PORTLAND PLAN

Household Demand and Supply Projections

PORTLAND PLAN BACKGROUND REPORT
FALL 2009

Planning and Sustainability Commission Recommended Draft

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Household Demand and Supply Projections

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EXECUTIVE SUMMARY

This Portland Plan Background Report considers the effects that projected population growth will have on the City's housing needs over the 30-year timeframe to 2035. Specifically, the report examines whether the supply of existing and new housing will be able to meet demand, and in which areas of the City certain types of housing could be needed most.

In recent decades, the populations of both the Portland Metropolitan region and the City itself have experienced a steady net increase. This increase is likely to continue in coming decades. In 1980, Portland's population was about 368,000; by 2005, that total had grown to nearly 555,000. Some of this population growth was a result of changed boundaries as the City expanded its land area by about one-third through annexations, mostly of land on the eastside. In another 25 years, how many people will live here on Portland's nearly 93,000 acres?

METRO'S REGIONAL FORECAST

The Metro regional government is responsible for forecasting the amount of growth the metropolitan area will experience. The Metroscope computer model calculates a wealth of detailed projections of what the region's population and demographics will be in 2035.

Regarding housing needs in the City of Portland in 2035 (and stated in the broadest of terms), the model tells us that:

- *The **number of households** in the Metro region and the City of Portland **will grow***
- *There **will be adequate supply** of housing for the additional residents*
- *The **highest** level of **demand** will be for **multi-family** residences*

The Metroscope model forecasts total households in the three-county region in 2035 will be between 1.3 and 1.5 million, an increase of between 56 and 74 percent. The model projects total households in the City of Portland will be between 345,000 and 376,000, an increase of 44 to 57 percent from the 2005 baseline of 240,000 households.

Metroscope forecasts the projections for households, not individual people, because people "shop" for housing and live in households; obviously the increases in numbers of households mean an increase in population. Household sizes are typically estimated to be about two people on average, but it is important to note that what seems like a tiny change in that estimate – for instance, 2.1 vs. 2.0 – has a large effect on total population numbers when we apply the household estimate to the entire city or region.

> ***Why do we count households instead of people?*** The short answer is that people live in households, whether the household is one person or many, and whether the space is a large freestanding house or a small apartment in a high-density multi-family building. Thus while we plan for individual people, these people will "shop" as a "household" for a housing unit which may be small or large.

Metro's projections are important information to help the City of Portland and other local communities plan responsibly. After all, population growth triggers the need not only for new housing but also for a complex web of additional urban services, from water pipes and sewers to parks and open spaces, roads, railways, schools and hospitals, all of which need to be planned far in advance.

No matter what the population, providing adequate housing is never a simple task. Households vary not only in size but also by age and income. These variations are taken into account in the Metro computer model by the inclusion of eight different household "consumption profile" types.

Metroscope also projects where the housing demand will locate geographically within the urban growth boundary (UGB) of the metropolitan region. The model defines 39 subareas and projects the numbers and types of households that are likely to locate in each of them. The City of Portland contains six of these Metro subareas. It is important to note that these subareas do not correspond directly to the City of Portland's neighborhood or district planning boundaries. Rather, the model's subarea boundaries are consistent with Census tract boundaries, since the baseline data for the forecast originates in Census data.

To give a complete picture of future housing needs, the Metroscope model projects not only demand but also supply. This is done by determining the "capacity" of lands in the region to contain new housing units. For instance, are there vacant lands that could be built on? These would be included as "development capacity." Metroscope is therefore an "equilibrium" model, balancing supply with demand, offering a projected supply number as well as demand number. The geographic subareas are important in terms of where the supply may be located, and the Metroscope model allocates certain percentages of the projected overall regional household growth to the 39 different subareas in the region.

To complement Metroscope projections of housing supply, and further illuminate the forecast of where new housing might be located, the City of Portland uses its own model as well to project "development capacity." Differences between the two models relate to assumptions about underutilization of parcels, feasibility of redevelopment, and development densities by zone. The two separate models, Metro's and the City's, essentially present high and low range figures.

The forecast is a baseline. The Metroscope model assumes that existing policies and trends continue; in this way, the forecast is useful as a baseline by which to evaluate potential changes in relevant land use and transportation policies. The forecast calculates three growth level scenarios - high, medium and low.

This Background Report summarizes projections regarding the high, medium and low growth scenarios to answer ***four basic housing questions***. Three are related to demand, one to supply.

Demand

- Growth of Households: How many new households will there be in Portland?
- Distribution of Households: In which of the six subareas of Portland will the new households be?
- Types of Households: Which types of households will locate in the region overall, within the City of Portland itself, and lastly in which of the six specific subareas of the City? (The types of households are described as eight household "consumption profiles" based on income, numbers of people, and their ages, especially if they are school-age children.)

Supply

- Available land: What is the capacity of the land in the City's six subareas to accommodate the numbers of housing units projected to be needed?

Key Findings
In answering the four basic housing questions above, several key findings arise from the Metroscope model. These findings will be explained in more detail in the body of the report, but can be summarized as follows.

Demand
Growth of Households:

- The total *number of households in Portland in 2035 is projected to increase* to between 344,800 and 376,300, compared to a baseline of 240,000 households in 2005.
- The increase in households in Portland will be between 105,000 and 136,000, accounting for an *annual percent rate change of 1.2 percent - 1.6 percent.*
- This annual percent growth rate translates into a need for *3,500 - 4,500 housing units to be added each year* for the 30-year timeframe to 2035.
- *As a frame of reference*, the city built 29,300 new units between *1997 and 2007*, an average of just under *3,000 new units each year.* (Please note that this number does not include renovations, additions, or conversions of spaces such as garages into living units.
- The City of Portland's share of all (not just newly built) households regionally is projected to decline, from a baseline year (2005) share of about 29%, *to approximately 22%* in 2035. This decline occurs in all three growth level scenarios.
- The 1997-2007 growth rate of new units in Portland accounted for an *average share of 36 percent* of the total of new units built in the metro region in that period.
- Nationally, regionally, and within the city, *household size is projected to decline*.
- The housing type in highest demand will shift in favor of *multi-family units* as evidenced by construction of more multi-family units since 2005.

Supply
Available Land:

- *Currently zoned land "capacity" in Portland is sufficient to meet housing demands* - that is, enough land in Portland is currently zoned so as to be available to house the projected numbers of new households citywide and in each particular subarea. Capacity is determined not only by current zoning but also by expected redevelopment levels (vacant land plus redevelopment of existing built sites). (For further explanation of the methods for determining available land, please refer to the appendix to this report.)
- Land capacity for new Portland housing units is projected to range *up to 189,100 units* by 2035 (at the upper level of capacity, according to the calculations used by Metro), down to *at least 141,191 units* (the City of Portland model, with its somewhat more restrictive definitions of land development "capacity"). These figures are well above the projected need by 2035 for 105,000 to 136,000 new units, as noted above.

Supply and Demand
Distribution of Households:
Regarding the geographic distribution of housing on both the supply and demand sides, the model forecasts most subareas to be relatively stable, with more changes occurring in the Central, North and East Portland subareas. Key findings related to the distribution of types of households include the following.

The most *dramatic changes are forecast for the Portland Central Business subarea* (which, as noted previously, is not the same as the Central City District as designated by City planning regulations):

- The Portland Central Business subarea will *grow in households at the highest percentage rate of all the region's* 39 subareas.
- The Portland Central Business subarea is projected nearly to *triple its number of households*, from 12,267 in 2005 to a 2035 total of 46,187 (low-growth scenario/276% rate of growth) to 52,530 (high-growth scenario/327% rate of growth).

- Portland Central Business subarea will *increase its share of citywide housing units* to just under 14% (low-growth scenario) from 5%.
- A *significant shift will occur toward owning rather than renting* housing in the Central subarea - that is, households will shift in "tenure" from renting to owning, bringing ownership to 61% from a 20% share of all housing units.
- The Central subarea is also forecast to have relatively *significant shifts in the proportions of all the household groups*. Groups with children will increase (up 6% and 4%), while groups at the highest and lowest income levels will decrease (down 8% and 10%).

Distribution & Concentration of Household Types:
Differences are projected in where the eight household types will distribute themselves within the six subareas, though most of the distributions are relatively consistent with the baseline year. The most significant concentrations are forecast to be in West Portland (with about *half* of the city's *highest* income households) and North Portland (with about *one-third* of the city's *lowest* income households). Whereas most of the subareas are projected to be fairly stable in their household type make-up, East Portland is forecast to see a slight shift to lower income levels.

> The Metroscope model groups households into eight categories by considering various factors including size of household, family composition, age of residents, income, and other criteria. The groups are numbered one through eight, with the lowest, Group 1, corresponding to the lowest household income, and the highest, Group 8, to the highest income. Each numbered group is also given a descriptive name such as "Young Middle Income Families."

The model forecasts some variation particularly in where the highest and lowest income households will be located. Of all the Portland households in the highest income group (Group 8 earning $100,000/year or more), 50% are projected to be located in the West Portland subarea. That concentration of higher income households translates into 23% of the West Portland households; when these are added to the next two next highest income groups (7 & 6, earning at least $75,000 and $60,000 respectively), more than half of the households in West Portland are forecast to be in the top three earning groups, a distribution which is consistent with that of 2005.

The concentration of higher income households forecast to be in West Portland appears to be the reverse of the forecast for the East Portland and North Portland subareas. For instance, only 4% of households in the East Portland subarea are in the highest income group (vs. the 23%, as noted above, in West Portland). When that group is combined with the next two top earning groups, the three highest income groups make up 18% of the households in East Portland (vs. 52% in West Portland). These figures are drop from the baseline year 2005 (the top three earning groups making up 21% of East Portland households in the baseline year, for instance).

More of the lowest income households are projected to live in East Portland and North Portland. The lowest earning group, type 1, has annual income of less than $15,000. Groups 2 and 3 earn at least $15,000 or between $25,000 to $34,999 per year, respectively. The model forecasts relatively higher proportions of the bottom three categories of household incomes in both East Portland and North Portland (57% and 67% respectively, vs. the 29% in West Portland). Moreover, the 57% figure for East Portland households marks an increase in lower income households at the baseline, which was 52% in 2005.

The next highest income groups, Groups 7 & 6, are also projected to continue to be relatively concentrated, in the Southeast and the West subareas.

While the Central subarea, as mentioned earlier, is projected to gain in its share of the households citywide, a relative *drop in share* is forecast for both the *Northeast* and *Southeast* subareas. However, *Southeast will continue to have more total households than any other subarea* in the city, at just over 80,000, edging out

West Portland even though Southeast land area accounts for 15% of the city's acreage, versus West Portland accounting for 25%.

Types of Households
As described earlier, the eight household groups are categorized by several factors, one of which is annual household income. The lowest earning households (group 1) have annual income of less than $15,000. These figures only include income, however, and not accumulated wealth that a household may be drawing from. Income level distributions citywide are projected to be much the same as in the baseline year. A few categories see some changes in the forecast, however.

- *Top earning households* (group 8 – those making more than $100,000/year) as a percentage of citywide households will *increase* to 16% from 12%.
- *Middle income households* (groups 5, 6 and 7 – earning $45,000 and up) will each *drop*, with the three middle income groups combined dropping to 26% of citywide households from 31%.

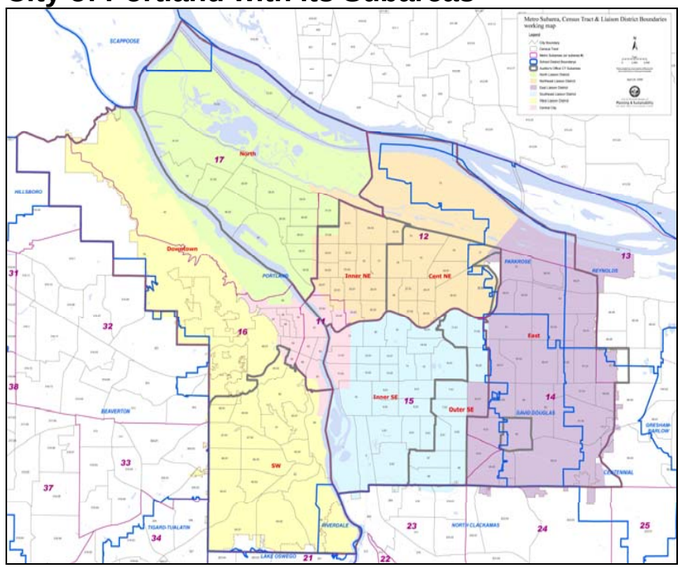
How to Use This Information
As mentioned earlier, we need a clear idea of expected growth so that we can plan well ahead for transportation, schools, and other facilities and services for the city and region. Just as we ask, "Where will the new households go?" we will need to decide where the new facilities should be located. The geographic distribution of the different types of households, with their various ages, incomes, and other characteristics, has many implications. Will the housing units be small (studios for young single people) or larger (three- and four-bedroom homes for families with young children)?

A good example of the importance of this question is the projected rise in lowest income households (Group 1 - "Low-income Singles") forecast for the North Portland subarea. Metro's profile of characteristics for this group is not just that they are low income and single, but also that they are primarily older people. To see the numbers of this type of household increase in North Portland from 29% to 34% means an increase in the numbers of housing units that will need, for instance, to be able to accommodate people of varied mobility levels. If we built only new "live-work" units accessible by stairs in North Portland, that would not be a good match to what the population expected there will need.

The sorts of facts and figures provided in the Metroscope model for 2035 will help us make intelligent choices and create appropriate policies in the Portland Plan. Housing projections are important to consider alongside job forecasts for the Portland metro region and its subareas. Economic development and jobs information is described in detail in the Economic Development Background Report. The public-driven Portland Plan process will encompass all these factors in setting forth a comprehensive guide to the city's future.

