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19 September 2000

TO: **Members, *Salem Futures* Project Management Team (PMT) Citizen Advisory Committee (CAC)**
FROM: **Terry Moore and Bob Parker**
SUBJECT: **THE SALEM HOUSING MARKET AND IMPLICATIONS FOR LAND DEMAND (TASK 1.3.2)**

SECTION I: INTRODUCTION

The *Salem Futures Project* is a comprehensive review of how to manage future growth and maintain the quality of life over the next 50 years. The City's Comprehensive Plan was first adopted in 1982, and it has not undergone an extensive review since 1992. Salem has grown steadily since then; expectations are for continued growth. Under the base case scenario, the continuation of the current development trends will force Salem to expand out onto surrounding rural land. The Salem Futures Project is the process the City is using to conduct a public discussion of possible development for futures for the City, and to decide on a future that public policies will aim for.

The purpose of this report is to describe, at a regional level, the kind of housing that exists now, and the kind of new housing likely to be demanded in the next 50 years, given likely changes in demographics, market forces, and public policy.[1] This report primarily provides additional information related to the assumptions made in Spring 2000 to simulate development patterns in 2050.[2] In other words, this memorandum provides (1) an assessment of whether the assumptions about housing type and density in the modeling of 2050 land needs are reasonable in light of information it presents about the possible futures for housing markets in the Salem Area, and (2) minor modifications to the estimate of land need based on refinements of the assumptions. This memorandum looks only at housing

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[1] This point deserves clarification, particularly with respect to public policy. Our analysis does *not* assume major changes in public policy. It does, however, assume that emerging trends in public policy will continue along the same trajectory. An example underscores the point: (1) public policy has trended towards requiring denser, more efficient use of residential land. Our evaluation of this trend is that it will lead to higher observed residential densities in the future—to a point. This assumption is reflected in our base case analysis.

[2] The simulations were developed in March, 2000 as part of the transitional phase of this project (between Phase I and the current Phase II). ECONorthwest prepared those simulations and reported the methods, data, and assumptions needed to generate them in a memorandum dated 16 March 2000, *Final Technical Memorandum on Methods for 2050 Forecasts.*

markets and residential land requirements: it does not evaluate industrial or commercial markets or land needs.

BACKGROUND

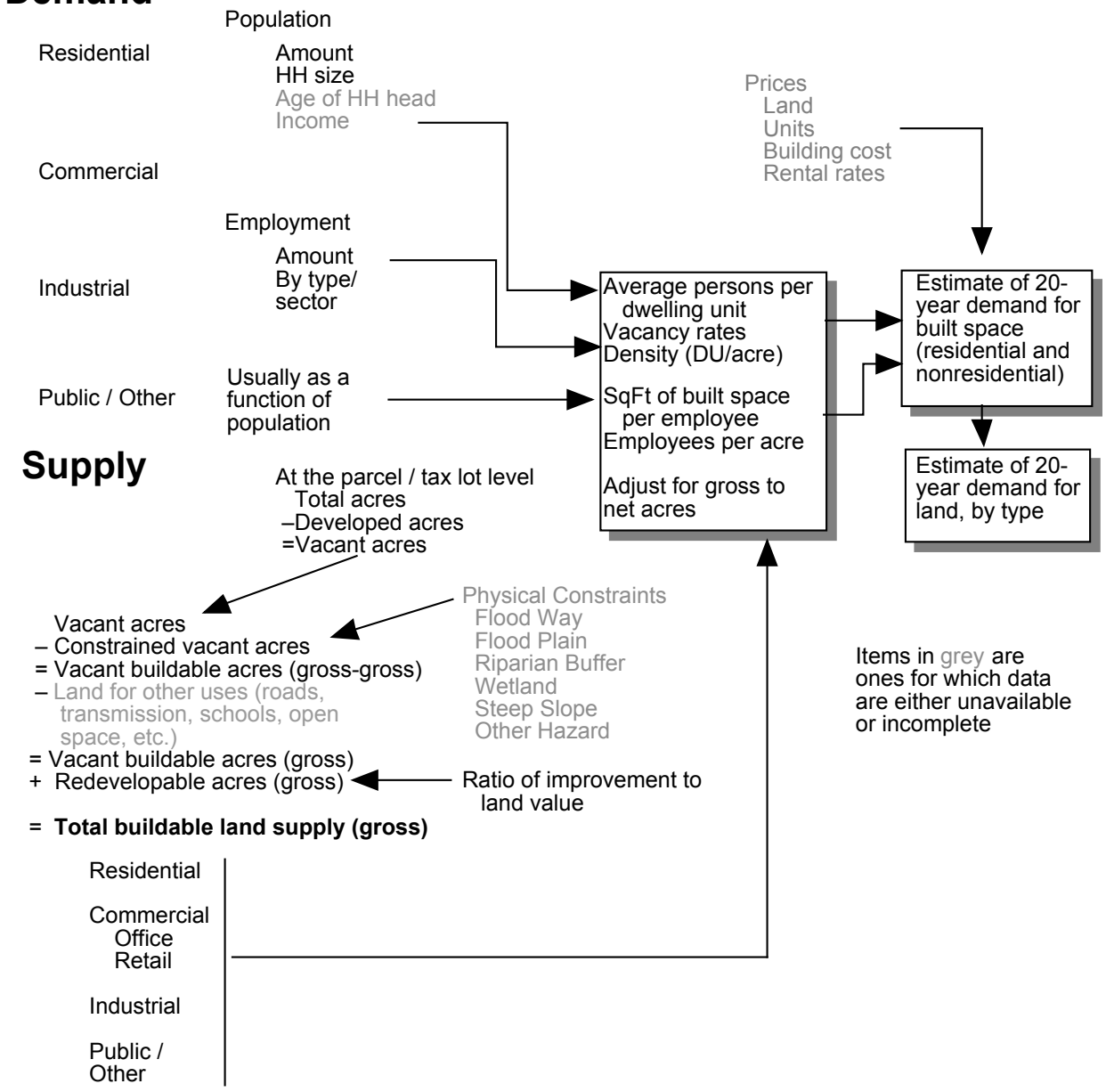
This memorandum is one of a series of technical reports that will help identify the Preferred Alternative. The Salem Futures Project consists of three major phases. Phase 1 work included a Vision Statement and Alternative Land Use Scenarios. This memorandum is a component of Phase 2, which will provide information needed to create and select a preferred alternative. Phase 3 will start when the community decides on a preferred alternative: it will involve formal adoption of changes to the comprehensive plan and zoning ordinances to implement the preferred alternative.

Because the planning horizon for this project is 50 years, the evaluation of housing markets contained in this memorandum is not a standard market analysis. Rather, it is one that provides supporting data for a 50-year forecast of land residential need that a preferred alternative must provide. A 50-year time frame represents 2.5 generations; given that the majority of new population in Salem is expected to come from in-migration, few of the residents here now will still be here in 2050. Moreover, because it is such a long timeframe, the assumptions that a typical market analysis is based on become speculative.

Thus, **this discussion of housing characteristics and markets seeks to inform assumptions made in the land consumption simulations that ECO developed during the transitional phase of this study**. **The key for the rest of the Salem Futures Project is to have a defensible estimate of the number and density (and, therefore, land requirements) of housing units by type.** The model for that forecast, and preliminary findings, are contained in ECO's memo of March 2000. All of our work in this memorandum aims at providing further information to justify or amend assumptions about housing demand that have already been made in that memorandum.

Figure 1 (from the March memo) shows schematically the structure that the Salem Futures Project uses to estimate the assumptions for residential land need. Any attempt to model future land development patterns requires a *supply* analysis (buildable and redevelopable land by type) and a *demand* analysis (population and employment growth leading to demand for more built space: residential and non-residential development). Data items in bold are the ones that the Salem Futures project will focus on: they suggest the kinds of assumptions that need to be made to make an estimate of future housing units and residential land. The geographic scope of the analysis is the expected metropolitan urbanized area (as approximated by a future UGB). The time horizon is 2050.

