$500,000 - \$750,000	58,184	107,613	49,429	MRKT	MRKT	MRKT	MRKT
> \$750,000	96,294	265,820	169,527	MRKT	MRKT	MRKT	MRKT
Total Units	358,617	584,445	225,828	116,848	*	*	108,980

Figure 303.1a notes:

- Depending on jurisdiction practice, attached single-family houses (row houses) are included either as detached single-family or as multi-family owner.
- "A" denotes housing that would be partially assisted, given the dwelling value.
- MRKT denotes housing that would be market rate, given the dwelling value.
- * Because manufactured housing describes a construction technique rather than a housing type, it is not identified in MetroScope or in historic data.
- It is a question for policy makers how many of these units will receive government assistance. As of November 2007, 10,608 households in the tri-county area received Section 8 vouchers.

Figure 303.1b: renter-occupied dwelling units by price (2005\$) and housing type (2005 and 2030)

Renter-occupied dwelling units							
Approx. monthly rent	Total dwelling units			Detached Housing		Attached Housing	
	Year 2005	Year 2030	Difference in dwelling	Single-family and manufactured	Manufactured units in parks	Single family units	Apartments, townhouses, condos
< \$400	43,167	19,195	(23,972)	A	A	A	A
\$400 - \$475	18,967	31,926	12,958	A	A	A	A
\$475 - \$550	25,514	25,812	298	A	A	A	A
\$550 - \$625	27,479	24,531	(2,948)	A	A	A	A
\$625 - \$750	24,854	38,485	13,630	A	A	A	A
\$750 - \$900	34,359	43,000	8,641	A	A	A	A
\$900 - \$1,100	13,315	40,881	27,566	A	A	A	A
> \$1,100	26,038	64,724	38,686	MRKT	MRKT	MRKT	MRKT
Total Units	213,693	288,554	74,861	1,676	*	*	73,185

Figure 303.1b notes:

- Depending on jurisdiction practice, attached single-family houses (row houses) are included either as detached single-family or as multi-family owner.
- "A" denotes housing that would be partially assisted, given the dwelling value.
- MRKT denotes housing that would be market rate, given the dwelling value.
- * Because manufactured housing describes a construction technique rather than a housing type, it is not identified in MetroScope or in historic data.
- It is a question for policy makers how many of these units will receive government assistance. As of November 2007, 10,608 households in the tri-county area received Section 8 vouchers.

Figure 303.2: housing and transportation affordability

Figures 303.2a (low growth) and 303.2b (high growth) summarize the regional affordability analysis. Cost-burdened households are defined as renters that spend more than 50 percent of their income on housing and transportation expenses. A more complete discussion of cost burden is included in the Performance section of the urban growth report. Data for owners and renters are presented here.

Figure 303.2a (Low growth scenario): Housing and transportation affordability

Owners			
	Households (year 2005)	Households (year 2030)	Households (change 2005 – 2030)
Spending less than 50% of income on housing and transportation	145,937	60,218	(85,718)
Spending more than 50% of income on housing and transportation	212,681	461,802	249,121
Total owners	358,617	522,020	163,403
Median percent of income spent on housing and transportation	53.5%	63%	9.5%
Renters			
	Households (year 2005)	Households (year 2030)	Households (change 2005 – 2030)
Spending less than 50% of income on housing and transportation	121,633	150,011	28,378
Spending more than 50% of income on housing and transportation	92,060	123,811	31,750
Total renters	213,693	273,822	60,129
Median percent of income spent on housing and transportation	49.5%	49%	-0.5%
Combined (owners and renters)			
	Households (year 2005)	Households (year 2030)	Households (change 2005 – 2030)
Spending less than 50% of income on housing and transportation	267,569	210,229	(57,340)
Spending more than 50% of income on housing and transportation	304,741	585,612	280,871
Total households	572,310	795,842	223,532
Median percent of income spent on housing and transportation	52.0%	58.5%	6.5%

Figure 303.2b (high growth scenario): Housing and transportation affordability

Owners			
	Households (year 2005)	Households (year 2030)	Households (change 2005 – 2030)
Spending less than 50% of income on housing and transportation	145,937	0	(145,937)
Spending more than 50% of income on housing and transportation	212,681	584,445	371,765
Total owners	358,617	584,445	225,828
Median percent of income spent on housing and transportation	53.5%	73.0%	19.5%
Renters			
	Households (year 2005)	Households (year 2030)	Households (change 2005 – 2030)
Spending less than 50% of income on housing and transportation	121,633	86,729	(34,904)
Spending more than 50% of income on housing and transportation	92,060	201,825	109,765
Total renters	213,693	288,554	74,861
Median percent of income spent on housing and transportation	49.5%	57.0%	7.5%
Combined (owners and renters)			
	Households (year 2005)	Households (year 2030)	Households (change 2005 – 2030)
Spending less than 50% of income on housing and transportation	267,569	86,729	(180,841)
Spending more than 50% of income on housing and transportation	304,741	786,271	481,529
Total households	572,310	872,999	300,689
Median percent of income spent on housing and transportation	52.0%	67.0%	15.0%