City of Portland Growth Profile: 2035

City of Portland with its Subareas



City Characteristics (2005)	
Population (estimate)	554,600
Households (estimate)	240,078
Land Area	100,182 Acres
Tenure	
Ownership	59%
Rental	41%

Household Projections (2035)

City of Portland

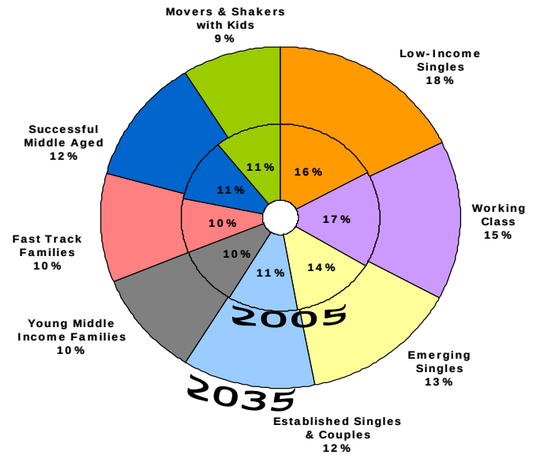
Low Growth Scenario 2035 (Existing + New)	Medium Growth Scenario 2035 (Existing + New)	High Growth Scenario 2035 (Existing + New)
344,806	360,982	376,343
104,728 ↑	120,904 ↑	136,265 ↑
Percent Growth 44%	Percent Growth 50%	Percent Growth 57%

Portland Metro -3 County Area (Clackamas, Multnomah, Washington)

Households in Base Year (2005): 836,407

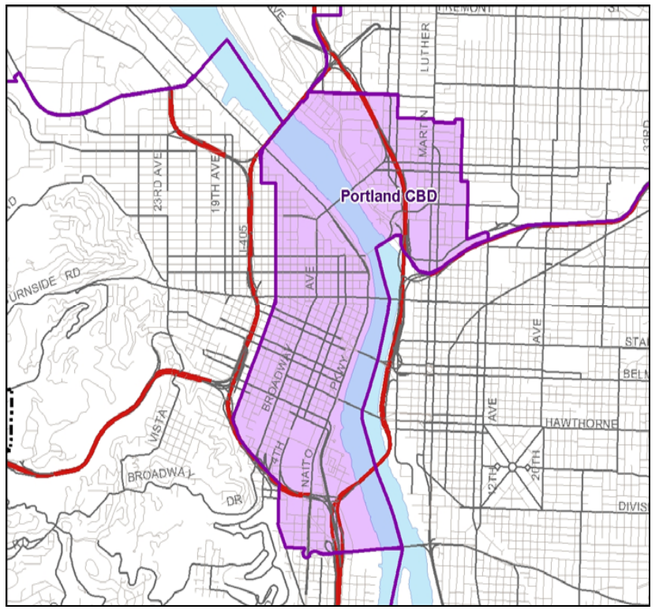
Low Growth Scenario 2035 (Existing + New)	Medium Growth Scenario 2035 (Existing + New)	High Growth Scenario 2035 (Existing + New)
1,300,845	1,377,810	1,456,035
464,438 ↑	541,403 ↑	619,628 ↑
Percent Growth 56%	Percent Growth 65%	Percent Growth 74%

Profile of Household Types in City of Portland: Current Estimate (2005) vs. Projected Future (2035 Medium Growth)



Household Characteristics	2005	2035 (Medium Growth)
Households with Children		
No	72%	75%
Yes	28%	25%
Household Income		
< $15,000	18%	18%
$15,000 - $24,999	14%	15%
$25,000 - $34,999	13%	13%
$35,000 - $44,999	12%	12%
$45,000 - $59,999	13%	12%
$60,000 - $74,999	9%	7%
$75,000 - $99,999	9%	7%
$100,000 +	12%	16%

Portland Central Business District



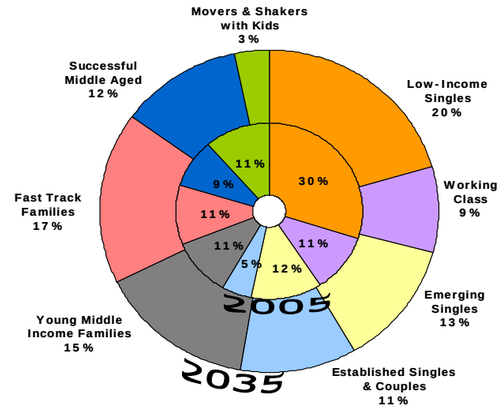
Subarea Characteristics (2005)	
Population (estimate)	16,700
Households (estimate)	12,267
Land Area	1,690 Acres 1.7% of City's Acreage
Tenure	
Ownership	20%
Rental	80%

Portland CBD Growth Profile: 2035

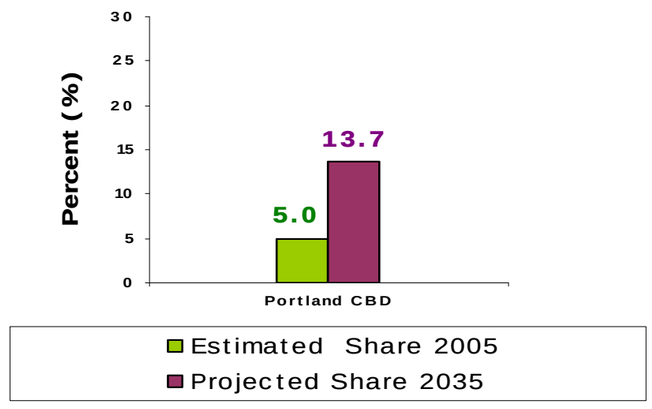
Household Projections (2035)

Low Growth Scenario 2035 (Existing + New)	Medium Growth Scenario 2035 (Existing + New)	High Growth Scenario 2035 (Existing + New)
46,187	49,429	52,530
33,920	37,162	40,263
Percent Growth 276%	Percent Growth 303%	Percent Growth 327%

Profile of Household Types in Portland CBD: Current Estimate (2005) vs. Projected Future (2035 Medium Growth)

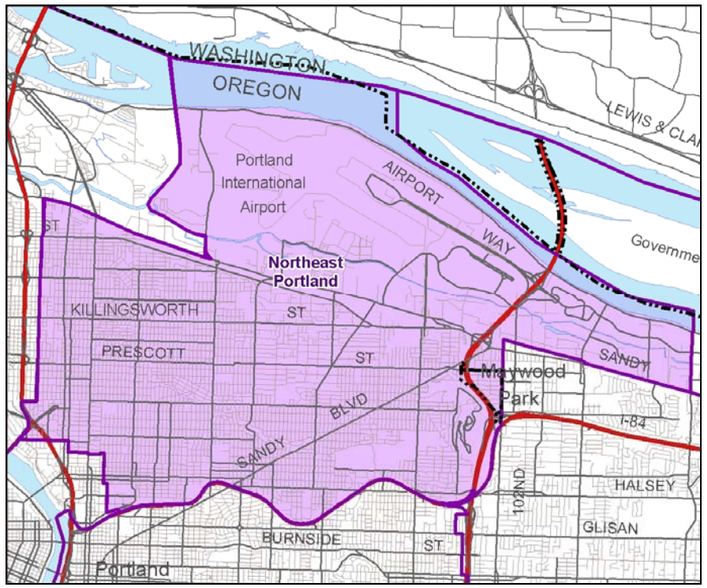


Comparison of Estimated and Projected Shares of Housing Stock for Portland CBD: 2005 & 2035



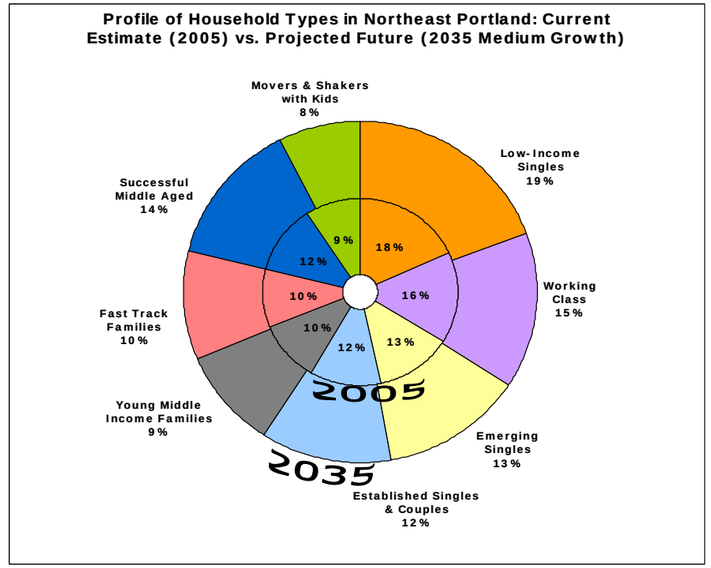
Household Characteristics	2005	2035 (Medium Growth)
Households with Children		
No	87%	88%
Yes	13%	12%
Household Income		
< $15,000	41%	21%
$15,000 - $24,999	13%	9%
$25,000 - $34,999	5%	9%
$35,000 - $44,999	5%	8%
$45,000 - $59,999	9%	12%
$60,000 - $74,999	7%	9%
$75,000 - $99,999	11%	13%
$100,000 +	9%	19%

Northeast Portland

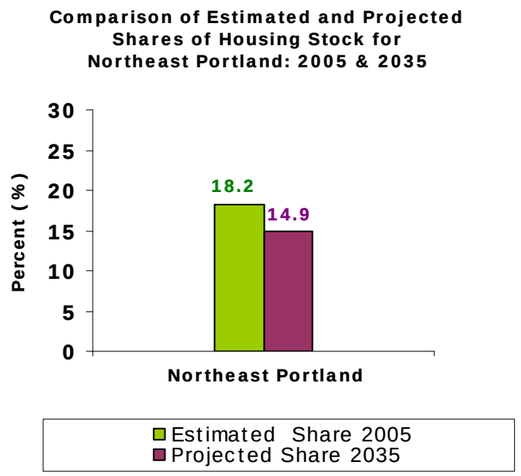


Northeast Portland Growth Profile: 2035

Household Projections (2035)		
Low Growth Scenario 2035 (Existing + New)	**Medium Growth Scenario 2035 (Existing + New)**	**High Growth Scenario 2035 (Existing + New)**
52,005	53,835	55,696
7,642 ↑	9,472 ↑	11,333 ↑
Percent Growth 17%	Percent Growth 21%	Percent Growth 26%



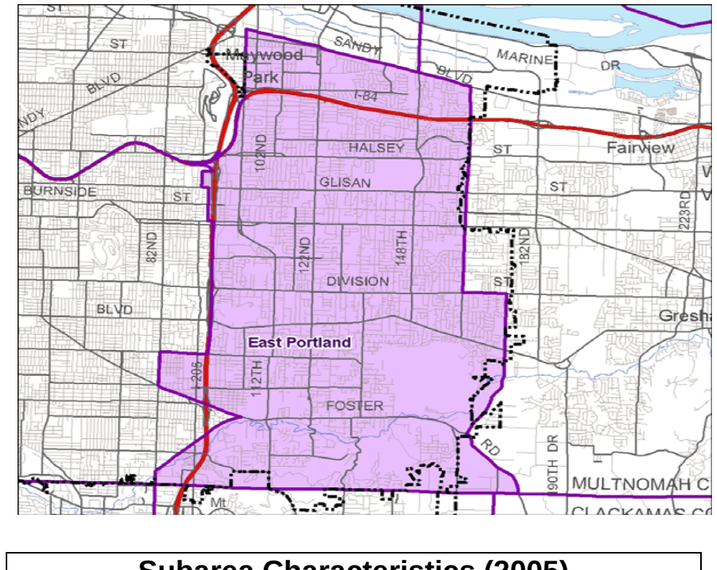
Subarea Characteristics (2005)	
Population (estimate)	108,000
Households (estimate)	44,363
Land Area	17,325 Acres 17.3% of City's Acreage
Tenure	
Ownership	67%
Rental	33%



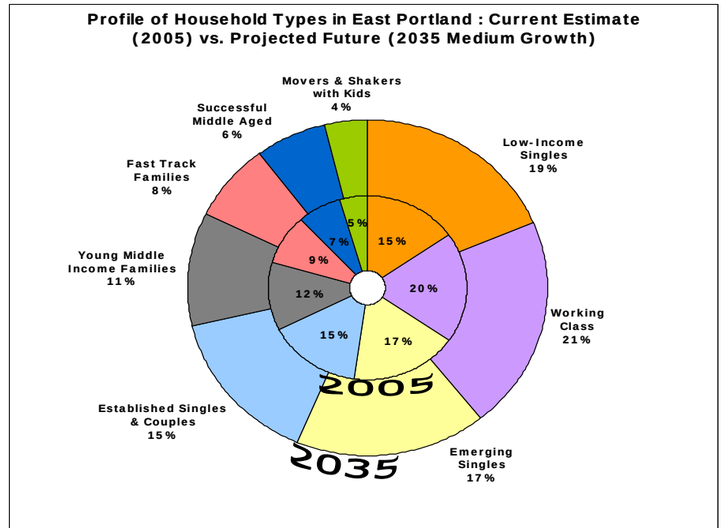
Household Characteristics		
	2005	**2035 (Medium Growth)**
Households with Children		
No	71%	72%
Yes	29%	28%
Household Income		
< $15,000	17%	17%
$15,000 - $24,999	13%	14%
$25,000 - $34,999	12%	14%
$35,000 - $44,999	13%	13%
$45,000 - $59,999	15%	13%
$60,000 - $74,999	10%	8%
$75,000 - $99,999	9%	7%
$100,000 +	11%	14%

East Portland Growth Profile: 2035

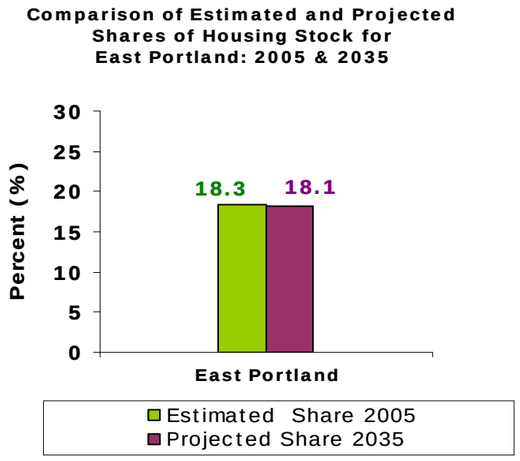
East Portland



Household Projections (2035)		
Low Growth Scenario 2035 (Existing + New)	**Medium Growth Scenario 2035 (Existing + New)**	**High Growth Scenario 2035 (Existing + New)**
61,576	65,236	68,916
17,608 ↑	21,268 ↑	24,948 ↑
Percent Growth 40%	Percent Growth 48%	Percent Growth 57%



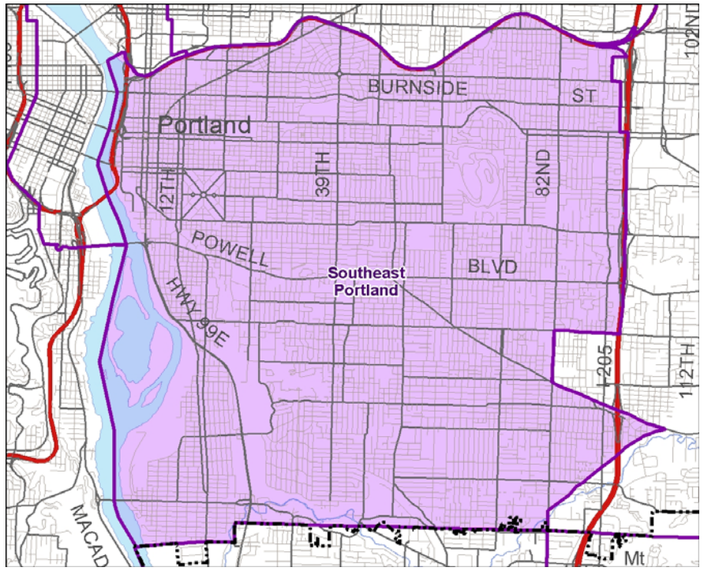
Subarea Characteristics (2005)	
Population (estimate)	117,100
Households (estimate)	43,968
Land Area	15,075 Acres 15.0% of City's Acreage
Tenure	
Ownership	64%
Rental	36%



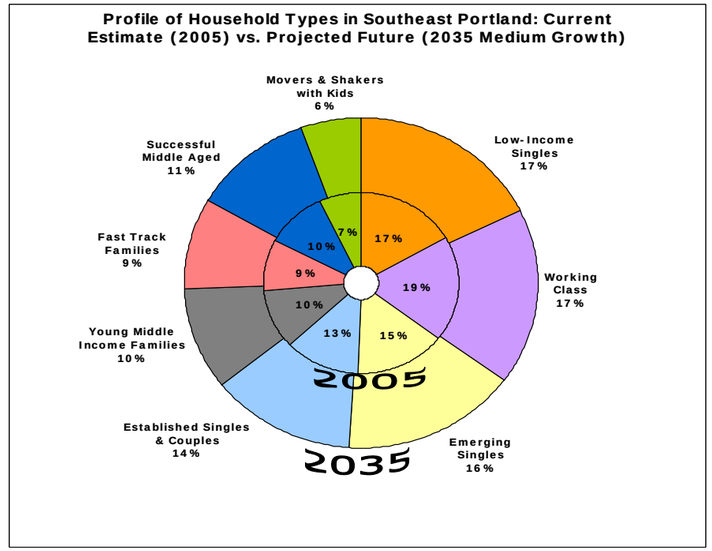
Household Characteristics		
	2005	**2035 (Medium Growth)**
Households with Children		
No	73%	75%
Yes	27%	25%
Household Income		
< $15,000	15%	18%
$15,000 - $24,999	16%	18%
$25,000 - $34,999	15%	18%
$35,000 - $44,999	17%	15%
$45,000 - $59,999	16%	15%
$60,000 - $74,999	9%	7%
$75,000 - $99,999	7%	5%
$100,000 +	5%	4%