Figure 1: Components of a land development model that must be documented



Source: ECONorthwest

Table 1 shows the assumptions in ECO's March memorandum on population, employment, and land consumption forecasts. The CAC adopted these assumptions in the Spring of 2000. The assumptions were inputs into a model that simulated land consumption. It is exactly those assumptions that this memorandum addresses. This memo provides additional information, both local and national, to allow the CAC to refine and defend assumptions about the type and density of future housing.

Table 1. Summary of assumptions for residential land needs analysis

Variable	2050 Assumptions, ECO March Memorandum
Population	Accept City's 2050 population of 342,387 persons
Group Quarters	Increase of 1500 between 1997 and 2050
Persons Per Household	Aggregate assumption of 2.4 per *occupied* DU; applied to new households, and existing households
Vacancy Rate	5% for all dwelling units
Housing Type Mix	60% single-family/40% multiple family (more detail is provided about sub-categories of housing)
Residential Density	Increase the overall density to about 6.7 dwelling units per gross residential acre based on matrix of housing by type
Redevelopment	Apply a higher redevelopment assumption of 5% of all new housing. Assume residential redevelopment increases development by an average of 12 DU/gross acre over existing development.

Source: ECONorthwest, March 2000. See footnote 1 for full citation

ORGANIZATION

The remainder of this memorandum is organized to evaluate the assumptions in Table 1:

- **Section 2, Framework for this analysis** sets the context by discussing housing markets in general, and how ECO conducted this study.

- **Section 3, The Salem housing market: Where it's been, where it's headed, and why** describes the results and key conclusions of this study. The section ends with a revised housing land consumption scenario and evaluation of the sensitivity of land need to changes in the underlying assumptions.

This report also includes two Appendices:

- **Appendix A** summarizes comments from an August 18, 2000 developer focus group convened to discuss trends in the Salem real estate market and key assumptions in the long-range residential forecast in the Salem-Keizer area.

- **Appendix B** describes how housing markets work and long-run national trends that may affect the local real estate market in Salem-Keizer.

SECTION II: FRAMEWORK FOR THIS ANALYSIS[3]

OVERVIEW OF HOUSING MARKETS AND MARKET ANALYSIS

Economists view housing as a bundle of services that people are willing to pay for: shelter certainly, but also proximity to other attractions (job, shopping, recreation), amenity (type

[3] This section on the general characteristics of housing markets and residential market analysis draws heavily on previous studies by ECONorthwest.

and quality of fixtures and appliances, landscaping, views), prestige, and access to public services (quality of schools). Because it is impossible to maximize all these services and simultaneously minimize costs, households must, and do, make tradeoffs. They make these tradeoffs by making purchases of housing that balance their demand (which a function of preferences and income) with supply (cost, which is a function of land price, construction price, financing, regulation, and so on) at some price for some type of housing in some location.

What they can get for their money is influenced by both economic forces and government policy. Different households will value what they can get differently: they will have different preferences. While one cannot expect to predict the housing type and location choices of any particular family based on just a little information about its demographic and economic characteristics (e.g., income, age of household head, family size, number of workers and job locations, number of automobiles), substantial research confirms what most people understand intuitively: those kinds of factors affect the residential choices people make. Though one cannot use these variables to state with confidence what housing choice any particular household will make, one can use them to make general predictions about the average kinds of residential choices that large collections of households will make.

Thus, the housing choices of individual households are influenced in complex way by dozens of these types of factors. The housing market in Salem area is the result of the individual decisions of tens of thousands of households. Moreover, other factors besides demographics and socioeconomic characteristics on the housing-delivery-side of the equation influence what housing gets built and purchased: escalation of land and construction costs, financing, and public policies that affect cost such as those related to construction design, ADA, energy efficiency, and building codes. Closer to home, political decisions regarding land use and planning commissions have also greatly influenced the location and type of housing produced in the region.

The complexity of a housing market is a reality, but it does not obviate the need in the Salem Futures Project for some type of forecast of future housing demand, and for some assessment of the implications of that forecast for regional households and urban form. Such forecasts are inherently uncertain. Their usefulness for public policy often derives more from the explication of their underlying assumptions about the dynamics of markets (demand and supply conditions) and policies than from the specific estimates of future demand. That is the perspective that this memorandum takes.

A typical housing market analysis spans a period of one to five years for a subset of development or housing types. It is not a feasibility analysis, which is site specific and short run, with a financial evaluation. A long-run analysis might look at a 10-year period. In the private sector, longer forecasts are rare: most developers want to know what will sell if they build it now.

Public agencies take a longer perspective. They are trying to plan for public facilities that have a long life and long lead times, and to create development patterns that may cover dozens of square miles, not a few acres. Though the need for a long-run forecast of land needs (and, thus, of the population growth and housing demand that drives the majority of that need) is clear, such forecasts are inherently uncertain. A 50-year time frame covers 2.5 generations; given that the majority of new population in Salem is expected to come from

in-migration, few of the residents here now will still be here in 2050. The implication is that the best such an analysis can do is to provide a rough view of likely market conditions to set some reasonable bounds on the residential land needs that a preferred land use alternative must accommodate.

METHODS

The structure of our research and of this memorandum have been influenced by the all the previous points as well as the Salem Futures project process. A typical housing market analysis is for a few specific residential products at a specific site; for this project, we looked at all housing types for a 50-year period. These considerations led us to look for ways to simplify the analysis. Among those simplifications are:

- **Use MWVCOG forecast of population growth to drive our estimates of housing starts.** In other words, we do not make independent estimates of population growth. The validity of the MWVCOG forecast was reviewed and confirmed by ECO (in the March memorandum) and approved by the CAC. The decision to accept the MWVCOG 2020 forecast, and the ECO 2050 forecast extrapolated from that forecast, was reconfirmed by members of the Project Management Team (PMT) at a meeting in late July.

- **Focus on long-run demographic change, new housing, and 2050.** This memorandum is not the kind of market analysis that would go to a financial institution to justify a loan on a specific project to be built in the next year. It is long run. That focus means that we can ignore short-run events that plague those types of analyses: business cycles, changes in interest rates, vacancy rates, lease rates, projects in the pipeline, and so on. The assumption is that the long-run population forecast (and the economic forecast that underlies it) is at least approximately correct—in fact, that it could not be correct unless housing were being built to accommodate that population. Thus, our task is to make defensible predictions about the amount and characteristics of new dwelling units that will be built to accommodate projected increases in population.

The basic method is straightforward and typical: gather information relevant to a long-run forecast of Salem housing starts and residential land requirements, assemble that information in a way that facilitates discussion by the CAC, evaluate that information and use it to make decisions about assumptions required to simulate residential land needs in 2050, and re-do the March 2000 simulations of residential land need based on any recommended changes in those assumptions. To conduct our evaluation we looked at information relating to Salem housing markets, housing markets in other jurisdictions in the Willamette Valley, and national housing and demographic trends. We also conducted a focus group with local experts on the Salem housing market to get opinions about future housing types, densities, and redevelopment potential. The main steps in our analysis are:

- Describe current and forecasted demographic and socioeconomic characteristics that affect the amount and type of housing that consumers will demand and the market will build.

- Analyze the current housing market (type of housing existing and being constructed).

- Describe how changing economic and demographic trends are expected to impact the future housing market. That description includes more than just regional data; it looks, for example, at national trends as well, since the region will be influenced by the same forces that are creating those trends. Given this study's focus on getting information useful to the evaluation of the assumptions in the Preferred Alternative, we focus on describing housing change (i.e., new construction) between now and 2050.

- Identify barriers that prevent the market from meeting current housing demand and barriers that may prevent the market from meeting future demand.