Southeast Portland Growth Profile: 2035

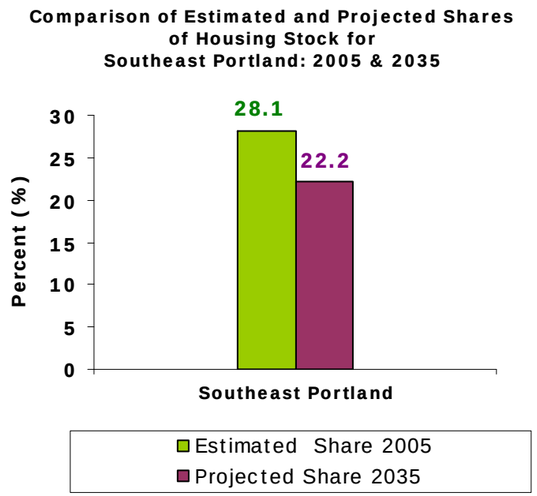
Southeast Portland



Household Projections (2035)		
Low Growth Scenario 2035 (Existing + New)	**Medium Growth Scenario 2035 (Existing + New)**	**High Growth Scenario 2035 (Existing + New)**
78,602	80,192	81,644
10,270 ↑	11,860 ↑	13,312 ↑
Percent Growth 15%	Percent Growth 17%	Percent Growth 20%



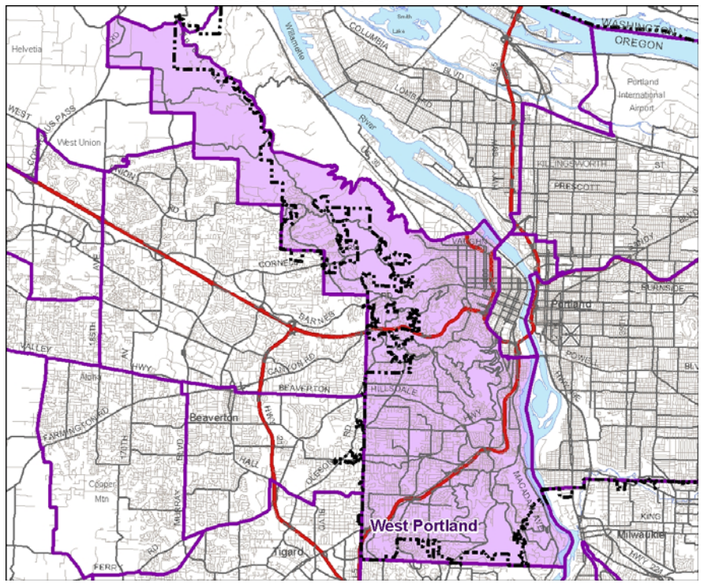
Subarea Characteristics (2005)	
Population (estimate)	158,000
Households (estimate)	68,332
Land Area	14,881 Acres 14.9% of City's Acreage
Tenure	
Ownership	57%
Rental	43%



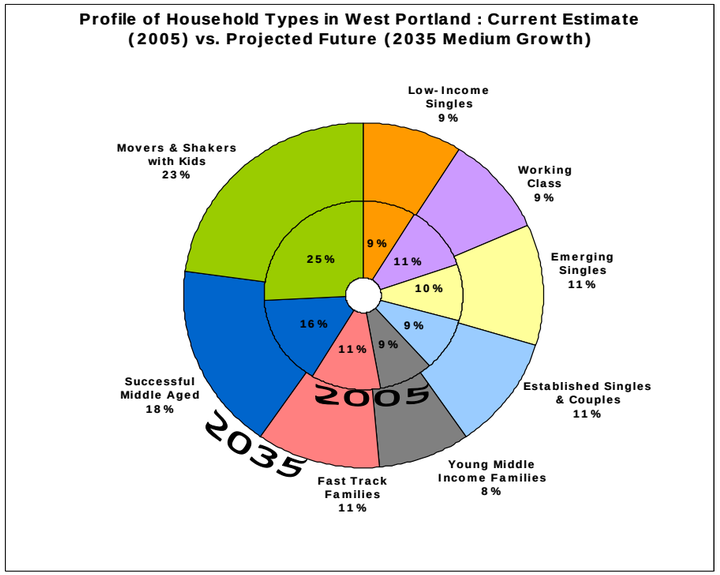
Household Characteristics		
	2005	**2035 (Medium Growth)**
Households with Children		
No	75%	75%
Yes	25%	25%
Household Income		
< $15,000	19%	18%
$15,000 - $24,999	15%	17%
$25,000 - $34,999	12%	16%
$35,000 - $44,999	15%	13%
$45,000 - $59,999	14%	13%
$60,000 - $74,999	9%	7%
$75,000 - $99,999	8%	6%
$100,000 +	8%	10%

West Portland Growth Profile: 2035

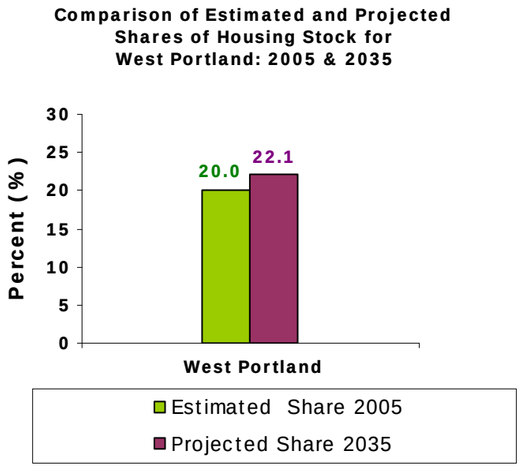
West Portland



Household Projections (2035)		
Low Growth Scenario 2035 (Existing + New)	**Medium Growth Scenario 2035 (Existing + New)**	**High Growth Scenario 2035 (Existing + New)**
75,707	79,611	82,857
26,946 ↑	30,850 ↑	34,096 ↑
Percent Growth 55%	Percent Growth 63%	Percent Growth 70%

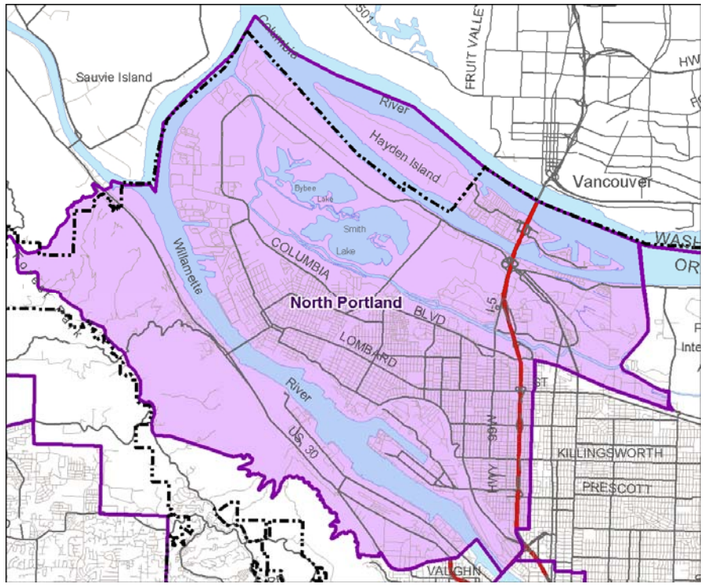


Subarea Characteristics (2005)	
Population (estimate)	101,800
Households (estimate)	48,761
Land Area	24,818 Acres 24.8% of City's Acreage
Tenure	
Ownership	58%
Rental	42%



Household Characteristics		
	2005	**2035 (Medium Growth)**
Households with Children		
No	64%	67%
Yes	36%	33%
Household Income		
< $15,000	16%	12%
$15,000 - $24,999	9%	10%
$25,000 - $34,999	7%	9%
$35,000 - $44,999	8%	8%
$45,000 - $59,999	10%	10%
$60,000 - $74,999	9%	7%
$75,000 - $99,999	13%	9%
$100,000 +	28%	35%

North Portland



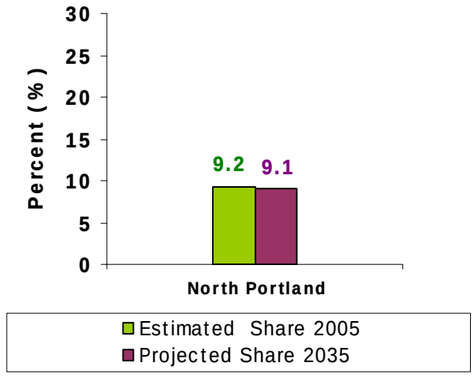
Subarea Characteristics (2005)	
Population (estimate)	53,000
Households (estimate)	22,387
Land Area	26,393 Acres 26.3% of City's Acreage
Tenure	
Ownership	66%
Rental	34%

North Portland Growth Profile: 2035

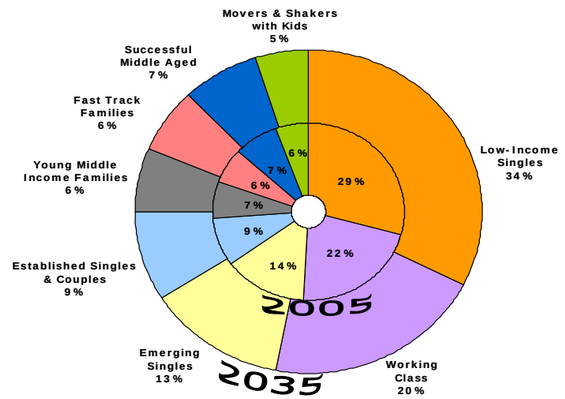
Household Projections (2035)

Low Growth Scenario 2035 (Existing + New)	Medium Growth Scenario 2035 (Existing + New)	High Growth Scenario 2035 (Existing + New)
30,728	32,679	34,700
8,341 ↑	10,292 ↑	12,313 ↑
Percent Growth 37%	Percent Growth 46%	Percent Growth 55%

Comparison of Estimated and Projected Shares of Housing Stock for North Portland: 2005 & 2035



Profile of Household Types in North Portland: Current Estimate (2005) vs. Projected Future (2035 Medium Growth)



Household Characteristics	2005	2035 (Medium Growth)
Households with Children		
No	76%	78%
Yes	24%	22%
Household Income		
< $15,000	22%	25%
$15,000 - $24,999	19%	22%
$25,000 - $34,999	13%	17%
$35,000 - $44,999	17%	13%
$45,000 - $59,999	13%	11%
$60,000 - $74,999	6%	5%
$75,000 - $99,999	5%	3%
$100,000 +	5%	4%

INTRODUCTION

This Portland Plan Background Report considers the effects that projected population growth will have on the City's housing needs over the 30-year timeframe to 2035. Specifically, the report examines whether housing supply will be able to meet demand, and in which geographic areas of the City certain types of housing could be needed most.

In recent decades, the populations of both the Portland Metropolitan region and the City itself have experienced a steady net increase. This increase is likely to continue in coming decades. In 1980, Portland's population was about 368,000; by 2005, that total had grown to nearly 555,000. Some of this population growth was a result of changed boundaries as the City expanded its land area by about one-third through annexations, mostly of land on the eastside. In another 25 years, how many people will live here on Portland's nearly 93,000 acres?

MAKING PROJECTIONS: THE METROSCOPE MODEL

Metro, Portland's regional government and planning agency, is responsible for forecasting the amount of long term growth the seven-county Metropolitan Statistical Area (MSA) will experience. Its Metroscope computer model calculates a wealth of detailed projections of what the region's population, employment and demographics will be in 2035, based on the assumption that existing regional policies and trends continue. It creates an as-is baseline scenario of what the future would bring, so that we can make well-informed and responsible decisions about any changes in our current investments and policies.

What is Metroscope? Metroscope is the computer model that the Metro regional government uses to formulate projections. It is an "urban simulation model," integrating residential housing data with transportation, land use, and commercial location data. As it integrates land use and transportation, Metroscope provides a rich and realistic model of housing development that incorporates the impact of household choice, development economics, and commuting preferences. Metroscope is comprised of 4 inter-related models. All sub-models are interrelated, and they influence and provide inputs for one another.

- **Economic Model:** Forecasts region-wide population and employment by industry. It converts the forecasted population into number of households (HH) and groups them into 400 possible combinations of HH Size, Income Category, Age-of-household-head and Children present/absent;
- **Location Model(s):** (comprised of residential and non-residential sub models) that predicts where and how much housing will exist in the future based on predictions of how much and where employment activity will occur, the price of housing, household income and other wealth factors, and the age of the householder;
- **Travel Model:** estimates trip origins and destinations, and measures perceived cost of travel between regions which affects where people work and decide to reside;
- **GIS/ land tools & database:** contains the land and development data and tracks where and how much land (parcels) will be available for development in the future, provides an inventory and accounting of developable land that is available, and its capacity for housing units and employment.

More information on the Metroscope model is available in the appendix to this report.

Under the Metroscope model, projected population growth triggers the formation of "households" which will need to live in a home or "dwelling unit." While the model assumes that each new household equals one new home or dwelling unit, it also accounts for the fact that not everyone lives alone - the number of people living a household will vary. Therefore, household types or "consumption profiles" are also factored into the model.

Metro considers age, income, and household size to predict how people will be living together in a household. For ease of analysis, they bundle more than 400 combinations into eight "household types," each given a short descriptive name. Thus, the characteristics of each group will still vary, and could include renters and owners, old and young, singles or groups. However, income is a key aspect of the groups, and thus they are *numbered in order of lowest to highest income levels*. Another key factor is age - that of the "designated head of household" - and whether there are any school-age children in the household.

A summary of the groups is as follows:

- **Group 1** ("Low-Income Singles"): These are the lowest income households, whether they are renters or owners. Of the renters in this group, all live alone, and most are elderly. Among owners in Group 1, age and number of people in the household is more evenly distributed. *Example:* A *woman in her seventies renting an apartment, living alone on a very low income. Total income less than $15,000.*

- **Group 2** ("Working Class"): These households can be any age, but their income is among the lowest. More are renters rather than owners. About two-thirds are childless. However, one-third of the renter households in this group have school-age children, while only about one in six of the owners in this group have school-age children. *Example: A family renting a home, two adults working at low-wage jobs, raising young children. Total income at least $15,000, less than $25,000.*

- **Group 3** ("Emerging Singles"): With a bit more income than Group 2 households, these people are primarily in the 25-44 age bracket. The renters are mostly single-person households. The owners are about half made up of two-person households, about one third of them being families with school-age children. *Example: Two thirty-somethings, both of whom work, and who have just bought their first home. Total income at least $25,000, less than $35,000.*

- **Group 4** ("Established Singles and Couples"): With a broad age distribution and approaching middle income, these households are usually childless, especially if they are renters. Owner households in Group 4 have more residents and almost 40 percent include school-age children. *Example: Two people renting a home, both working, and with children who are grown up and living elsewhere. Total income at least $35,000, less than $45,000.*

- **Group 5** ("Young Middle-income families"): Group 5 households are larger and wealthier. People in the renter households of this category are not only older than those in the owner households, but also have smaller household sizes. The owners are more likely than not to have children. *Example: Two parents in their late thirties, living in a home they own with children in junior high and high school. Total income at least $45,000, less than $60,000.*

- **Group 6** ("Fast Track Families"): With more income than Group 5 households, almost half of this group is between 25 and 44. Although the majority do not have school-age children, two- and three-person households are most common. The owner households are larger and more likely to have school-age children. *Example: Two adults with well-paying jobs, one working full-time, the other part-time, raising elementary-school-age children, and living in a home they own. Total income at least $60,000, less than $75,000.*

- **Group 7:** ("Successful Middle Aged")**:** Mostly without children, these households include the very high-income couples, especially for owners. Interestingly, the renter households in Group 7 are more likely to have children. *Example: Two early-fifties adults working at very well-paying jobs, owning their home. Total income at least $75,000, less than $100,000.*

- **Group 8:** ("Movers and Shakers with Kids")**:** Among owners, most of these households have children; about 60 percent of renter households have children. They are the highest earners in their prime earning years. *Example: A family with two parents in their late forties or early fifties, both working full-time in high-paying jobs, raising children who are still in school and living with them in the home they own. Total income $100,000 or more.*