Any forecast of housing markets is only as good as the assumptions that drive it. We have tried to be clear in this memorandum about the assumptions we are making, and the reasons (the data) for those assumptions. In addition to the specific assumptions about housing types and land requirements that we describe below, there are some overarching assumptions that we believe are generally accepted by the PMT and CAC, but which some people may disagree with. These include:

- That population will grow continuously. This assumption implies economic stability.

- That Oregon will continue to have a land use planning program. State policy requires UGBs must have a land supply for 20 years. Therefore, we assume no land supply constraint (at least, no worse than now). Moreover, we assume that buildable land will be serviced.

- That in the base case, no plan designation changes will occur.

- That all land presently designated for residential uses will be built out, and that new land residential land will be added to the UGB to accommodate demand beyond present capacity.

- That residential land added to the UGB will be designated consistent with the single-family/multiple family split assumed for new housing between 2000 and 2050.

SECTION III: THE SALEM HOUSING MARKET: WHERE IT'S BEEN, WHERE IT'S HEADED, AND WHY

INDICATORS OF PAST AND CURRENT MARKET PERFORMANCE

Number and type of dwelling units

Table 2 shows the number and share of housing units by type in the Salem-Keizer UGB, with single-family units broken down by lot size and multi-family units broken down by number of units. Mobile-home units are included in the data for single-family units. Table 2 shows 56% of all units are single-family and 44% are multi-family. Table 2 includes about 53,100 records that had complete data, but it excludes property records that do not meet certain criteria (see Table 2 note).

Though we have no reason to believe that the excluded records would systematically affect the distribution of housing units in the Salem-Keizer shown in Table 2, the numbers do square with other analysis we have conducted. 1990 Census data shows, for example, 71% of all housing in the combined city limits of Salem and Keizer being single family (including 6% that are manufactured housing). A 1997 transportation analysis (SKATS) reported by MWVCOG placed the single-family percent at 67.6% (including 5% manufactured housing), and gave a UGB total of 63,843 dwelling units. The "share by type" and "previous assumption by lot size" columns compare the assessment data with the assumptions used in the initial simulation (March 2000). The results show that the initial simulation used assumptions higher than the existing share (as calculated from the assessment data) for all categories except the 5,000-9,999 sq. ft. category.

Table 2. Dwelling units by lot size and type, 1999

Housing type/Lot size	Dwelling units	Share of total	Share by type	Previous assumption by lot size
Single-family by lot size				
<5,000	2,939	5.5%	9.8%	13.3%
5,000-9,999	18,765	35.3%	62.5%	55.0%
10,000-19,999	6,451	12.1%	21.5%	25.0%
20,000 or more	1,856	3.5%	6.2%	6.7%
Total single-family	30,011	56.5%	100.0%	100.0%
Multi-family by units in structure				
Duplex	2,624	4.9%	11.4%	n/a[1]
3-4 units	17,038	32.1%	73.7%	
5-9 units	53	0.1%	0.2%	
10-19 units	216	0.4%	0.9%	
20-49 units	1,281	2.4%	5.5%	
50 or more units	1,897	3.6%	8.2%	
Total multi-family	23,109	43.5%	100.0%	
Total all units	53,120	100.0%		

Source: ECONorthwest from property tax assessment data.
Note: Table 1 includes only residential properties that show one or more dwelling units and with have a non-zero field for acreage.
[1] The simulator uses housing types (duplex, row house, garden apartments, and urban) that are not directly comparable to the number of units in structure.

In sum, we have serious doubts about the validity of the data presented in Table 2: the data we used for our more detailed analysis appears to have problems. The bulk of the evidence suggests that the current mix of housing is about 65% to 68% single family.

Table 3 supports this conclusion. It shows building permit data for the 1990–1999 period for the combined Salem-Keizer UGB. It shows that 59% of new construction was single family, 5% was duplexes, and 36% was multi-family (note that we count mobile homes as single family structures). If the permit data are correct, they suggest that the percent of total dwelling units that single-family units compose is declining slightly. In other words, multi-family construction in 1990 was higher than the historical average. That trend might move single-family units to about 65% of total stock in 2000.

Table 3. Number of building permits approved for new residential construction within the urban growth boundary, 1990–1999

Year	Single-Family	Duplex	Multi-Family	Total
1990	760	38	930	1,728
1991	744	68	482	1,294
1992	962	54	748	1,764
1993	862	96	876	1,834
1994	910	68	243	1,221
1995	874	138	508	1,520
1996	1,082	122	735	1,939
1997	957	50	479	1,486
1998	1,030	70	247	1,347
1999	794	58	131	983
Total	8,975	762	5,379	15,116
Share	59%	5%	36%	100%

Source: City of Salem, Greater Salem Area Net Residential Building Permit Activity, 1990–1999.

The variability in Table 3 is interesting. Single-family units as a percent of total units constructed varies from a low of 44% in 1990 to a high of 81% in 1999. That variability makes choosing a single rate for the next 50 years difficult. The real estate literature is very clear that there are cycles in real estate. Our solution is to average together the last 10 years to smooth out the cycles, while still weighting future performance by recent, rather than distant, trends.

A key question is whether the future will be like the past. In other words: should one forecast the future mix to be equivalent to the historical mix, or are other factors likely to change the mix? We discuss some of those factors later in the memorandum. For now, we conclude that the data we have reviewed would support future single-family housing being anywhere from 60% to 65% of new housing construction, assuming no big changes in public policy or market conditions. Our March memorandum assumed the split would be 60% single family and 40% multi-family.

Net density and lot size of dwelling units

Table 4 shows residential density (dwelling units per net acre) by dwelling unit type. It calculates density by adding up the number of dwelling units and dividing by the total number of acres for every lot for each type of dwelling unit. This measures *net* residential density because the acreage is for lots only and does not include area for streets or other public areas associated with residential development.[4] The results are consistent with those reported in the March memorandum.

[4] Net density is measured at the lot-level. Gross density is measured at the project (e.g., subdivision) level, or at an even larger scale (e.g., neighborhood, which means that some measures of gross density include non-residential land). A typical conversion for *residential* land from gross to net acres is made based on the empirical observation that typical housing developments have anywhere from 15% (for multi-family) to 25% (for some single-family) of their total site area in non-residential uses that are not part of the lots. Those uses are predominantly—sometimes exclusively—streets.

Table 4. Dwelling units per net residential acre by dwelling unit type

Dwelling type	Dwelling unit per net acre
Single-family by lot size	
<5,000	11.5
5,000-9,999	6.0
10,000-19,999	3.5
20,000 or more	0.6
Total single-family	3.5
Multi-family by type	
Duplex	6.1
3-4 units	15.6
5-9 units	13.9
10-19 units	14.7
20-49 units	10.6
50 or more units	14.7
Total multi-family	12.9
Total all units	5.1

Source: ECONorthwest from property tax assessment data.
Note: Table 1 includes only residential properties that show one or more dwelling units and with have a non-zero field for acreage.

Table 5 tries to disaggregate the data in Table 4 to show recent trends. It shows net density by dwelling unit type in the 1970s, 1980s, and 1990s.

Table 5. Dwelling units per net acre by dwelling unit type and decade, 1970–1999

	Dwelling unit per net acre		
Dwelling type	1970s	1980s	1990s
Single-family by lot size			
<5,000	14.1	10.2	11.0
5,000-9,999	5.9	6.0	6.3
10,000-19,999	3.6	3.6	3.5
20,000 or more	0.7	0.4	0.5
Total single-family	4.4	4.1	4.2
Multi-family by type			
Duplex	9.4	7.8	9.4
3-4 units	15.7	6.2	17.4
5-9 units			
10-19 units			
20-49 units			
50 or more units			
Total multi-family	10.8	7.4	10.1
Total all units	4.9	4.2	4.5

Source: ECONorthwest from property tax assessment data.
Note: Table 4 includes only residential properties with a dwelling unit, year built blank or in the 1900–1999 period, and acre >0. Most records for multiple family property with 5 or more units do not have data in the year built field.

Table 5 shows that the density of single-family units has been generally declining, with the largest drop in net density for housing units on lots less than 5,000 sq. ft. Net density for single-family units on lots 5,000–9,999 sq. ft. has increased slightly over the last three

decades. Table 5 shows that average multi-family density decreased substantially between the 1970s and 1980s, falling from 10.8 to 7.4 units/acre, then increased in the 1990s to 10.1 units/acre. These data are only suggestive, however, and must be used with caution. Unfortunately, they do not include any information about the density of larger multi-family developments (5 or more units) because records for these properties do not have data in the year-built field.

Table 6 shows gross density (lots per gross acre) for subdivisions in the Salem area over the 1994–1997 period. Gross acres include land for streets and other areas that are associated with residential subdivision development but not included in the area of individual lots. Table 6 shows gross density has ranged from 2.8–5.2 lots per acre, with an average of 4.0 lots per acre over the four-year period. That number is consistent with the finding in Table 5 showing densities of about 5 dwelling units per net acre.

Table 6. Gross density in Salem area subdivisions, 1994–1997

Year	Gross Acres	Lots	Gross Density (lots/acre)
1994	44.1	228	5.2
1995	100.1	418	4.2
1996	142.3	595	4.2
1997	74.0	205	2.8
1994–97	360.4	1,446	4.0

Source: Mike Jaffee, Mid-Willamette Valley Council of Governments.

The data used in Table 6 do not include any mobile home parks, so it may underestimate true gross residential density in the Salem area because mobile home parks generally have a higher gross density than traditional single-family subdivisions. The data in Table 6 also do not include area for arterial roads, schools, or other public space outside of subdivisions that is needed to serve residential development, so the gross density reported in Table 6 does not represent the total land area needed to accommodate residential development.

Together, Tables 5 and 6 support the assumptions made in the ECO March memorandum regarding future average gross residential density for single-family units, which was 4.4 dwelling units per gross residential acre, a modest increase in average density over recent trends. It is an open question among real estate experts—as our later reporting of the results of a focus group show—whether single-family densities will increase because of increasing housing costs and public policy that favors smaller lot sizes or increase the long-run trends have been for larger single-family houses, though not larger lots on average.

The long-range residential forecast for Salem-Keizer includes assumptions about *net* residential density for single-family homes by lot size, and about how net residential density gets converted to gross residential density (referred to elsewhere in this memorandum as the net-to-gross adjustment factors). The net-to-gross adjustment factors estimate the share of land used for streets and other non-private areas of residential developments. Applying these adjustment factors to the assumptions of net density yield an

overall gross density of 4.4 units per acre for residential developments in Salem-Keizer.[5] This result for gross density is within the range of gross densities observed in the Salem area over the 1994–1997 period.

Tenure and vacancy rate

Table 7 shows housing units by tenure and vacancy within the city limits of Salem-Keizer. The vacancy declined from 8% in 1980 to 4% in 1990, with most of the decline in the number of units for rent.

Table 7. Housing units by tenure and vacancy status in Salem-Keizer, 1980 and 1990

	1980		1990	
Occupied Units	**41,049**	**100%**	**49,268**	**100%**
Owner	23,263	57%	27,814	56%
Renter	17,786	43%	21,454	44%
Vacant Units	**3,222**	**8%**	**1,909**	**4%**
For Sale Only	721	2%	413	1%
For Rent	1,893	5%	862	2%
Other Vacant	608	1%	634	1%

Source: Census date reported in State of Oregon, Housing and Community Services Department, *Oregon Census Abstract*, July 1993. Data for Salem and Keizer combined by ECONorthwest.

Tenure is not a variable in the simulation model. In general, tenure does not have a big influence on development patterns independent of housing type. Clearly there is a high correlation in Oregon between housing type and tenure: new single-family housing is predominantly owner occupied, and new multi-family housing is almost entirely renter occupied.

Vacancy rates fluctuate substantially. In a short-run market analysis they are important as indicators of the strength of demand: high rates indicate a soft market, and suggest that any new housing will have to compete with existing supply. For a long-run analysis of the type in this memorandum, the more important issue is what we refer to as the "frictional" vacancy rate: the rate that one would expect to see in an average to strong housing market because there will always be some houses vacant as people move. That rate, based on the literature and our research in other studies, is greater than 2% and less than 10% for housing markets: we have typically assumed 5%, a number that real estate experts have supported. The importance of this number for a long-run housing forecast is that to meet the housing needs of forecasted new households, a city has to provide about 5% more housing units than the forecasted number of new household.[6] We found nothing in our research to cause us to change from the assumption in our March memorandum of 5%.

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[5] According to Mike Jaffe, Mid-Willamette Valley Council of Governments, the subdivision data used in Table 6 include only single-family lots, so the number of lots equals the number of dwelling units. These data can be directly compared to the gross density assumptions (units/acre) in the long-range residential forecast.

[6] More precisely, the calculation is: (DUs needed without vacancy adjustment) / (1 - vacancy rate).

FACTORS AFFECTING FUTURE HOUSING PRODUCTION IN SALEM

This section presents data on key factors affecting future housing demand and production in Salem: population growth, socioeconomic and demographic conditions, national housing trends, residential land supply, industry factors, and public policy.

Population growth

Table 8 shows population growth forecasted for the Salem-Keizer UGB area for the 2000–2050 period. Population is expected to grow by 153,315 people over the 1997–2050 period. While Table 8 shows some variation in the amount of population growth by decade, in general this forecast anticipates relatively stable growth over the forecast period. This pattern of population growth means that the forecast implicitly assumes that economic conditions in Salem-Keizer will remain relatively stable both absolutely and relative to other areas of the nation.

Table 8. Population growth in Salem-Keizer UGB, 1970–2050

Year	Population	Growth	AAGR
1970	93,000		
1980	138,700	45,700	4.1%
1990	160,229	21,529	1.5%
1997	189,072	28,843	2.4%
2000	196,086	7,014	1.2%
2010	225,026	28,940	1.4%
2020	255,338	30,312	1.3%
2030	285,063	29,725	1.1%
2040	312,955	27,892	0.9%
2050	342,387	29,432	0.9%
1997-2050		153,315	1.1%

Source: Mike Jaffe, City of Salem. *Salem-Keizer Historic Population and Growth Forecasts*. Memo to Salem Futures CAC, March 1, 2000.

Note: AAGR is Average Annual Growth Rate.

The population data presented in Table 8 includes population in group quarters, and the forecast assumes that group quarters population will remain at 1990 levels through the forecast period. This assumption is implied by the steps used to develop the population forecast for Salem-Keizer:

- Group quarters population was subtracted from the 1990 Salem-Keizer population (160,229)

- Annual average growth rates (AAGR) for each 5 year increment, from the long-term forecast for Marion and Polk Counties[7], were applied to Salem-Keizer population (minus group quarters population) to forecast population growth through 2040

[7] State of Oregon, Department of Administrative Services. 1997. *Long-Term Population and Employment Forecasts for Oregon*. Salem: Office of Economic Analysis. January.

- The AAGR for the 2035 to 2040 period was used to forecast Salem-Keizer population growth for the years 2040 to 2050

- 1990 group-quarters population was added back in to the population estimates for a forecast of total population in each period.

Group quarters population is assumed to remain constant because the majority of group quarters population is in institutional settings that are expected to have little effect on population growth.[8] This method also shows that the forecast implicitly assumes that Salem-Keizer's population (minus group quarters population) will have a constant share of population in Marion and Polk Counties, since both grow at the same rate.

At a meeting in July the PMT reviewed the aggregate population forecast for 2050 made in the March memorandum and found no reason to change it. Our further research found no evidence to justify changing either the aggregate population forecast, or the base allocation to group quarters.