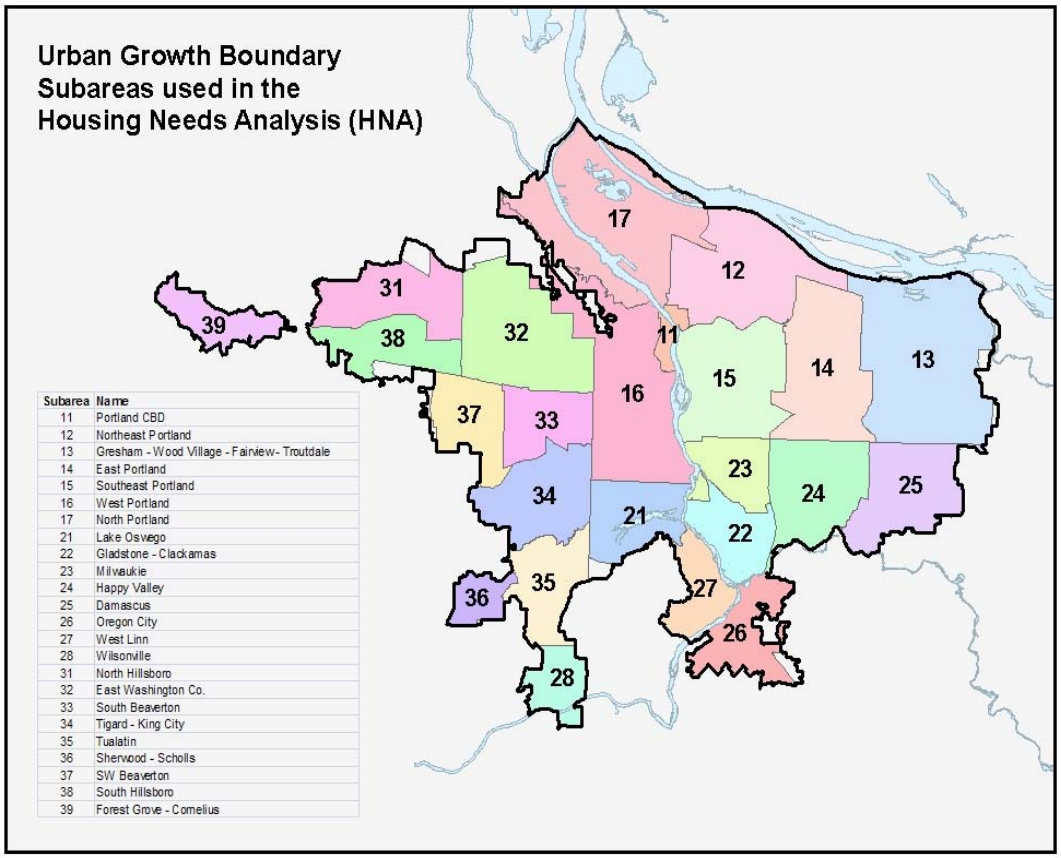
It is important to note that these eight groups actually represent a bundling together of the more than 400 different household consumption profiles and not a simple grouping of households based on *Income, Size or Age.* However, as "consumption" of housing is strongly influenced by a household's age, size, income or presence of children, there is some pattern with regard to these characteristics.

Patterns we find when comparing across groups are that:

- Household *income is generally lower for renters than for owners*.
- For both renters and owners, income increases as we move from one group to the next.
- Age varies more for renters than for owners.
- *Group 1* includes many *elderly*, while *Group 2* has a much higher concentration of *young* adults. The average age rises again for Groups 3 and 4 and then falls for Groups 5 and 6, rises slightly for 7, then falls again for group 8.
- Household *size is generally higher* for the *higher number groups* (which also have the *higher incomes*). However, Group 2 renters have a larger household size than renters in Groups 3 and 4. Group 8 renters and owners have both the highest household size and the highest percentage of households with school-aged children.

Geographic Subareas

To facilitate analysis of housing needs at smaller geographies than the region as a whole, Metro has grouped relatively permanent geographies called the Census Tracts into a number of "subareas." The following illustration is a map of the 39 subareas in Portland Metro:



Subarea	Name
11	Portland CBD
12	Northeast Portland
13	Gresham - Wood Village - Fairview - Troutdale
14	East Portland
15	Southeast Portland
16	West Portland
17	North Portland
21	Lake Oswego
22	Gladstone - Clackamas
23	Milwaukie
24	Happy Valley
25	Damascus
26	Oregon City
27	West Linn
28	Wilsonville
31	North Hillsboro
32	East Washington Co.
33	South Beaverton
34	Tigard - King City
35	Tualatin
36	Sherwood - Scholls
37	SW Beaverton
38	South Hillsboro
39	Forest Grove - Cornelius

Six Portland Subareas

As mentioned earlier, Metroscope's application of six subarea boundaries to Portland matches with neither the City of Portland's planning districts nor with its neighborhood association boundaries, and should not be mistaken with these designations. Rather, the model's subarea boundaries are combinations of Census data tracts, because much of the data in the forecast originates in Census data. Even so, the six subareas can be easily understood as five basic "quadrants" of the city surrounding a transportation/business hub at the center.

While the lack of coordination between the city's designated planning boundaries and the Metroscope subarea boundaries makes an already complicated topic even more complex, it is unavoidable. We use data collected by many different organizations, at different times and in different places. Each set of data has its own original intentions, and cannot anticipate all the ways in which people might use it later.

The six Portland subareas are shown on the map above and are listed below:

- *Portland Central Area* (CBD[1]) (Subarea 11) - while Metroscope uses the term "CBD" for "Central business district," this subarea includes only these parts of the Central City plan district: the downtown core, Pearl District and other areas within the I-405 freeway loop on the west side of the river; east of the river, the Rose Quarter transit and entertainment area north of Interstate 84.
- *Northeast Portland* (Subarea 12) - north of I-84, west of Vancouver Avenue: the majority of the NE quadrant of the city.
- *East Portland* (Subarea 14) - primarily east of I-205, south of Sandy Boulevard.
- *Southeast Portland* (Subarea 15) - west of I-205, south of I-84, and including the Central Eastside industrial sanctuary (which is a subdistrict of the Central City plan district)
- *West Portland* (Subarea 16) - west of the I-405 freeway loop, and south of Forest Park and the Route 30/industrial sanctuary area along the river.
- *North Portland* (Subarea 17) - the northern "quadrant" of the city plus the Forest Park/Route 30/industrial sanctuary area southwest of the river but not included in the West subarea.

[1] Metro designated Portland CBD is a much smaller geography than the City designated "Central City". Notably, the Metro Subarea excludes Central Eastside, Goose Hollow and a small portion of South Waterfront These areas get clustered into Metro's "West Portland" Subarea.

HOUSEHOLD PROJECTIONS AND DISTRIBUTIONS

Based on historical trends, the Portland *Metro area is projecting continued modest population growth over the coming decades*. In Metro's latest population forecast, its Metroscope computer model projects the population of the seven county Portland Metropolitan Statistical Area (MSA) out to the year 2030. The MSA population in 2030 is projected to be about **3 million** people (2.9-3.2 million, for an annual percentage growth rate of between **1.4%** and **1.7%**). In order to project housing demand, Metro converts its population numbers into a forecast of the number of households, estimating that **1.2 million** to **1.3 million** households will live in the MSA by 2030.

As the timeframe for the Portland Plan is 2035, this report uses Metroscope simulations that extend the 2030 population forecast to 2040 in five-year increments. As mentioned earlier, the Metroscope model assumes that existing policies, investment patterns and trends continue, creating an equivalent basis for comparing baseline year data with corresponding forecast data. As the region continues to grow, the City of Portland will inevitably capture a significant portion of the projected growth. The household totals projected in the model also reflect the interplay between the population and employment forecasts.

This section presents several data tables and illustrations documenting the expected growth in number of households and their projected distribution within the City's six subareas. Base year is 2005; projections are for 2035.

Key findings from the three tables on the following pages are provided below:

- Portland will likely have between **344,800 – 376,300** households by the year 2035. The base estimates (2005) put the number of existing households at **240,000**. At the low end of the forecast, this translates to a percentage growth of about **44%** in the 30 year time frame. If this growth is spread evenly on an annual basis, it means that the City will see an annual percent rate change of **1.2%,** slightly below the Portland Metro area growth rate of 1.4%. At the higher end, the annual percentage rate change will be at **1.6%.**

- The **net increase** in number of households is projected to range between **105,000 – 136,000** households. Spread out on an equal annual basis, the City will need between **3,500-4,500** housing units each year in the 30 year Portland Plan time frame to accommodate the projected demand.

- The forecasted distribution amongst the City's subareas indicates that *Southeast Portland* is projected to contain the largest share of households (23%).

- The *Portland CBD* is expected to capture the largest share of the new growth, adding households at a rate of nearly **277%** in the projected time frame. The resulting number of households is expected to range between **46,200- 52,500**. In terms of "percent growth" this subarea is projected to have the highest growth rate of the entire metro region. For all other subareas, growth is expected to remain below 50%.

- In terms of absolute number of households, *Southeast Portland, and West Portland* are all projected to house well over 60,000 households.

- *Northeast* and *Southeast Portland* are projected for rather small "percent growth"- 17% and 15% respectively.

- Projections indicate maximum growth for owner-occupied multi-family housing units.

Table 1: Forecasted Distribution of Households in Portland Citywide and by Subarea in 2005 and 2035 (Assuming Current Policies & Trends)

	Estimate	Projections (2035)					
	Estimated Dwelling Units, 2005	Low Growth Scenario, ~~2035~~ (Existing + New)		Medium Growth Scenario, ~~2035~~ (Existing + New)		High Growth Scenario, ~~2035~~ (Existing + New)	
Total		**344,806**		**360,982**		**376,343**	
Expected Growth	**240,078**	**104,728**		**120,904**		**136,265**	
Subareas		Forecasted # Households	Pct. Forecasted Total	Forecasted # Households	Pct. Forecasted Total	Forecasted # Households	Pct. Forecasted Total
Portland Central Business District	12,267	46,187	13.4%	49,429	13.7%	52,530	14.0%
Northeast Portland	44,363	52,005	15.1%	53,835	14.9%	55,696	14.8%
East Portland	43,968	61,576	17.9%	65,236	18.1%	68,916	18.3%
Southeast Portland	68,332	78,602	22.8%	80,192	22.2%	81,644	21.7%
West Portland	48,761	75,707	22.0%	79,611	22.1%	82,857	22.0%
North Portland	22,387	30,728	8.9%	32,679	9.1%	34,700	9.2%

Source: 2009 MetroScope Scenario Allocations, Metro

Note: Estimates & Projections Exclude Population in Group Quarters.

Table 2: Forecasted Growth for Metro Region, Portland Citywide & City Subareas, 2005-2035

	Estimate	Forecasted Growth			
	Estimated Households 2005	Low Growth Scenario 2035 (Existing +New)	Percent Growth	High Growth Scenario 2035 (Existing +New)	Percent Growth
Portland Metro (Clackamas, Multnomah, Washington)	**836, 400**	**1,300,800**	**56%**	**1,456,000**	**74%**
City of Portland	**240,000**	**344,800**	**43.7%**	**376,300**	**56.8%**
Subareas					
Portland Central Business District	12,300	46,200	**275.6%**	52,500	**326.8%**
Northeast Portland	44,400	52,000	**17.1%**	55,700	**25.5%**
East Portland	44,000	61,600	**40.0%**	68,900	**56.6%**
Southeast Portland	68,300	78,600	**15.1%**	81,600	**19.5%**
West Portland	48,800	75,700	**55.1%**	82,900	**69.9%**
North Portland	22,400	30,700	**37.1%**	34,700	**54.9%**

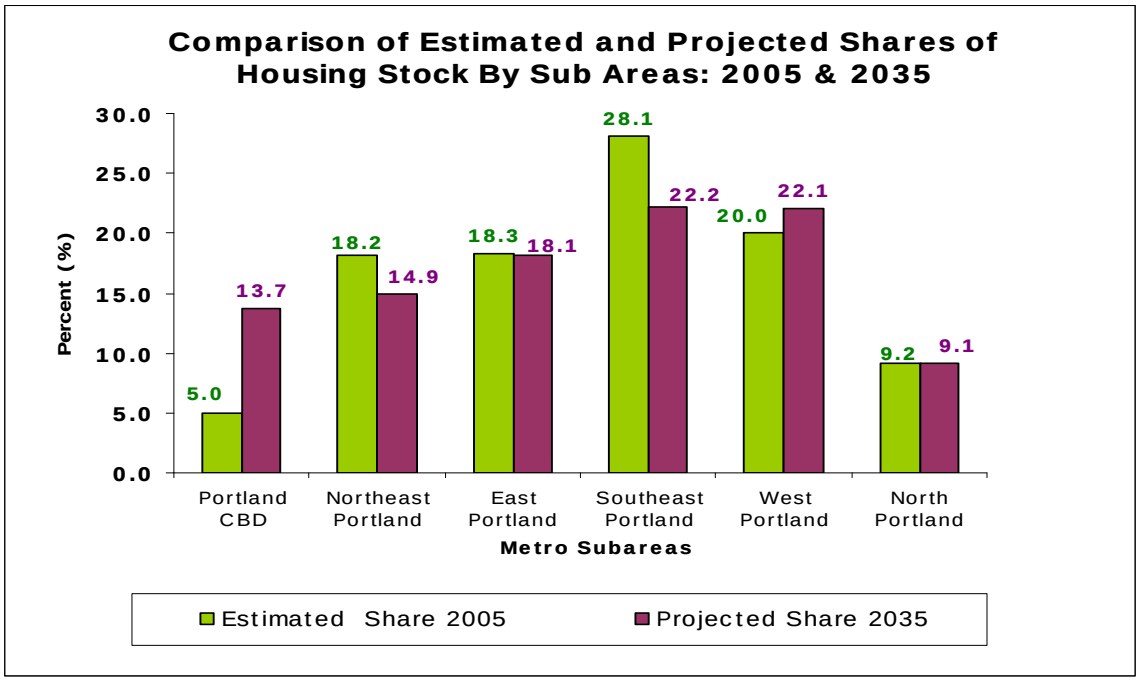
Source: 2009 MetroScope Scenario Allocations, Metro

Table 3: Forecasted Dwelling Unit Demand by 2035

	Estimated Dwelling Units, 2005	Growth Scenarios	Projected Net Demand
Low Growth Scenario			
Total	**240,078**	**344,806**	**104,728**
Subareas			
Portland Central Business District	12,267	46,187	**33,920**
Northeast Portland	44,363	52,005	**7,642**
East Portland	43,968	61,576	**17,608**
Southeast Portland	68,332	78,602	**10,270**
West Portland	48,761	75,707	**26,946**
North Portland	22,387	30,728	**8,341**
Medium Growth Scenario			
Total	**240,078**	**360,982**	**120,904**
Subareas			
Portland Central Business District	12,267	49,429	**37,162**
Northeast Portland	44,363	53,835	**9,472**
East Portland	43,968	65,236	**21,268**
Southeast Portland	68,332	80,192	**11,860**
West Portland	48,761	79,611	**30,850**
North Portland	22,387	32,679	**10,292**
High Growth Scenario			
Total	**240,078**	**376,343**	**136,265**
Subareas			
Portland Central Business District	12,267	52,530	**40,263**
Northeast Portland	44,363	55,696	**11,333**
East Portland	43,968	68,916	**24,948**
Southeast Portland	68,332	81,644	**13,312**
West Portland	48,761	82,857	**34,096**
North Portland	22,387	34,700	**12,313**

Source: 2009 MetroScope Scenario Allocations, Metro

Figure 1: Estimated (2005) and Projected (2035) Distribution of Households in City Subareas