Socioeconomic and demographic profile

Table 9 shows population, group quarters population, and household size estimates from Claritas, a private vendor of demographic data. The data in Table 9 are for the area within the city limits of Salem and Keizer, so they are not directly comparable to the population data in Table 7 which are for the area within the Salem-Keizer UGB. Table 9 shows group quarters population declined in the 1990–2000 period while total population grew, so the share of population in group quarters declined from 7.3% to 5.4%. Group quarters population is expected to grow by only 41 by 2005, so its share of total population will drop to 5.1%.

Table 9. Population, group population, and household size in Salem-Keizer, 1980–2005

	1980	1990	2000	2005
Population	115,341	129,670	162,382	173,771
Grp Qrt. Pop	7,743	9,521	8,827	8,868
Households	43,568	49,268	62,093	66,556
Household Size	2.47	2.44	2.47	2.48
Grp Qrt. % Pop	6.7%	7.3%	5.4%	5.1%

Source: Claritas, August 2000.

Average household size in Salem-Keizer grew in the 1990s and this trend is expected to continue through 2005, which is counter to the general trend of declining household size in other areas. Table 9 shows average persons per household in Salem and Keizer as well as Marion County, Oregon, and the U.S. Table 10 shows the average persons per household in Salem has been less than in other areas in Table 10, and grew between 1980 and 1990 while others declined. Average persons per household in Keizer is larger than the county or state average, but smaller than the national average, and declined between 1980 and 1990

[8] Mike Jaffe, City of Salem. *Salem-Keizer Historic Population and Growth Forecasts*. Memo to Salem Futures CAC, March 1, 2000.

at a rate within the range of rates for other areas in Table 10. The data in Table 10 are not comparable to household size shown in Table 9 because the data in Table 9 are for the Salem and Keizer city limits area combined.

Table 10. Average persons per household, 1980 and 1990

Area	1980	1990	% Change
US	2.74	2.63	-4.0%
Oregon	2.59	2.51	-3.1%
Marion County	2.62	2.59	-1.1%
Salem	2.38	2.40	0.8%
Keizer	2.67	2.60	-2.6%

Source: U.S. Department of Commerce, Bureau of the Census. 1980 and 1990. *Census of Population and Housing*, STF-3A.

The Salem-Keizer MSA (which is much larger than either the city limits or the UGB) had about 2.6 persons per occupied dwelling in 1990 (we assume persons per occupied dwelling is the same as persons per household, which is the same as household size).[9] Cutting back to just the city limits, the average household size for Salem in 1990 was 2.40 persons, and for Keizer was 2.60 persons, with a weighted average of 2.43 for area within the Salem-Keizer city limits. Neither of these figures (for the MSA or for the city limits) is an estimate of the geographic region this study is interested in: the Salem-Keizer UGB. They do, however provide an upper (2.60) and lower (2.43) bound on persons per occupied household. The actual value in 1997 is probably weighted closer to the low end because of smaller household sizes and large share of households in Salem.

We think our assumption in the March memo—that the overall average of persons per household will be 2.4 in 2050—is consistent with the data above. There are reasons to believe it could be higher (people have suggested that the types of families moving to Salem have higher than average household sizes) or lower (the long run trends nationally have been, and are forecasted to continue, dropping). At 2.4 in 2050, that is only about a 2% decline from the current average. It would not be unreasonable to assume that the 2050 average could be 2.35, which would increase slightly the number of new dwelling units needed.

Table 11 shows the age distribution of population within the city limits of Salem and Keizer in 1980, 1990, and 2000. It shows the movement of the baby boom through the population, with the largest increase in the 35–49 age group between 1980 and 1990. This trend continued in the 1990s with an increase in the share of population aged 50–64, as people in the leading edge of the baby boom are now in their early 50s.

[9] According to the 1990 U.S. Census, STF-3A, the Salem-Keizer MSA had 264,070 persons in households and 101,661 occupied dwelling units for an average of 2.59 persons per household.

Table 11. Distribution of population by age group, 1980 & 1990

Age Group	1980	1990	2000
Under 20	29%	29%	30%
20–34	30%	24%	19%
35–49	15%	22%	23%
50–64	13%	11%	15%
65+	13%	14%	13%
Total	100%	100%	100%

Source: 1980 from U.S. Census; 1990 and 2000 from Claritas.
Note: data represents area within the city limits of Salem and Keizer.

Older population groups are expected to have an increasing share of total population through 2040. Forecasts of population by age have not been developed for the Salem-Keizer area. Table 12 shows the share of total population by age group in Oregon through 2040, from the State's long-term forecast. Population is expected to continue to age, with growth in the share of the population in the 50–64 and 65+ age groups as the baby boom generation ages. Table 12 shows population in Oregon aged 65+ is expected to grow by 8.5% between 2000 and 2040, while the share in other age groups is expected to grow slightly or decline.

Table 12. Share of total population by age group in Oregon, 2000–2040

	Age Group					
Year	Under 19	20–34	35–49	50–64	65+	Total
2000	26.8%	20.2%	23.4%	16.2%	13.4%	100.0%
2010	24.8%	19.6%	19.3%	20.2%	16.1%	100.0%
2020	24.7%	18.8%	19.3%	18.6%	18.6%	100.0%
2030	24.4%	18.0%	19.0%	17.1%	21.5%	100.0%
2040	24.5%	18.2%	17.9%	17.5%	21.9%	100.0%
Change	-2.3%	-2.0%	-5.5%	1.3%	8.5%	

Source: State of Oregon, Department of Administrative Services. 1997. *Long-Term Population and Employment Forecasts for Oregon*. Salem: Office of Economic Analysis.

Table 13 shows measures of income levels within the city limits of Salem and Keizer over the 1979–2005 period, in constant year 2000 dollars. Per capita and average household income have increased between 1979 and 2000 and are expected to continue this trend through 2005. Median household income also grew between 1979 and 2000, but is expected to decline slightly by 2005. Median household income also grew more slowly than per capita or average household income. These trends suggest income for high-income households has grown faster than for lower-income households, which could increase the average household income but decrease the median household income measure as shown in Table 13.

Table 13. Income levels in Salem-Keizer, 1979–2005 (2000 dollars)

Income	1979	1989	2000	2005	AAGR 89-00	AAGR 00-05
Per Capita	$15,885	$16,281	$20,393	$21,350	2.1%	0.9%
Average Household	$40,611	$41,629	$52,589	$55,053	2.1%	0.9%
Median Household	$33,807	$33,890	$40,158	$39,276	1.6%	-0.4%

Source: Claritas. Dollars converted to 2000 dollars using the Personal Consumption Expenditure Price Index reported in the Economic Report of the President 2000, and by assuming an annual inflation rate of 3% through 2005.

Age and income are not explicit assumptions in the model of residential demand. However, consumer preferences for housing are correlated with lifecycle, socioeconomic, and demographic characteristics, primarily household size, income, and the age of household head. The model of residential demand includes an assumption for average household size. The assumptions for housing type mix and density imply assumptions about trends in age and income and their effect on housing preference. The household size, age, and income trends in this section imply the following trends in housing preference:

- Declining household size, driven by larger numbers of single adult single-parent households and fewer children in family households, suggests increased demand for smaller single-family homes and more multi-family units.

- Aging population suggests an increased share of empty-nest and single adult households who will demand smaller housing units, and an increased demand for assisted living and nursing home units.

- Income growth for high-income households suggests continued demand for large single-family homes, while stagnant or declining income for lower-income households suggests these households will look for smaller housing units on smaller lots or in multi-family developments, and continued demand for affordable housing.

The correlation between consumer preferences for housing and lifecycle, socioeconomic, and demographic characteristics is described in Appendix B.

National housing trends

We reviewed overviews of the national real estate market, national-level construction data, and prominent urban planning journals to identify long-run trends that may affect the real estate market in the mid-Willamette Valley. This section summarizes the discussion of housing markets in Appendix B.

The report *Emerging Trends in Real Estate 1999*, published by Pricewaterhouse Coopers and Lend Lease Real Estate Investments, is based on interviews with 150 leading commercial real estate investors, and describes conditions that may affect commercial real estate markets in the coming year.[10] This report describes several long-run national trends that will affect the real estate market:

[10] A copy of this report can be found at http://www.lendleaserei.com.

- *Cities should continue to benefit from demographic trends*. Both Generation Xers and aging baby boomers are migrating back to urban cores—young people for excitement and empty nesters for convenience and amenities.

- *Demand for senior housing will increase*. An aging population will increase demand for independent living residences and assisted-living centers.

- *People want to live closer to where they work and play*. Hectic lifestyles demand convenience.

- *Lifestyle trends will encourage redevelopment of obsolete or underutilized space in desirable core city or inner-ring suburban areas*. Local governments should encourage this activity with tax and other incentives, fostering environments that meld residential seamlessly with commercial uses.

- *Investors see fast-growing Sunbelt markets with limited growth controls as chancier investment plays in the current real-estate cycle*. Fewer barriers to new construction leads to greater overbuilding risk, which makes these markets more volatile.

The Joint Center for Housing Studies of Harvard University analyzes the ways in which housing policy and practices are shaped by economic and demographic trends. *The State of the Nation's Housing* is the Center's annual report that identifies and analyzes demographic, economic and social trends that affect housing.[11]

According to the Center, the important demographic trends that will shape housing demand over the next decade are the increasing diversity of the population, the aging of the baby boomers, the higher propensity of people to live alone, and the growth in the elderly population. Specifically:

- Migration usually has a bigger effect on the rate and composition of local population growth than natural increase. Most of these mobile households are young adults, although the elderly also make up a substantial share. Young adult households and the elderly will continue to migrate on net to the South and West from the Northeast and Midwest.

- States that traditionally attract retirees—Arizona, Utah, Nevada, New Mexico, Colorado, Washington, Oregon, Georgia, North Carolina, and South Carolina—will see especially fast growth in their over-65 populations.

- Baby boomers now reaching their 50s have moved, or are about to move, into the "empty nest" stage of life when their children leave home. As a result, couples without children under the age of 18 will be the fastest-growing family type in the years ahead.

- The number of people living alone will increase, particularly single-person households age 65 and over.

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[11] A copy of the annual report can be found on-line at http://www.gsd.harvard.edu/jcenter/Publications.

- Married couples with children under the age of 18 will decrease in number, both because fewer women will be in their late 20s and early 30s, and because the last of the baby boomers will be leaving their childbearing years.

- With the over-85 population growing by 1.3 million during the first decade of the 21st century, housing suited to the health-related needs of the frail elderly will be increasingly in demand.

- An overwhelming majority of seniors want to remain in their existing home. Households with a disabled senior will need structural modifications to their homes to make them function safely and comfortably, such as handrails, ramps, and modifications to the bathroom and kitchen. An aging population will increase demand for home modifications in the future, and demand for these features in new residential construction.

These demographic trends have important implications for housing markets at the national level. Although it is difficult to predict how housing demand will sort itself out by structure type, the age and regional distribution of the population suggest gains in the multi-family and manufactured housing shares. With demand for multi-family and manufactured housing strengthening, the share of traditional, stick-built, single-family housing is likely to decrease slightly in the years ahead (though it will still account for the 40% to 60% of all new construction in most housing markets). [this is where I think our methodolgy means you need to re-word this. What we're trying to figure out is how our SUPPLY of housing matches DEMAND. I know they're interactive, but we don't have the sophistication to model the interactive effect…so I want to keep them separate. I would like you to tell us what you think the DEMAND will be, we'll then compare it to supply to identify the gap, which becomes a critical number for the overall planning process.]As noted earlier, that share will be higher if one counts manufactured housing as single-family housing.

According to the Center, household growth should average close to 1.1 to 1.2 million annually over the next decade—about the same as in the 1990s. Because the number of households is the primary determinant of housing demand, the expected level of household growth should translate into residential construction rates that are roughly comparable to today's rates.

A review of data from the U.S Bureau of Census *Current Construction Reports* shows several shifts in the characteristics of new housing in the U.S.:

- *Larger single-family units on smaller lots*. Between 1987 and 1997 the median size of new single family dwellings increased 13% while median lot size decreased 2%.

- *Larger multi-family units*. Between 1987 and 1997, the median size of new multiple family dwelling units increased 15%.

- *More household amenities*. Between 1987 and 1997 an increasing share of single family and multifamily units were built with amenities such as central air conditioning, fireplaces, brick exteriors, 2 or more car garages, or 2 or more baths.

These national trends are consistent with our observations in the Northwest housing markets that we have evaluated over the last 10 years.

There has been a national movement over the past 15 years promoting higher-density housing in mixed-use development patterns as an alternative to typical suburban development and the problems those patterns are alleged to generate. This alternative development pattern is known by a variety of names: neo-traditional development, new urbanism, transit-oriented development, and traditional neighborhood development. While the different names refer to differences in design and setting, these developments share some common characteristics:

- Higher-density housing—smaller buildings on smaller lots than typical development, with a larger share of multi-family housing
- Narrow streets that link residential areas to mixed-use commercial centers
- Emphasis on walkability and alternatives to the automobile
- Traditional design
- Transit orientation
- Mixed-use commercial centers.

In the 1990s this type of development has moved from concept to reality with the construction of numerous projects around the nation. These projects range in scale from single buildings to entire communities, and occur in a variety of settings: urban infill, suburban subdivisions, transit rail stations, and ex-urban greenfields. The *New Urban News* tracks the number of traditional neighborhood developments—large-scale developments with residential areas and a commercial center—that are planned, under construction, or built in the United States. Its last survey included almost 100 projects built or under construction, and another 100 projects in the planning phase.[12] Oregon has several examples of these types of projects, primarily in the Portland area (e.g., Fairview, Orenco Station, Sunnyside).

Residential land supply

Fregonese Calthorpe Associates recently inventoried the amount of vacant land in the Salem Urban Growth Boundary and land on which development may be constrained by environmental conditions. Table 14 shows the acres of vacant land in the Salem UGB by constraint status.

[12] Steuteville, Robert. 1998. "Year of growth for New Urbanism." *New Urban News* 3 (5): 1-7.

Table 14. Acres of vacant residential land in the Salem UGB by constraint, 2000

Constraint Status	Single-Family		Multi-Family	
Unconstrained	1,906.6	48%	527.1	72%
Steep Slope	1,919.9	48%	146.6	20%
8-12%	633.6	16%	77.6	11%
12-18%	634.4	16%	39.4	5%
18-25%	350.6	9%	19.3	3%
25%+	301.3	8%	10.3	1%
Floodplain	77.3	2%	40.4	6%
Riparian Areas	54.8	1%	9.7	1%
Wetland	23.5	1%	7.8	1%
Open Water	2.8	0%	2.8	0%
Total	3,984.9	100%	734.4	100%

Source: Fregonese Calthorpe Associates. 2000. *Salem Futures Constrained Lands Analysis*. August 11.

Table 14 shows 52% of single-family land and 28% of multi-family land is affected by an environmental condition that could limit development (the inventory did not double-count land affected by multiple constraints). To put these numbers in context, given the average densities reported elsewhere in this memorandum, unconstrained vacant single-family land might accommodate on the order of 8,000 new dwelling units (at 4.2 dwelling units per gross residential acre); constrained land might accommodate another 2,000 (at about 1.0 dwelling unit per gross residential acre), for a total capacity of about 10,000 single-family dwelling units. For multi-family units, unconstrained vacant multi-family land might accommodate on the order of 8,000 new dwelling units (at 15.0 dwelling units per gross residential acre); constrained land might accommodate another 1,000 (at 5.0 dwelling units per gross residential acre), for a total capacity of about 9,000 multi-family dwelling units. Lands currently zoned for residential development will accommodate 53% of the new units on single-family zoned parcels and 47% of the new units on multiplefamily zoned parcels. That accounts for on the order of 1/4 to 1/3 of the total residential land demand implied by the forecast of population growth to 2050. In other words, there is a good argument to be made that for the 2050 population forecasts to be realized, land has to be added to the UGB and services have to be provided at reasonable costs. If that does not occur, then the population (and employment) forecasts are probably too high.