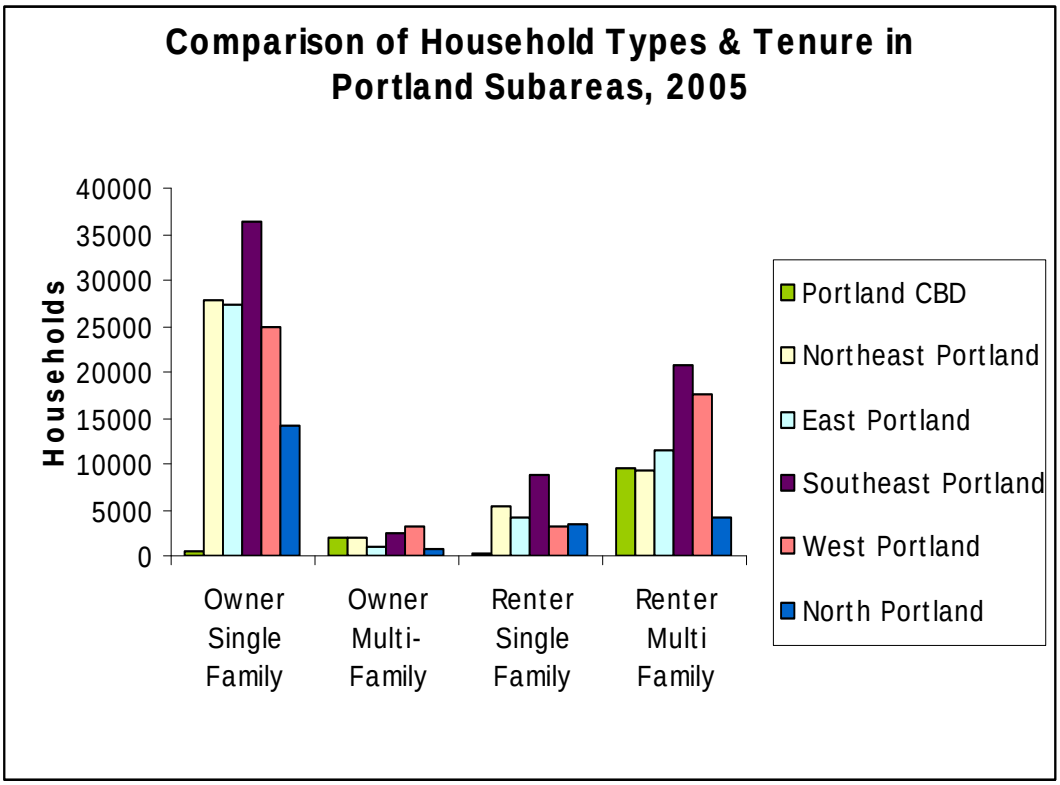
Key findings from Figure 1: Estimated (2005) and Projected (2035) Distribution of Households in City Subareas include the following:

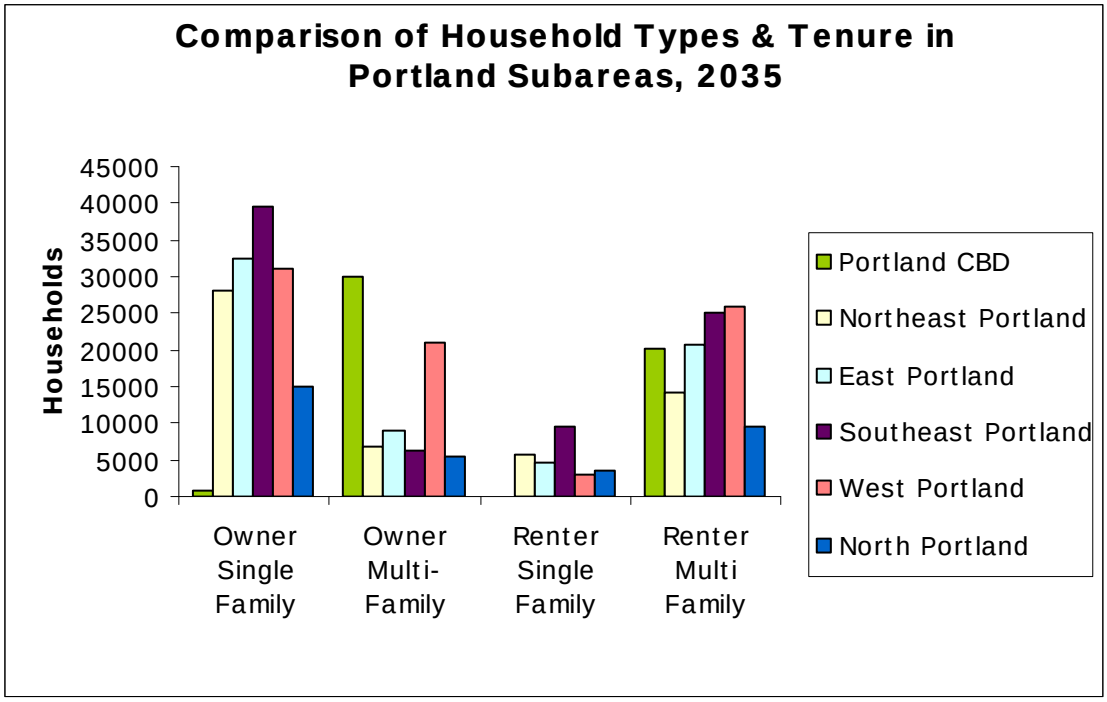
- The number of total households in the *Portland Central/CBD* is projected to nearly triple, with Portland Central subarea increasing its share of housing stock in the City to just under 14%.

- Southeast Portland's share of housing stock is projected to decline by 2035. Still this subarea will be home to the largest number of households. In other words, decline in share does not mean loss of households.

The following figures illustrate the estimated and projected mix of housing type and tenure in 2005 and in 2035:

Figures 2a and 2b: Housing Type & Tenure: 2005 & 2035





Key findings from Figures 2a and 2b: Housing Type and Tenure, 2005 and 2035 include the following:

- Projections indicate significant growth in owner-occupied multi-family housing units in all of Portland's subareas.
- Dramatic growth in owner-occupied multi-family units is projected for Portland Central/CBD. Projections indicate an addition of 28,000 units (from a base of 2000 units in 2005). This amounts to a percent growth of 1456% and notably alters the housing tenure. Based on these projections, the tenure changes from a base of 20% to 61%, that is, an increase in ownership.
- All City subareas are projected to increase their share of rental multi-family housing units as well.
- As a percentage of all household unit types, rental single-family housing units will see a decline in the coming years.
- *East Portland* is the only subarea which is expected to increase its share of owner-occupied single family units.

The following set of tables (Tables 4 a-c) provides a cross tabulation of *Portland Subareas* and the eight *Household Types*. These tables provide data for the low, medium and high growth scenarios.

Table 4(a): Low Growth Scenario 2035	Portland Subareas (Metro Designated)						
	CBD	Northeast	East	Southeast	West	North	Row Total
Household Types							
Group 1- Low-Income Singles	9531	9945	11188	14017	6963	9937	61581
Pct. Subareas HHs (Column %)	20.6%	19.1%	18.2%	17.8%	9.2%	32.3%	
Pct. Household Type (Row %)	15.5%	16.1%	18.2%	22.8%	11.3%	16.1%	
Group 2 - Working Class	4078	7730	12566	13533	7282	6307	51497
Pct. Subareas HHs (Column %)	8.8%	14.9%	20.4%	17.2%	9.6%	20.5%	
Pct. Household Type (Row %)	7.9%	15.0%	24.4%	26.3%	14.1%	12.2%	
Group 3 - Emerging Singles	5836	6732	10556	12389	8756	4005	48274
Pct. Subareas HHs (Column %)	12.6%	12.9%	17.1%	15.8%	11.6%	13.0%	
Pct. Household Type (Row %)	12.1%	13.9%	21.9%	25.7%	18.1%	8.3%	
Group 4 - Established Singles & Couples	6154	6356	9774	10932	8229	2884	44329
Pct. Subareas HHs (Column %)	13.3%	12.2%	15.9%	13.9%	10.5%	9.4%	
Pct. Household Type (Row %)	13.9%	14.3%	22.0%	24.7%	18.6%	6.5%	
Group 5 - Young Middle Income Families	6778	4893	6438	7576	6129	1880	33693
Pct. Subareas HHs (Column %)	14.7%	9.4%	10.5%	9.6%	8.1%	6.1%	
Pct. Household Type (Row %)	20.1%	14.5%	19.1%	22.5%	18.2%	5.6%	
Group 6 - Fast Track Families	7626	5115	4581	6856	7973	1910	34061
Pct. Subareas HHs (Column %)	16.5%	9.8%	7.4%	8.7%	10.5%	6.2%	
Pct. Household Type (Row %)	22.4%	15.0%	13.4%	20.1%	23.4%	5.6%	
Group 7 - Successful Middle Aged	4701	7104	4002	8809	13358	2180	40155
Pct. Subareas HHs (Column %)	10.2%	13.7%	6.5%	11.2%	17.6%	7.1%	
Pct. Household Type (Row %)	11.7%	17.7%	10.0%	21.9%	33.3%	5.4%	
Group 8 - Movers & Shakers with Kids	1482	4129	2471	4490	17018	1625	31215
Pct. Subareas HHs (Column %)	3.2%	7.9%	4.0%	5.7%	22.5%	5.3%	
Pct. Household Type (Row %)	4.7%	13.2%	7.9%	14.4%	54.5%	5.2%	
Column Total	46187	52005	61576	78602	75707	30728	
Grand Total							**344806**

Table 4(b): Medium Growth Scenario 2035	Portland Subareas (Metro Designated)						
	CBD	Northeast	East	Southeast	West	North	Row Total
Household Types							
Group 1- Low-Income Singles	10182	10394	12072	14270	7048	10642	64608
Pct. Subareas HHs (Column %)	20.6%	19.3%	18.5%	17.8%	8.9%	32.6%	
Pct. Household Type (Row %)	15.8%	16.1%	18.7%	22.1%	10.9%	16.5%	
Group 2 - Working Class	4267	8039	13412	13857	7525	6652	53752
Pct. Subareas HHs (Column %)	8.6%	14.9%	20.6%	17.3%	9.5%	20.4%	
Pct. Household Type (Row %)	7.9%	15.0%	25.0%	25.8%	14.0%	12.4%	
Group 3 - Emerging Singles	6208	7054	11216	12775	9121	4271	50645
Pct. Subareas HHs (Column %)	12.6%	13.1%	17.2%	15.9%	11.5%	13.1%	
Pct. Household Type (Row %)	12.3%	13.9%	22.1%	25.2%	18.0%	8.4%	
Group 4 - Established Singles & Couples	5494	6348	9914	10884	8447	2987	44075
Pct. Subareas HHs (Column %)	11.1%	11.8%	15.2%	13.6%	10.6%	9.1%	
Pct. Household Type (Row %)	12.5%	14.4%	22.5%	24.7%	19.2%	6.8%	
Group 5 - Young Middle Income Families	7365	5103	6968	7939	6469	2034	35878
Pct. Subareas HHs (Column %)	14.9%	9.5%	10.7%	9.9%	8.1%	6.2%	
Pct. Household Type (Row %)	20.5%	14.2%	19.4%	22.1%	18.0%	5.7%	
Group 6 - Fast Track Families	8532	5500	4922	7160	8866	2084	37063
Pct. Subareas HHs (Column %)	17.3%	10.2%	7.5%	8.9%	11.1%	6.4%	
Pct. Household Type (Row %)	23.0%	14.8%	13.3%	19.3%	23.9%	5.6%	
Group 7 - Successful Middle Aged	5707	7287	4212	8885	13962	2337	42390
Pct. Subareas HHs (Column %)	11.5%	13.5%	6.5%	11.1%	17.5%	7.2%	
Pct. Household Type (Row %)	13.5%	17.2%	9.9%	21.0%	32.9%	5.5%	
Group 8 - Movers & Shakers with Kids	1674	4110	2521	4421	18173	1672	32571
Pct. Subareas HHs (Column %)	3.4%	7.6%	3.9%	5.5%	22.8%	5.1%	
Pct. Household Type (Row %)	5.1%	12.6%	7.7%	13.6%	55.8%	5.1%	
Column Total	49429	53835	65236	80192	79611	32679	
Grand Total							**360982**

Table 4(c): High Growth Scenario 2035	Portland Subareas (Metro Designated)						
	CBD	Northeast	East	Southeast	West	North	Row Total
Household Types							
Group 1- Low-Income Singles	10828	10970	13014	14655	7116	11394	67977
Pct. Subareas HHs (Column %)	20.6%	19.7%	18.9%	18.0%	8.6%	32.8%	
Pct. Household Type (Row %)	15.9%	16.1%	19.1%	21.6%	10.5%	16.8%	
Group 2- Working Class	4597	8433	14366	14357	7725	7119	56596
Pct. Subareas HHs (Column %)	8.8%	15.1%	20.8%	17.6%	9.3%	20.5%	
Pct. Household Type (Row %)	8.1%	14.9%	25.4%	25.4%	13.6%	12.6%	
Group 3 - Emerging Singles	6666	7416	11965	13209	9380	4565	53201
Pct. Subareas HHs (Column %)	12.7%	13.3%	17.4%	16.2%	11.3%	13.2%	
Pct. Household Type (Row %)	12.5%	13.9%	22.5%	24.8%	17.6%	8.6%	
Group 4 - Established Singles & Couples	6148	6531	10365	11178	8768	3136	46126
Pct. Subareas HHs (Column %)	11.7%	11.7%	15.0%	13.7%	10.6%	9.0%	
Pct. Household Type (Row %)	13.3%	14.2%	22.5%	24.2%	19.0%	6.8%	
Group 5 - Young Middle Income Families	7597	5236	7261	8065	6710	2141	37010
Pct. Subareas HHs (Column %)	14.5%	9.4%	10.5%	9.9%	8.1%	6.2%	
Pct. Household Type (Row %)	20.5%	14.1%	19.6%	21.8%	18.1%	5.8%	
Group 6 - Fast Track Families	6348	4570	4631	5955	6741	2040	30286
Pct. Subareas HHs (Column %)	12.1%	8.2%	6.7%	7.3%	8.1%	5.9%	
Pct. Household Type (Row %)	21.0%	15.1%	15.3%	19.7%	22.3%	6.7%	
Group 7 - Successful Middle Aged	8589	8412	4708	9815	17196	2578	51297
Pct. Subareas HHs (Column %)	16.4%	15.1%	6.8%	12.0%	20.8%	7.4%	
Pct. Household Type (Row %)	16.7%	16.4%	9.2%	19.1%	33.5%	5.0%	
Group 8 - Movers & Shakers with Kids	1757	4128	2606	4410	19222	1726	33850
Pct. Subareas HHs (Column %)	3.3%	7.4%	3.8%	5.4%	23.2%	5.0%	
Pct. Household Type (Row %)	5.2%	12.2%	7.7%	13.0%	56.8%	5.1%	
Column Total	52530	55696	68916	81644	82857	34700	
Grand Total							**376343**