Industry factors

Housing markets do a relatively good job of meeting many of economists' requirements for efficient markets: there are many well-informed buyers and sellers. The question this section addresses is whether the characteristics of the real estate market in the Salem-Keizer area is such that it systematically fails to provide certain types of housing.

Well-informed buyers and sellers are critical for efficient market conditions. Focus group participants[13] identified a lack of buyer knowledge as a barrier to providing alternative housing. A participant noted that buyer knowledge of alternatives is limited to examples,

[13] Salem Futures Developer Focus Group, 18 August 2000.

and most of the examples are traditional housing types. While the Northwest is ahead of other regions in terms of acceptance of smaller lot size, buyers still need more good examples of other ways to live.

A common concern often heard is that developers and builders are not educated about alternative housing types. Our experience is that what is often identified as a lack of education is really an economic decision about risk. Developers and builders know that smaller houses can be built on smaller lots, and that they can provide more amenity in subdivisions that might be more than offset by higher housing prices. But they can also observe what kind of houses are currently selling and feel relatively confident that if they build more of the same, theirs will sell also. Building a different housing type has potential economic rewards, but it also has risks.

Traditional housing types also have less perceived risk to buyers who are more confident that traditional housing will grow in value over time because they can observe a market for those housing types. There may little or no market for alternative housing types because these types don't exist in the market, so buyers are less confident of the future value of their investment or that they can find a buyer. Buyers may perceive more risk with housing types that involve common areas, homeowner associations, or similar arrangements, in part because of the problems associated with some condominium and mobile home developments. Buyers also have more experience with traditional housing types, so they can better assess how well this housing will fit their needs.

Banks also favor traditional housing types because they offer less perceived risk. A focus group participant identified a lack of banks willing to lend on medium- or high-density housing as a barrier to development.

Evidence of buyer preference for larger housing was offered at the Developer Focus Group. The Vineyards and Highlands are two developments with the same housing design, and buyers were willing to spend $10,000 to $15,000 more for lots that were ten feet deeper (lots 500 to 1,000 sq. ft. larger).[14] While an aging population may create demand for smaller housing units, buyers at McNary Estates, a development of retirement estates, shows some retirees want space.

Focus group participants pointed out that demographic and lifestyle shifts should provide more demand for developments that offer convenience and walkability. However, this is a niche market and the developments must be in neighborhoods where people want to be and where they have a place to walk to.

Thus, the composition of housing that gets built each year changes slowly. A few builders will push the envelop, they will have success, and others will then have the evidence they need to risk following. Increased public awareness regarding environmental constraints and public service costs should support a continued shift in the future.

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[14] We did not check this statement. It is not what we would have predicted based on other research: namely, that marginal value of lot size should be less than the average value. Those numbers suggest marginal values of $10 to $20 per square foot, while average residential land values are on the order of $5 a square foot.

Public policy factors

Policies relating to public infrastructure and services can clearly have big impacts on the location, rate, type, and cost of development. The long-range housing forecast for the Salem-Keizer UGB implicitly assumes that public infrastructure and services will be provided to accommodate the forecast level of population growth. The population forecast used in the housing forecast implicitly assumed that things like land supply, water supply, congestion, and housing prices would be no bigger problems in the future than they have been in the past. At the cursory level of our analysis, there are no obvious problems with major public facilities—roads, water, and sewer—that would preclude development. For the purposes of our long-run forecasts, there is not reason to adjust those forecasts based on service constraints. A caveat on that assumption relates to issues like that might aim to reduce the amount or rate of growth. Such policies, if they become common, could have the effect of reducing buildable land supply and, ultimately, reducing growth from what the baseline population forecast predicts.

Participants in the Developer Focus Group identified a range of public policy barriers to providing a broader range of housing types. Some of the barriers identified by participants could limit development in general—these are the kind of problems the long-run forecast assumes will be addressed to accommodate the forecast population. Other barriers are issues that may affect the range of housing types provided in the market. Salem may need to address these issues to facilitate and encourage a broader range of housing types:

- Service capacity is constrained for water (specifically Santiam Trunk Line) and at the city's sewage treatment facility.

- Limited land supply combined with SDCs and infrastructure requirements is making housing unaffordable. Some focus group participants think annexation fees will make land already annexed even more valuable, and that the market can't meet current needs with existing land supply conditions.

- There is resistance to projects that create more density in existing neighborhoods. Focus group participants said this resistance can be overcome with good planning, attractive design, and city leadership in the form of policies that support flexible planning and cooperation between developers and city staff.

- Planning policies discourage alternative types of housing through standards for street widths, setbacks, and other elements of residential developments. One focus group participant said that the City went from flexible street size to standards in 1970, and now there is certainty that variances will not be granted for narrower streets. Participants felt that policies should encourage higher-density housing on redeveloped and vacant sites and housing downtown.

- Some focus group participants felt that the supply of industrial land will limit the employment base needed to support higher-density housing.

- New rules and limitations regarding public right-of-way and siting could limit future mobile home park developments.

- The relatively small scale of most housing producers limits the possibilities for risk taking, multi-use, and large scale.

Assessment of housing mix and density

Table 15 summarizes focus group participant responses on housing mix and increased density from surveys handed out at the meeting. Their opinions reflect, among other things, their evaluation of a lot of the information already presented in this memorandum, some of which was made available to them in draft format at the meeting. The survey asked participants to provide their opinion on the mix of *new* housing in the Salem area between 2000 and 2050, and how much they think residential density (dwelling units per acre) will increase in Salem over the next 50 years.

Table 15. Focus group participant responses on housing mix and increased density

	Responses							Average
Housing Mix								
Single-family	65%	65%	69%	55%	58%	58%	65%	62%
Multi-family	30%	30%	25%	40%	37%	37%	30%	33%
Manufactured	5%	5%	6%	5%	5%	5%	5%	5%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Increased Density	5%	To 7 units per acre	7%	To 8 units per acre	7%	10%	10%	8%

Source: ECONorthwest.
Note: densities reported are gross residential acres

There was a wide range of responses for the share of single-family and multi-family housing over the next 50 years; the share of single-family ranged from 55% to 69%, and the share of multi-family ranged from 25% to 40%. The range of responses for manufactured housing has much less variation, with most respondents indicating a 5% share for manufactured housing over the next 50 years.

The respondent who indicated single-family units will be 69% of new housing units over the next 50 years commented that trends in the last 10 years have skewed away from the real trend—the real trend is presumably for a larger share of single-family housing. The respondent who indicated that multi-family housing will be 40% of new housing units over the next 50 years commented that changing demographics and demonstration of alternative multi-family housing choices will attract more people to multi-family units.

Opinions on the increase in residential density in Salem over the next 50 years ranged from 5% to 10%, with two respondents stating the increase in terms of units per acre. The respondent who indicated density will increase to 8 units per acre commented that density will increase because of the attractiveness of multi-family developments and the appeal of transit and pedestrian access. A respondent who indicated density will increase by 10% commented that density will increase because decisionmakers will not want to "break" the UGB. Another respondent indicating a 10% increase commented the increase will be due to alternative housing such as planned senior communities, mixed use developments, and downtown housing potential.

In its March memorandum, ECO assumed a 60% single-family/40% multiple family housing split in the initial 2050 simulation. The data reviewed in this memorandum, as well as the

comments provided during the developer focus group suggest that a reasonable range for the single-family percent is 60% to 65% (the lower number would be consistent with the belief that a combination of demographic shift, cost, regulation, and incentives will increase the amount of multi-family development). We retained the earlier assumption of 60% single-family housing for the base simulation, but also tested the effect of assuming 65% single-family housing.