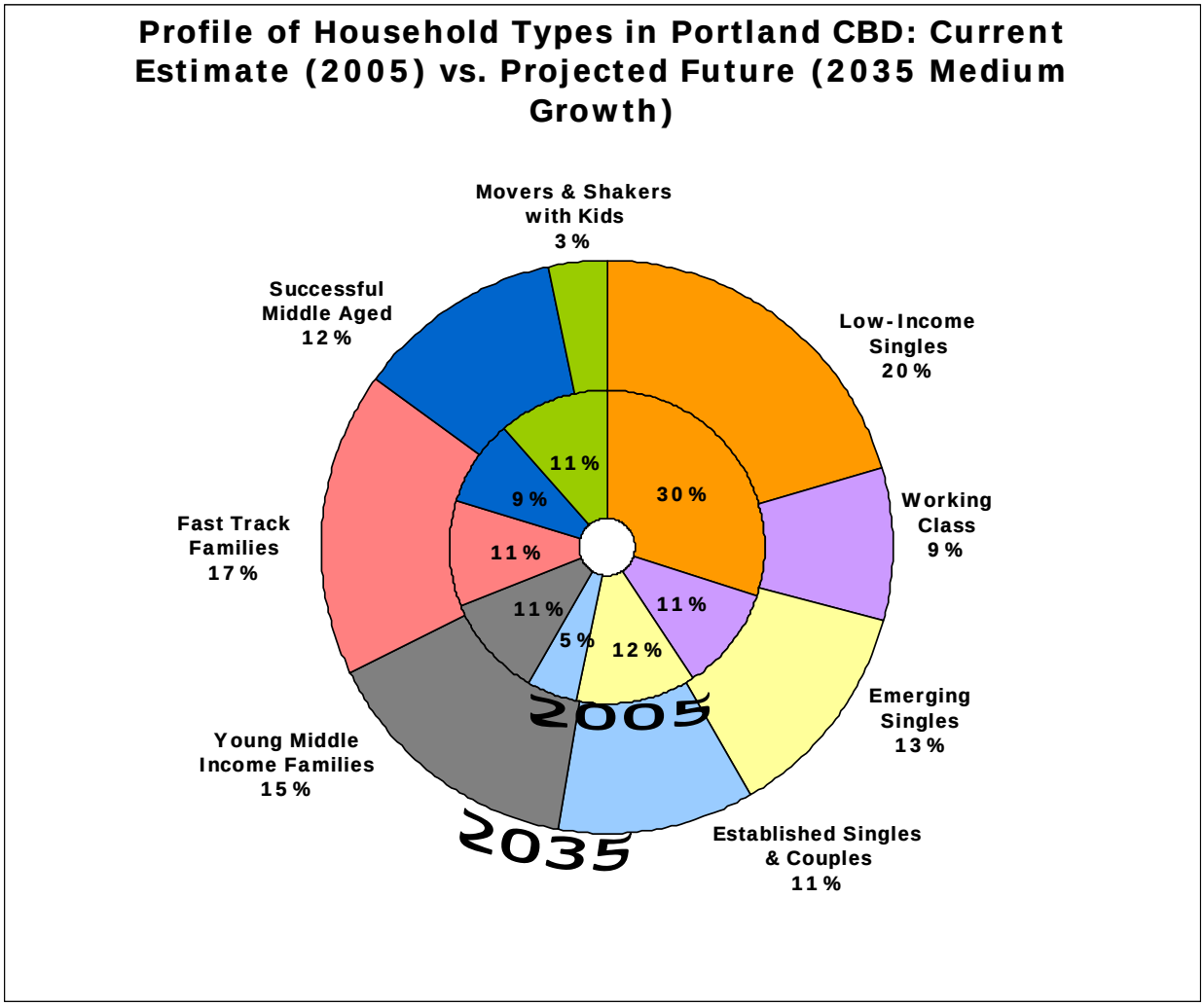
Key findings from Tables 4a through c are provided below:

- A comparison of low, medium and high growth scenario reveals that the distribution of household types does not significantly change with increase in number of households.
- The cross tabulations reveal that the City's subareas are not likely to be uniform with regards to distribution of household types.
- The household type distribution is more uneven for *North, East and West Portland* subareas as compared to *the Portland CBD, Northeast and Southeast Portland.*
- In terms of significantly high concentration of a certain household type, the projections show over 50% of Group 8 households (Movers & Shakers with kids) in *West Portland.* Households in groups 6 & 7 are also projected for geographic concentration in *Southeast and West Portland.*
- The *Portland CBD* is projected to house relatively low proportions of Groups 2 & 8.
- *East Portland* is projected to accommodate very low proportions of Groups 6, 7, 8.
- The *North Portland* subarea is projected to accommodate a significantly high (33%) concentration of households from Group 1.

It is important to note that this distribution of projected household types in City subareas is based on the assumption that existing policies and investment choices continue; a change in any of these existing baseline assumptions could impact the forecast, as is the case for all the projections discussed in this report.

The following set of graphs illustrates the current (2005) and projected (2035) distribution of the eight household types in the six subareas of the City:

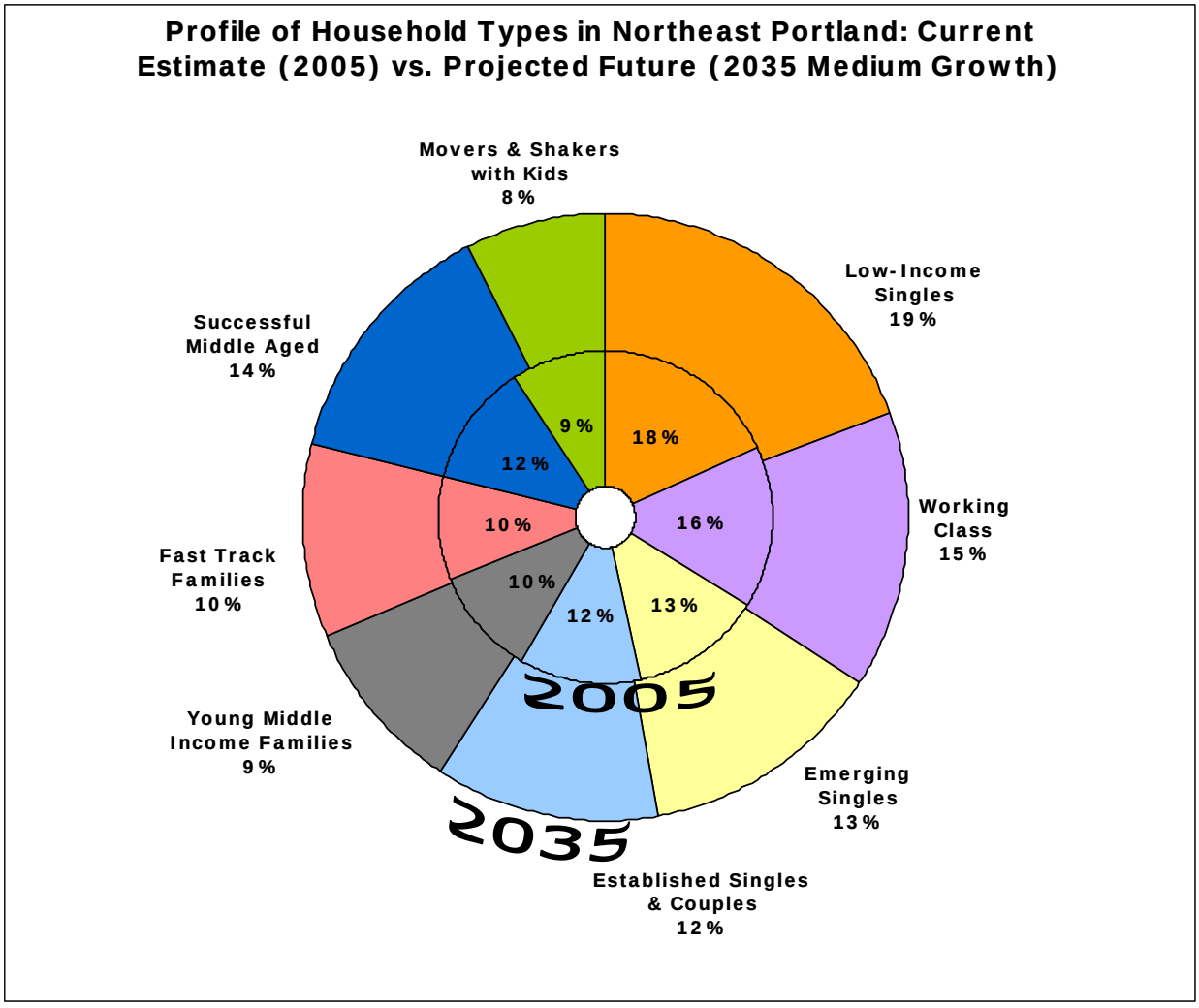
Figure 3:
Profile of Household Types in Portland CBD
Current estimate (2005) vs. Projected Future (2035)



Key findings from Figure 3 are provided below:

- Notable shifts in household types living in the **Central** area include that of **Group 4 (Established Singles),** which is projected to **increase to 11% from 5%.** Groups 5, 6, and 7 will also see some growth.
- A notable **decline** is projected for **Group 8 (Movers & Shakers with kids)** - **to 3% from 11%**. Groups 1 and 2 are also projected to decline.

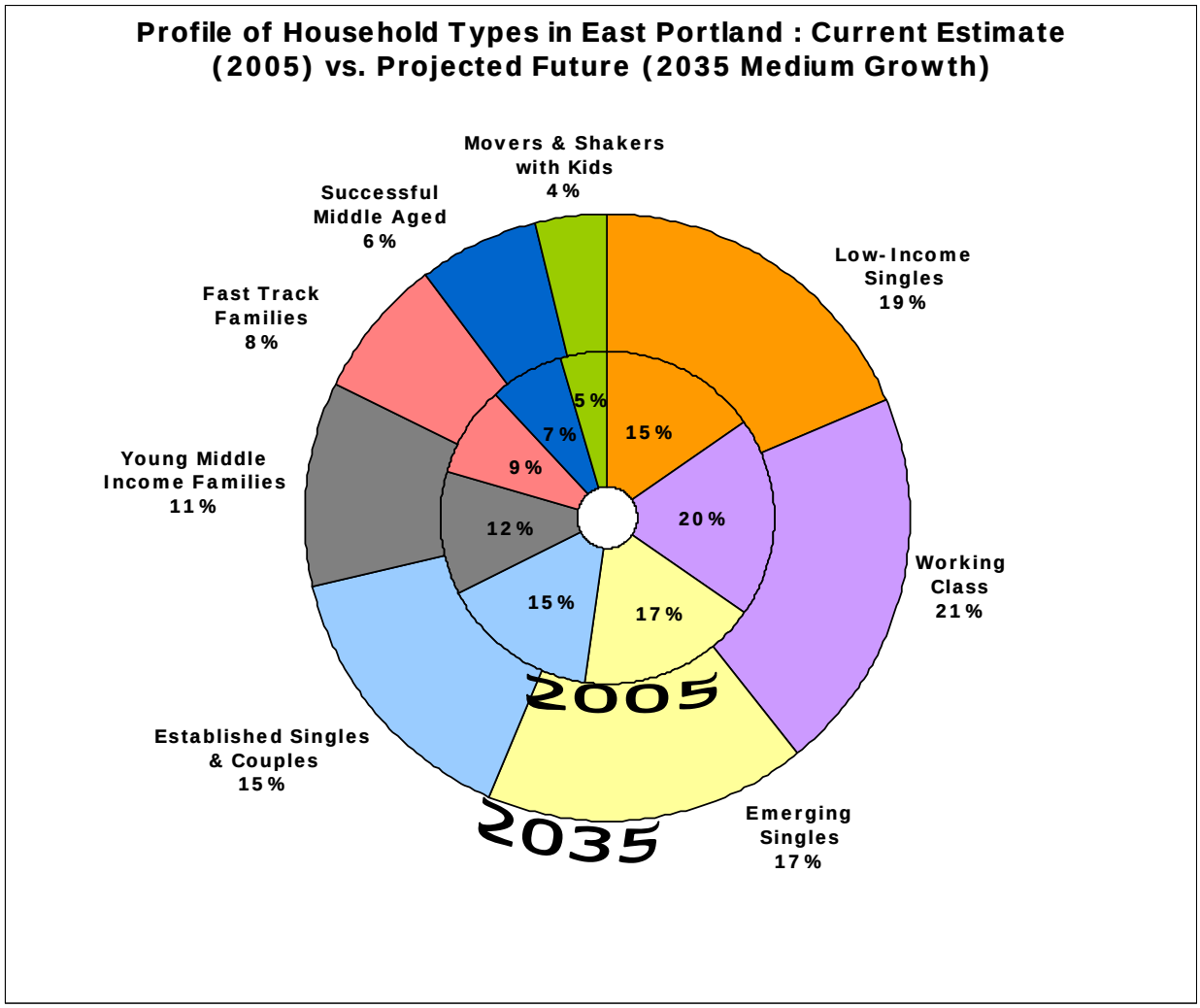
Figure 4:
Profile of Household Types in Northeast Portland
Current estimate (2005) vs. Projected Future (2035)



A key finding from Figure 4 is provided below:

- ***Northeast** Portland* will **not experience any significant changes** in distribution of household types in the projected future. Each of eight groups is projected for a small increase or decrease in geographic sharing of the subarea.

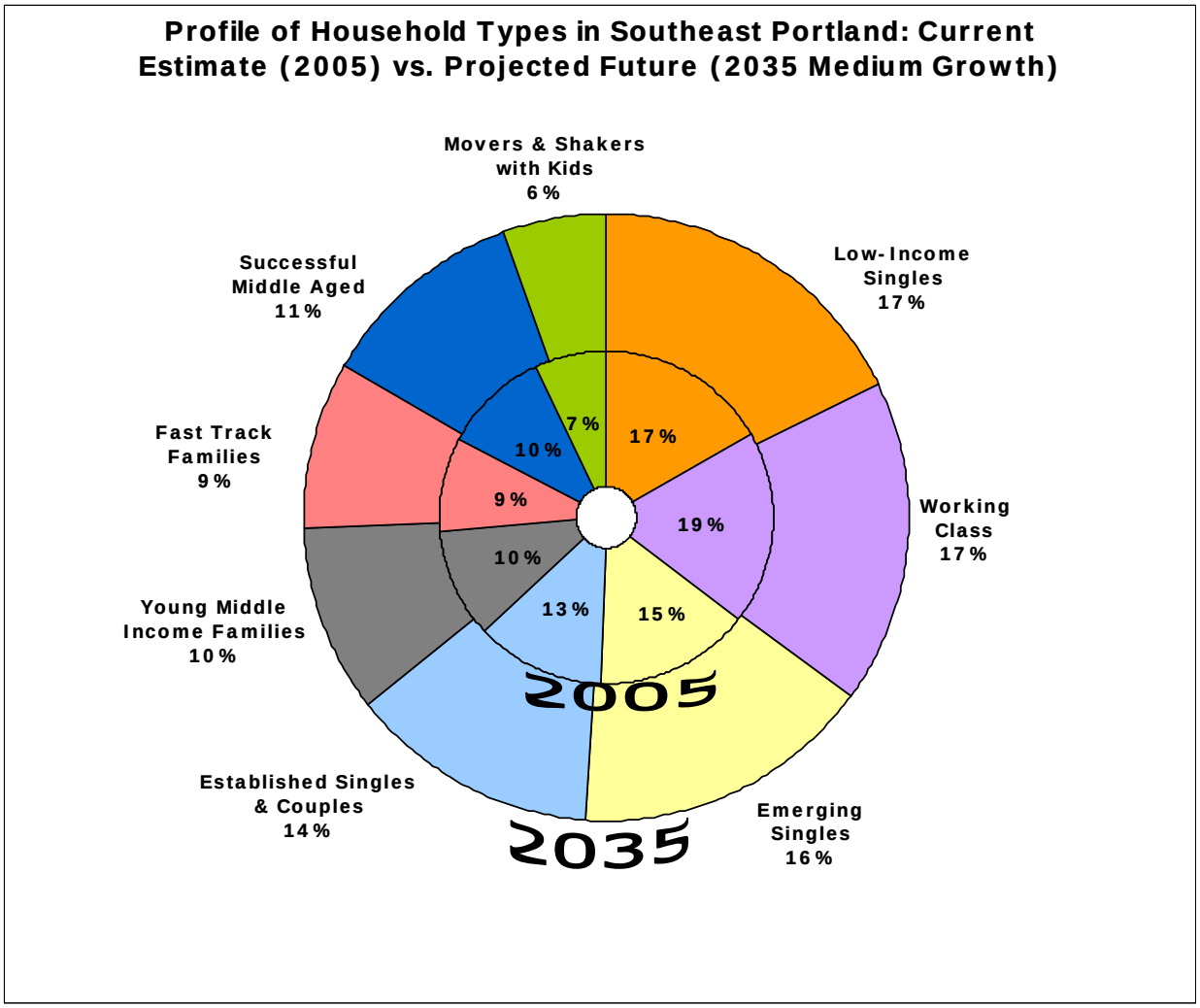
Figure 5:
Profile of Household Types in East Portland
Current estimate (2005) vs. Projected Future (2035)



A key finding from figure 5 is provided below:

- The distribution of the eight household types in ***East*** *Portland* is projected to shift only slightly. However, it is noteworthy that the share of **higher income groups** (3-8) will be **declining** while the **lower income groups are slated for an increase** in their respective subarea proportion (Group 1, the lowest income group, increasing to 19% from 15%).

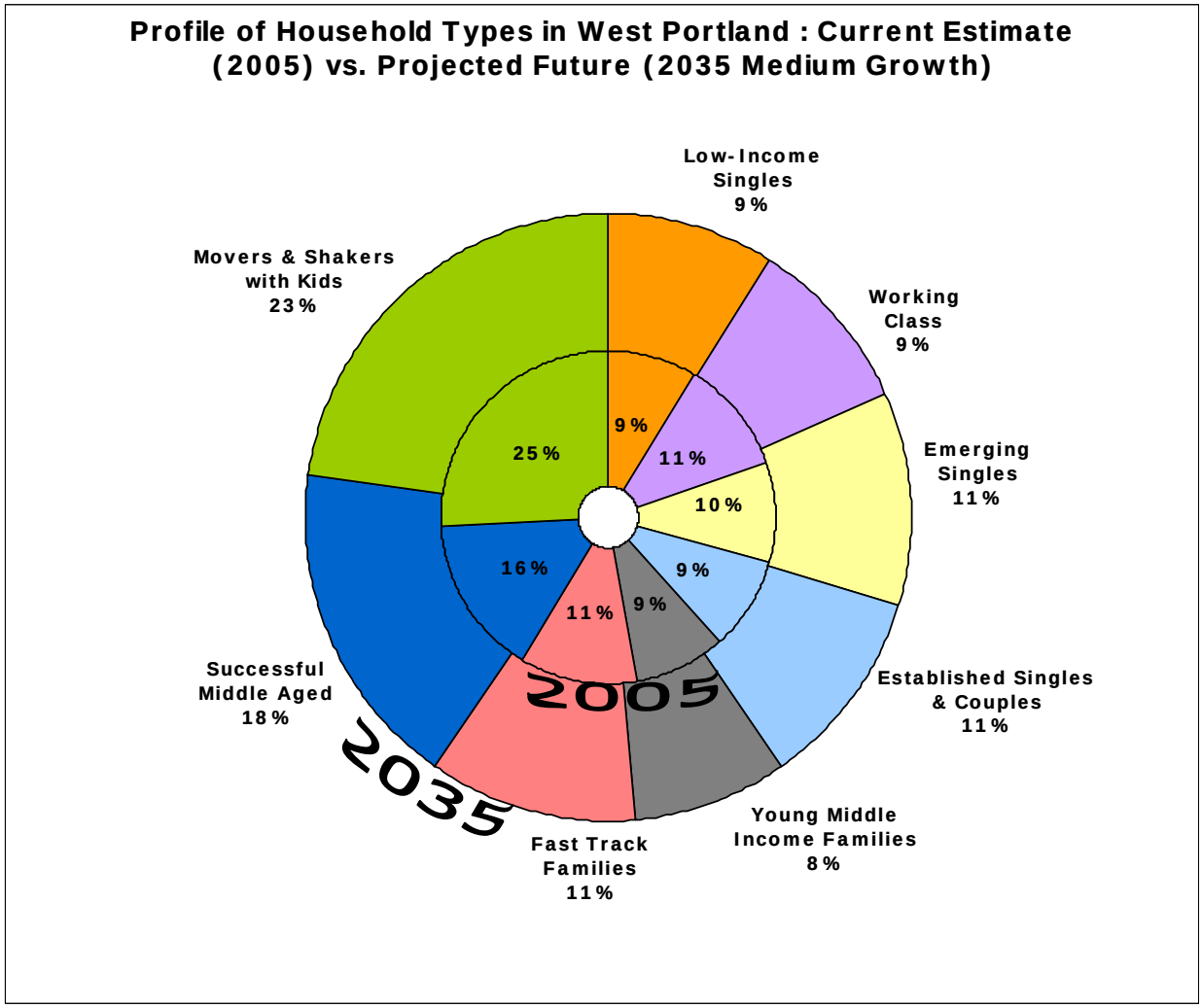
Figure 6:
Profile of Household Types in Southeast Portland
Current estimate (2005) vs. Projected Future (2035)



A key finding from figure 6 is provided below:

- The ***Southeast*** subarea household type distribution is not projected to see any dramatic shifts. However, the projections indicate that regardless of income, the area will see an **increase in households of smaller size**. For instance, Group 2 (Working Class) has larger households than Group 4 (Established Singles & Couples); Group 2 households are slated for a decline by 2035 while Group 4 is slated for an increase.

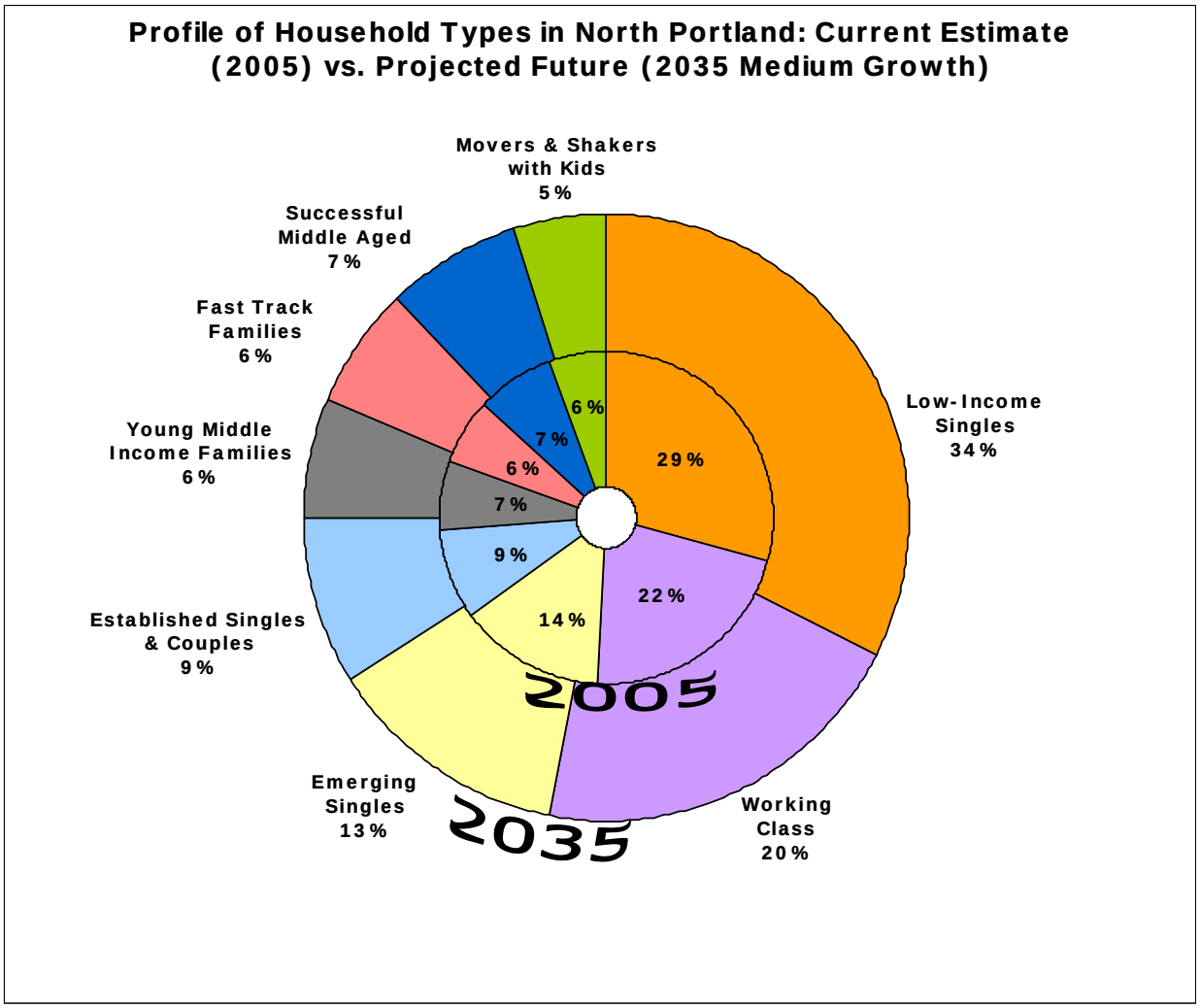
Figure 7:
Profile of Household Types in West Portland
Current estimate (2005) vs. Projected Future (2035)



A key finding from Figure 7 is provided below:

- Groups (6-8) form just **over half (51%)** of the household types in ***West*** *Portland* and this distribution is **projected to continue** into the future. Notably, these groups have **higher household income** than the other groups.

Figure 8:
Profile of Household Types in North Portland
Current estimate (2005) vs. Projected Future (2035)

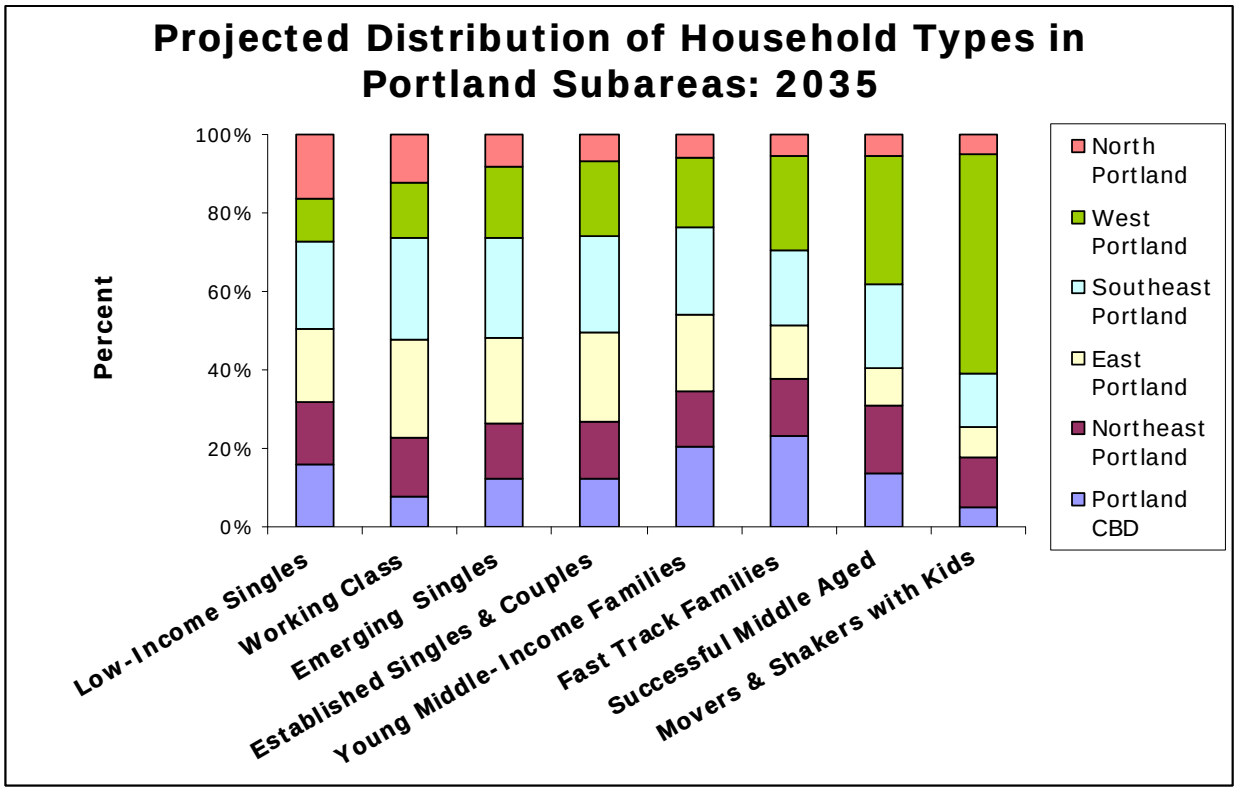


A key finding from Figure 8 is provided below:

- The above illustration reveals that nearly a **third** of the households in ***North*** *Portland* are from **Group 1, the lowest income group**, and that this group is **increasing its geographic share** of the North subarea by 2035. As the renter households in this group are elderly singles with low incomes, this pattern has implications for housing type and also human services.

The following bar graph (Figure 9) illustrates how each of the eight household group types are projected to be geographically distributed in the six subareas of Portland in 2035. It should be noted that the bars representing each household group type are not to scale relative to each other. That is, each bar is shown as the same size even though each represents a different total number of households. Group 1 (Low income singles) is the largest total citywide, with 18% of city households in 2035 in the medium growth scenario.

Figure 9: Projective Distribution of Household Types in Portland Subareas (2035)



Key findings from Figure 9 are provided below:

- The eight groups representing the various household consumption profiles are not projected to be uniformly distributed in the six Portland subareas. In particular, Group 8, the highest-income group, (Movers & Shakers with Kids), are predominately in West Portland. Group 1 (Low-Income Singles) is most evenly distributed.

- Groups 2, 3 and 4 are projected to be relatively evenly distributed across the city. A significant portion of these households are allocated to the *Southeast and East* subareas of Portland.

- Groups 5, 6, 7, and 8 (the upper income levels of the eight groups), are similar in their small allocations to *North Portland,* as well as to the *East and Southeast* subareas. By contrast, the upper income level groups make up a significantly large share in *West Portland.* Groups 5 and 6 also have a significant share of households in the Portland Central subarea.

DEVELOPMENT CAPACITY

The ability of the city and its subareas to meet future housing demand depends on many factors, but a basic one is simply whether there is enough land to build new units on. Therefore this background report includes discussion of projections for the "supply side" of the housing needs equation as well as the demand side covered in the chapters thus far. Just as the Metroscope model forecasts demand for new households, the model projects the supply, or "development capacity" of the land to house **new units** for new households. Development Capacity can be defined as the likely number of new dwelling units that could be built in the city under existing regulations and assuming the continuation of recent market trends. The City of Portland also calculates a development capacity forecast, using slightly different assumptions and methodology than Metroscope does. (The methodology of each model and corresponding assumptions regarding capacity are described in the in more detail in the appendix of this report.)

The amount of development capacity relates to how many **new** homes can be built, under existing zoning and regulations, either on **vacant land** or through a combination of infill or redevelopment of land referred to as "**refill**." Based on recent trends in home construction, a **significant portion of dwelling unit production for Portland has occurred through the refill process**. Unlike development that occurs in vacant land, production through refill poses more challenges to the effort of calculating "Dwelling Unit Capacity."

Based on permit activity and housing construction trends in the region, Metro has ascribed refill rates for various local jurisdictions; those refill rates affect the capacity numbers Metro provides for Portland and its subareas. It is important to note that the capacity as defined by the Metroscope model includes:

- All vacant capacity in the Metro area, plus
- All capacity likely resulting from refill over the next 35 years, plus
- Capacity likely to be generated by existing policies such as urban renewal.

Because of the above Metroscope assumptions, the capacity numbers projected by Metro are likely to be at the higher end of a range of possible numbers.

Table 5 provides the development capacity for Portland's subareas, according to Metroscope and also as calculated by the City of Portland using its Development Capacity Model. Unlike the Metroscope numbers, the City of Portland numbers include only the "likely redevelopable" lands in the six subareas of the City. "Likely redevelopable" lands are considered to be so because they are "underutilized" – that is, whatever is currently built on them is significantly less than what is allowed to be built under existing zoning. This second set of capacity numbers, from the City, is thus more conservative, and should be interpreted as **"at least this number of Dwelling Units."** Again, the two models projecting the dwelling unit capacity numbers are explained in detail in the appendix of this report.

Together, Metroscope's and the City's Development Capacity Model numbers serve to provide the upper and the lower bounds for a range of possible housing units in the City subareas, as Table 5 illustrates.