All of the focus group participants agreed that overall residential densities would increase over the next 50 years. Assessment and subdivision data suggest that residential densities may have dropped somewhat in the recent past. Other factors, however, point to increased densities in the future. Demographic trends suggest that smaller households will demand smaller dwelling units on less land. Public policy is trending toward encouraging or requiring more higher density development. The initial simulation assumed an overall residential density of 7.3 dwelling units per net acre (6.4 dwelling units per gross acre) for all *new* development between 1997 and 2050. Some focus group participants felt this was a reasonable assumption, others felt it was too aggressive. Given the various data reviewed, we made minor adjustments to the allocation of dwelling units by lot size and type. We also made minor adjustments to the density by housing type assumptions. Changes to both the allocation and density assumptions are summarized in Table 16 in the next section.

SIMULATIONS: POSSIBLE FUTURES FOR HOUSING DEVELOPMENT

Methods for housing market simulations

Many techniques exist to forecast population and employment. To address the complexities of housing demand and land need, ECONorthwest developed a land demand simulation. The basic model is shown in the box shown at left. The method begins with a population forecast. Persons in group quarters are then subtracted to estimate persons in dwelling units. The assumption about persons per occupied dwelling unit is applied to forecast new occupied dwelling units. This figure is increased by a vacancy factor to get dwelling units needed to house new people. The final step is to estimate additional units needed to accommodate the decreased size of households that existed in 1997.

Method for Calculating Needed Dwelling Units

2050 population
- 1997 population
= population increase 1997-2050
- persons in group quarters
= persons in new dwelling units
÷ persons per dwelling unit
= occupied dwelling units
- demolitions
+ vacant dwelling units
+ additional units needed to accommodate decreased household size of existing households
= Total needed dwelling units

The next step is to allocate housing units by type. We began by applying a single family/multi-family split. Once the single family/multi-family split assumption was applied, we further broke housing down by type and lot size. Finally, we applied density assumptions are applied to derive needed acres.

Implications of the analysis for simulations

Table 16 compares assumptions in the long-range housing forecast to housing and demographic characteristics in Salem-Keizer reported in this section. The key areas where we made modifications to the assumptions were in the distribution of single-family lot sizes, and in the densities. The data and developer focus group generally support the other

assumptions used in the initial simulation of the March memorandum. The key changes include:

- *Housing mix.* We stayed at a 60/40 SF/MF split, but also showed a more conservative 65/35 split.

- *Distribution of single-family lot sizes.* The new assumptions allocate more single-family dwelling units to lots in the 5,000-9,999 sq. ft. classification and fewer to the lot sizes over 10,000 sq. ft. We made this change for two reasons: (1) our analysis of assessment data indicates that we underestimated the amount of development on smaller lots, and (2) demographic trends suggest a shift towards smaller dwellings and lot sizes. The original and revised assumptions are shown in Table 15.

- *Density.* The new assumptions increase density for single-family dwellings on lots under 5,000 sq. ft. and decrease densities for single-family dwellings on lots greater than 20,000 sq. ft., and for three of the four multiple-family housing types. We increased the density on single-family lots under 5,000 sq. ft. because our analysis of assessment data indicated higher densities than we originally assumed. We decreased the densities on multiple-family housing types slightly as a result of comments made during the focus group meeting.

Table 16. Comparison of housing and demographic characteristics to long-range forecast assumptions

Dwelling Unit by Type	1990-99	All Time Periods	Previous Assumption	New Assumption
Single-family by lot size				
<5,000			8%	8%
5,000-9,999			33%	37%
10,000-19,999			15%	12%
20,000 or more			4%	3%
Total single-family	59%	60%-65%	60%	60%
Multi-family by type				
Duplex	5%	5%	6%	6%
Row House			3%	3%
Gardent Apt			27%	27%
Mid-rise			4%	4%
Total multi-family	41%	40%-45%	40%	40%
Total all units	100%	100%	100%	100%

Net Density (DU/net residential acre)	1990s	All Time Periods	Previous Assumption	New Assumption
Single-family by lot size				
<5,000	11.0	11.5	10.0	11.5
5,000-9,999	6.3	6.0	6.5	6.5
10,000-19,999	3.5	3.5	4.0	4.0
20,000 or more	0.5	0.6	2.0	1.8
Total single-family	4.2	3.5	5.2	5.9
Multi-family by type				
Duplex	9.4	6.1	9.0	9.0
Row House	n/c	n/c	13.5	12.0
Garden Apt	n/c	n/c	19.6	18.0
Mid-rise	n/c	n/c	26.0	25.0
Total multi-family	10.1	12.9	15.8	14.7
Total all units	4.5	5.1	7.3	7.8

Vacancy	1980	1990	Previous Assumption	New Assumption
Vacant Units	8%	4%	5%	5%

Household Size	1980	1990	Previous Assumption	New Assumption
Average Household Size in 2050 (all households)	2.5	2.4	2.4	2.4

Redevelopment	1980	1990	Previous Assumption	New Assumption
Percent of new units on redeveloped land	n/a	n/a	5%	5%

Source: Summarized from data presented in this report; see sources in tables for each characteristic. Previous Assumptions from the Transitional Analysis completed in April by ECONorthwest. Assumptions by ECONorthwest.

Results of housing market simulations

Table 17 shows a summary of the results for the base scenario. The results show that Salem will add about 68,000 new dwelling units. Total land need in gross acres is about 10,500 for all residential uses.

Table 17. Estimated new dwelling units and land need, Salem UGB, 1997-2050

	1997-2050		
Housing type	New DU needed	Land Need (Net Acres)	Land Need (Gross Acres)
Single-family by lot size			
<5000	5,433	433	528
5000-9999	25,129	3,544	4,219
10000-19999	8,150	1,868	2,172
20,000+	2,037	1,038	1,153
Total/Average Single Family	40,749	6,882	8,072
Multiple family	-		
Duplex	4,075	453	552
Row House	2,037	170	197
Garden Apt	18,337	1,113	1,205
Mid-rise	2,717	109	114
Total/Average Multiple Family	27,166	1,844	2,069
TOTAL/AVERAGE ALL TYPES	**67,916**	**8,726**	**10,141**

Source: ECONorthwest, 2000

To demonstrate the affect of changes in selected assumptions on demand for new housing and land need, ECO conducted a sensitivity analysis. The results are shown in Table 18. The results show that increasing density has the largest impact on land need. Increasing the residential redevelopment rate from 5% to 10% resulted in a 7% decrease in total land need. Note that new dwelling units on redeveloped land are included in the Garden Apartment housing type. Redevelopment results in a lower total land need, and a lower land need for single-family dwelling units. The new units allocated to the garden apartment housing type consume more multiple-family land overall because they are assumed to only yield a net density *increase* of 12 dwelling units per net residential acre.

TM: I didn't address the following.

[The punch line of this report is NOT supposed to be land need…but whether current zoning practices will yield the housing stock that future residents will want. All the data to reach conclusions about this are available here, but they are not presented in the right way at the end of the report. I don't think it will take much to re-configure the informationt to answer this question.]

Table 18. Sensitivity analysis

	Base Results	Increase single family to 65% from 60%	Increase residential density from 6.7 to 7.5 DU/GRA	Increase residential redev from 5% to 10%	Decrease in Persons /DU of .05 (from 2.4 to 2.35)
Land need (gross acres)					
Residential (gross acres)					
Single-family	8,072	8,702	7,005	7,338	8,405
Multiple family	2,069	1,860	1,882	2,143	2,155
Total	10,141	10,562	8,887	9,481	10,560
Change from Base Case					
Residential (gross acres)					
Single-family	8,072	7%	-15%	-10%	4%
Multiple family	2,069	-11%	-10%	3%	4%
Total	10,141	4%	-14%	-7%	4%

Source: ECONorthwest, 2000