Table 5: Housing Demand Analysis

	Estimate	Projected Need (Growth -Supply)			Metroscope Ascribed Development Capacity	City of Portland's Development Capacity Model [1]
	Estimated Dwelling Units, 2005	Low Growth Scenario, 2035	Medium Growth Scenario, 2035	High Growth Scenario, 2035	Future Development Capacity:	Future Development Capacity:
Total	**240,078**	**104,728**	**120,904**	**136,265**	**189,137**	**141,191**
		Needed DU	Needed DU	Needed DU		
Subareas						
Portland Central Business District	12,267	33,920	37,162	40,263	47,436	46,621
Northeast Portland	44,363	7,642	9,472	11,333	18,052	8,300
East Portland	43,968	17,608	21,268	24,948	42,182	35,740
Southeast Portland	68,332	10,270	11,860	13,312	19,098	15,380
West Portland	48,761	26,946	30,850	34,096	41,106	24,600
North Portland	22,387	8,341	10,292	12,313	21,263	10,550
	240,078	104,728	120,904	136,265	**189,137**	**141,191**

Development Capacity Model [1] : based on lots using less than 20% of available development capacity (not including bonuses)

Key findings for Table 5 are provided below:

- Based on the Development Capacity numbers provided by the Metro model, all six subareas of Portland have adequate capacity to meet projected need. Nearly **189,100** housing units (mostly multi-family unit type) can be built in the City.

- Based on the City's Development Capacity Model, construction in **vacant and underutilized lots alone** can add at least **141,191** units in the various subareas of the City.

- The total capacity numbers can be best interpreted as follows:

  - According to Metroscope **up to 189,100** Dwelling Units can be built;
  - According to Development Capacity Model **at least 141,191** Dwelling Units can be built;

- The *Portland Central/CBD*. projected for nearly 300% growth by 2035, can **easily accommodate even the highest level growth scenario**. Both sets of capacity numbers corroborate this finding. The same trend holds true for *East Portland.*

- The *Southeast* and *North Portland* subareas have the **capacity** to meet low and medium growth forecasts through **new construction and refills in underutilized lands alone**.

APPENDIX

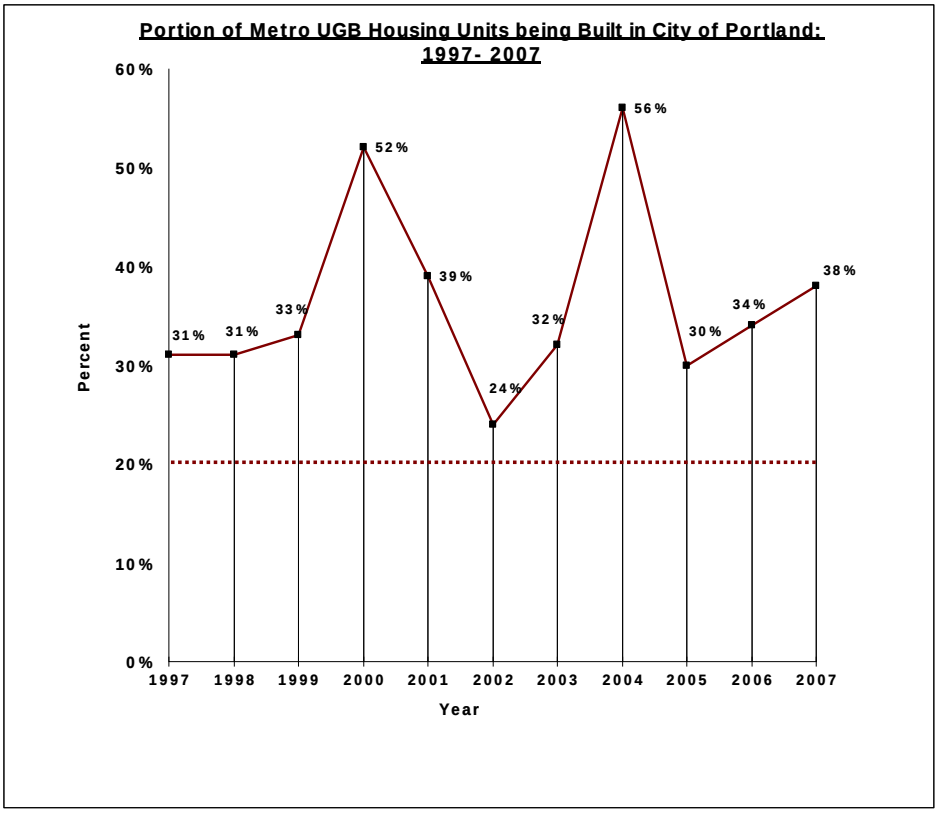
APPENDIX 1: RESIDENTIAL DEVELOPMENT IN PORTLAND - TRENDS, CAPACITY AND TOOLS

Portland has grown by about 200,000 people in 25 years, from a population of 380,000 in the mid 1980's to nearly 570,000 in 2008. Much of this population growth occurred on a fraction of the city's developable land. Over the last 15 years, the city and its private and non-profit developers have emerged as leaders and innovators in developing housing construction types that address a wide range of urban household needs, that fit changing demographics and life styles and that respond to economic conditions and rising fuel prices.

Increasing share of regional growth: Through the 1960s, 70s, and 80s the city captured 3 to 5 percent of the region's residential growth. More recently, however, that trend dramatically changed. Over the past 15 years, Portland captured more than one-third of the region's new housing starts, averaging over 36 percent. In 1992, the City Council Portland Future Focus initiative set a target of capturing at least 20% of the region's new housing starts. Since 1995, Portland has met or exceeded that target; in two of those years, the capture rate topped 50 percent. This remarkable 15-year trend is due in large part to intentional planning initiatives. Portland uses an array of regulatory and municipal tax finance tools, incentives, and state and federal funding sources, including Urban Renewal Area (URA) Tax Increment Financing (TIF), Transit-Oriented Limited Tax Abatement (TOD-LTA), System Development Charges (SDC's), targeted Capital Improvement Program (CIP) funds, development agreements, Floor Area Ratio (FAR) bonuses and transfers, and parking maximums and other state and federal funds.

The following figure shows Portland's housing capture rate for a ten year period, 1997-2007:

Figure 10: Portion of Metro UGB Housing Units Built in Portland, 1997-2007



Source: City of Portland Permits Data & Metro Information from Construction Monitor

Additionally, an analysis of the over 7,300 Multi-family residential permits issued from 1999 through 2008 showed a significant increase in *units per acre* permitted in all of our highest density mixed-use zoned lands.

- EX increased from 42 du/ac to 67 du/ac;
- CX zoned lands changed from16 du/ac to 40 du/ac; and the
- RX changed from 121 du/ac to 300 du/ac.

Another sign of successful implementation of new construction of higher densities is that In the last 15 years, the city can count about 100 examples of mixed use transit-oriented development (TOD) project development – where in the early 1990's there were fewer than a dozen. These are trends we do not expect to abate. In addition to our regular level of growth, rising energy prices, global economic trends and demographic trends will cause Portland and other developed regional centers to continue to attract a significant share of the growth coming to the region.

APPENDIX 2: METROSCOPE MODEL OVERVIEW

Metroscope is an “urban simulation model” that integrates the residential housing model with transportation, land use, and commercial location models. As it integrates land use and transportation, Metroscope provides a rich and realistic model of housing development that incorporates the impact of household choice, development economics, and commuting preferences. Metroscope is comprised of four inter-related models:

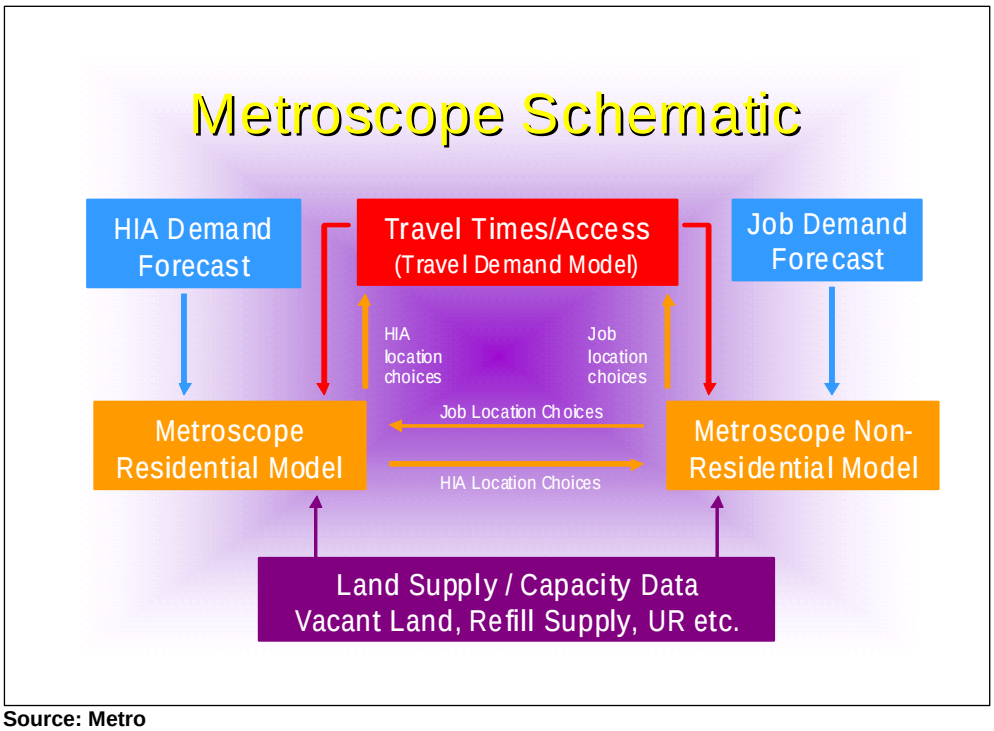
- **Economic Model:** Forecasts region-wide population and employment by industry. It converts the forecasted population into number of households (HH) and groups them into 400 possible combinations of HH Size, Income Category, Age-of-household-head and Children present/absent;

- **Location Model(s):** (comprised of residential and non-residential sub models) that predicts where and how much housing will exist in the future based on predictions of how much and where employment activity will occur, the price of housing, household income and other wealth factors, and the age of the householder;

- **Travel Model:** estimates trip origins and destinations, and measures perceived cost of travel between regions which affects where people work and decide to reside;

- **GIS/ land tools & database:** contains the land and development data and tracks where and how much land (parcels) will be available for development in the future, provides an inventory and accounting of developable land that is available, and its capacity for housing units and employment.

All sub-models are interrelated, and they influence and provide inputs for one another.



Source: Metro

While a detailed explanation of the model is beyond the scope of this report, it is important to note that the MetroScope is an equilibrium model that balances housing demand and housing supply by adjusting vacancy rates, prices, rents, and production. Housing prices and rents are bounded by household incomes to some extent, and housing production is determined partly by land use and zoning policies and by the interaction of rents, prices, and construction costs. The use of this model can help theoretically illustrate the implications of continuing with current policies and investments. Similarly, the Model can help illustrate changes to relevant policy assumptions and/or investments. In the model, households are expressed as "dwelling units" and so the following relation holds true:

1 Dwelling Unit (DU) = 1 Household

Also, the projections exclude population in group quarters[2] and so demands to house this segment must be dealt with separately. The household distributions that have been presented in this report do not test different policy options but only different population and employment growth rates. Consequently, there are three sets of household projections: the low growth scenario, the medium growth scenario and the high growth scenario tied to low, middle and high end population forecasts.

Relationship: Household Projections and Metroscope Allocations

The population and household forecasts produced by the economic model are among the inputs for the other three Metroscope sub models. As this input is subjected to a different set of assumptions and a different timeframe, the household numbers reported as Metroscope results, while similar, are not the same as the projected population, households and employment numbers released for the Portland metro area. In other words, Metroscope modeling provides the ability to take projected household numbers by type and allocates them to specific subareas. The Model's usefulness rests in its abilities to simulate changes to household allocations in response to changes to development policies, transportation investments and other incentives of local jurisdictions.

[2] A group quarters is a place where people live or stay, in a group living arrangement, that is owned or managed by an entity or organization providing housing and/or services for the residents. Nearly 3% of Portland's population lives in some form of group quarters. In comparison, about 2% of Metro area residents live in group quarters.

APPENDIX 3: UNDERSTANDING DEVELOPMENT CAPACITY METHODOLOGY – A COMMON LANGUAGE DEFINITION

"Development capacity" is an economic and urban planning term that is not necessarily easily understood or defined, yet is important in making projections, plans and long-term strategies for a city or region. Understanding these seemingly complicated terms helps us plan well for the future of Portland. The Household Demand and Supply Projections Background Report relies on development capacity numbers in making decisions about the future residential population of Portland.

Development capacity is essentially the ability of land to hold more "development," that is, to house more or larger buildings than what is there now. The buildings could be for any use; they could be a new home on a vacant site, or an addition to an existing commercial building, or even a demolition of an existing building and replacement with a larger, taller building in the same space. Either way, the development capacity is a number representing how much buildable space is judged as remaining on the land.

Indeed, the development capacity number is a judgment, because it depends on many different criteria which must be decided upon – first, related to the land itself, and then, to a set of realistic assumptions made about that land. Thus the development capacity number can change, depending on the assumptions. The assumptions fall into a set of questions which define or "judge" the capacity of the land by describing what if any constraints there might be to building on the land:

1. The physical **land** area itself –
   - **What** is on the land now? – Is it vacant? Is there a large or small building on it; an historically significant landmark? An uninhabited and about-to-fall-down shack?
   - **Where** is the land? Is it located near services like water, sewer, and transportation that would be needed for development on the parcel? Or is it far from other buildings, with no water lines and no roads connected to it?
   - What are the **landscape features** of the parcel? Does it have limitations such as steep (and thus unbuildable) hills? Is it in a floodplain and likely to flood?

2. The **assumptions** about the land –
   - What is **legally allowable** on the land? What is the zoning? Are there other regulatory restrictions, such as limits to height or massing? Is it designated sensitive environmental land that cannot be built on?
   - What is economically **feasible** to build on the land, judging by recent and historical local **real estate market trends**?

At the simplest level, one can summarize the development capacity number as depending on three easy to remember factors: the *land*; the "*allowable*" by law; and the *"likely."* Those factors can be expressed as a formula of sorts: "land, minus constraints or limitations, multiplied by the likelihood of development and the type of development that would likely be."

(Total Land Area minus Constrained/Limited Lands) times Likely Development

(The capacity number itself will be expressed differently depending on whether the likely development is residential or commercial. Residential development is commonly referred to as numbers of "dwelling units," commercial development, by number of "square feet" of space. Thus "dwelling unit capacity" is stated as numbers of residences, while "development capacity" is referred to more generically as square feet (since it could be any number of types of commercial, retail, institutional, or industrial buildings, for instance). In either case, the capacity is a reflection of what *could* be built, given available vacant and redevelopable lands.)

In the world of economics, real estate and planning, calculating development capacity is an exercise at *projections,* but a different sort from that of traditional projections, which start from a base number and expand from there. For instance, in the case of the Metroscope model and its residential demand projections, the base number is the Portland population in the year 2005. The traditional model projects a future number by starting with the base number and adding *likely* growth (mathematically either linear or exponential) to it. By contrast, development capacity numbers do not start from a base number per se. Instead, there are different models and methodologies that can be used to calculate development capacity.

Furthermore (and to make matters more complicated), the Metro regional government uses a slightly different method to figure capacity for its Metroscope model than does the City of Portland. For the City of Portland, the methodology for determining the dwelling unit capacity number is essentially a two step process, first figuring the land area available and then figuring the amount of building that could go on it, for residential units. The City's Bureau of Planning & Sustainability (BPS) has developed an in-house Development Capacity Analysis (DCA) GIS model with restrictive criteria that essentially calculates the net supply of buildable land that is available to accommodate future growth in population and employment.

Obviously, the assumptions made about the development trends, and average unit sizes, for example, have a vast impact on what development and dwelling capacity figures result in these models. For instance, if recent historical trends showed that on a parcel of one-tenth of an acre (a typical Portland residential lot) the average structure built would be 1000 sf single family home, that's a very different judgment of the development capacity of that parcel than if trends show a preponderance of 20 story apartment towers (with typical unit size of 1000 sf) being built on such a lot.

Even depending on the geographic part of the city, the conversion to units formula is different, to accommodate the differences in development patterns and densities in Portland's Central City vs. other areas of the City.

Because it is possible to make multiple assumptions for selecting the sites and converting them into dwelling units, the result is an estimate of the City's development capacity, not a forecast of actual development and not a prediction of which parcels are actually likely to develop.