

# EUGENE CITY COUNCIL AGENDA ITEM SUMMARY



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## Work Session: Eugene Comprehensive Lands Assessment

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Meeting Date: November 9, 2009  
Department: Planning and Development  
*www.eugene-or.gov*

Agenda Item Number: C  
Staff Contact: Jason Dedrick  
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### **ISSUE STATEMENT**

This work session provides the council with an opportunity to discuss and provide feedback on the technical products that were presented at the October 28, 2009, council work session.

### **BACKGROUND**

The goal of the Eugene Comprehensive Lands Assessment (ECLA) is to determine whether Eugene has a sufficient supply of land within the Urban Growth Boundary (UGB) to meet the projected demand for residential, commercial, industrial, and public/semi-public land over the next 20 years.

In December of this year, the City Council will consider a resolution that accepts the draft ECLA supply and demand estimates. This resolution is intended to fulfill the requirements of House Bill 3337. As a result of the motion approved at the October 28, work session, this information will be finalized by April 2010. Additionally, staff will proceed with a work schedule to adopt a Eugene-only Urban Growth Boundary by the end of February, 2011.

### Technical Products

The current work session is an opportunity for the council to provide feedback on the following technical products:

- The Capacity Analysis - which provides refined data resulting in an identified land need for a 20-year period (Attachment B).
- The Baseline and Variations to Baseline Assumptions Analysis - which presents different estimates of land needs for Eugene over the 20-year period for the baseline assumptions and for variations of those assumptions (Attachment A).

While Attachment A (not the appendices) is most relevant to the work session discussion, the appendices in Attachment A, as well as Attachments B and C contain all of the source data.

### Next Steps

On December 9, 2009, staff will present the council with draft supply and demand estimates for the council's consideration. The council's acceptance of this information will constitute the City of Eugene's compliance with HB 3337. The draft data will be based on recommendations from the reconvened ECLA Community Advisory Committee (CAC). Additionally, staff and consultants will be available to meet with councilors and CAC members on an individual basis to further discuss outstanding concerns prior to the December 9 work session.



## **RELATED CITY POLICIES**

- The City Council has included ECLA as a priority item on the Planning Division Work Program.
- Growth Management Policies are related to ECLA, most notably policies 1, 2, and 5.
  - Policy 1 – Support the existing Eugene Urban Growth Boundary by taking actions to increase density and use existing vacant land and under-used land within the boundary more efficiently.
  - Policy 2 – Encourage in-fill, mixed-use, redevelopment, and higher density development.
  - Policy 5 – Work cooperatively with Metro area partners (Springfield and Lane County) and other nearby cities to avoid urban sprawl and preserve the rural character in areas outside the urban growth boundaries.

## **COUNCIL OPTIONS**

No formal action is required at this time.

## **CITY MANAGER'S RECOMMENDATION**

No action is required on this item at this time. Therefore, no recommendations are offered by the City Manager at this time.

## **SUGGESTED MOTION**

No action is required on this item at this time. Therefore, no motions are offered by the City Manager at this time.

## **ATTACHMENTS**

- A. Baseline and Variations to the Baseline Assumptions Analysis
- B. Capacity Analysis
- C. Description of Baseline Assumption Variables

## **FOR MORE INFORMATION**

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October 16, 2009

**TO: Eugene City Council**  
**CC: Jason Dedrick**  
**FROM: Bob Parker, Terry Moore, and Beth Goodman,**  
**SUBJECT: SUMMARY OF LAND SUFFICIENCY IN THE EUGENE UGB UNDER**  
**BASELINE ASSUMPTIONS AND VARIATIONS TO THE BASELINE**  
**ASSUMPTIONS**

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The City of Eugene is conducting an assessment of land within its Urban Growth Boundary (UGB). Over the past 16 months, City staff and consultants have worked with stakeholders (including a CAC, TAC, and City Council) to develop baseline assumptions about Eugene's future growth. The rationale for these assumptions is described in detail in the memorandum titled "ECLA Baseline Assumptions."

These assumptions are largely based on historical data about development in Eugene. Future development, however, may be different from past development as a result of multiple factors, including changes in market conditions or in public policy. This memorandum examines how Eugene's future may be different from the past by discussing potential changes to the baseline assumptions. This memorandum is organized as follows:

- **1 Defining and specifying variations** provides an overview of the analysis and the variations to the baseline analysis.
- **2 Results** summarizes the findings of ECO's analysis of the ability of vacant residential land in Eugene to accommodate expected growth over the 20 year period.
- **3 Interpretation** discusses a few issues that affect, or could affect, the results.
- **Appendix A: Summary of Land Need Under the Baseline Assumptions**
- **Appendix B: Summary of Variation 1: Increased density on vacant land**
- **Appendix C: Summary of Variation 2: Variation 1, plus increased redevelopment**
- **Appendix D: Summary of Variation 3: Increased density and redevelopment for some types of growth**

## DEFINING AND SPECIFYING VARIATIONS

The Eugene Comprehensive Lands Assessment intends to evaluate the sufficiency of land within the UGB to accommodate 20-year forecasts of housing, employment, and public and semi-public uses. Like all land needs studies, it includes a *supply* analysis (estimates of the amount of buildable land by type) and a *demand* analysis (forecasts of population and employment growth, which lead to demand for more built space: residential and non-residential development). The comparison of supply and demand is central to the requirements for a determination of land sufficiency.

Developing a demand analysis to evaluate the sufficiency of land within the UGB requires making many assumptions about future growth. The State process for evaluating the sufficiency of land within a UGB (i.e., its ability to accommodate 20 years of growth) requires that these estimates be point estimates: there must be a single, best-estimate of land supply and of land demand that, when compared, give a single estimate of the amount of land that is in surplus or deficit within the UGB.

For land supply, that requirement is less of a problem because no forecast is being made. One is trying to establish how much vacant land is there *now*, and data and field work allow that to be done with tolerable accuracy. The main assumptions that might affect the supply that are matters of judgment are ones about “buildability.” For example, should land in parking lots, with steep slopes, on a developed parcel, and so on be counted as buildable? These issues were addressed in the Buildable Lands Inventory and a single estimate for the total amount of buildable land was developed. We do not vary the land supply estimates as part of these variations.

Most of the assumptions used in the demand analysis have a reasonable range of potential values. The future is uncertain: all manner of national, state, and local market conditions could change the presumed baseline amount and type of employment growth, household incomes and preferences and, hence, housing mix and density or the land need of employers that grow or locate in Eugene.

For example, housing vacancies in Eugene has varied between 3.5% and 6.5% over the last 15 years, depending on when the vacancy rate was measured and the state of the housing market. The demand analysis could reasonably use any value between 3.5% and 6.5% as its estimate future housing vacancy. But the state process for the development and review of local planning for growth requires, ultimately, selecting one vacancy rate as a best estimate of the average future vacancy rates. In the baseline analysis, we use a vacancy rate of 5%. It is likely that over the next 20 years the actual vacancy rate will be something other than 5%, but most likely it will be between 3.5% and 6.5%.<sup>1</sup>

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<sup>1</sup> Likelihood can be defined statistically using confidence intervals. State planning has never required and probably rarely if ever seen that level of analysis. Thus, “likely” is not explicitly defined. Qualitatively, we use it to

The “ECLA Baseline Assumptions” memorandum describes the key assumptions required for the demand analysis and our judgments (reviewed by the Technical Advisory Committee (TAC) and Community Advisory Committee (CAC)) about a reasonable range for each assumption in detail. The purpose of this memorandum is to present variations on the baseline analysis by varying the assumptions: (1) within the range allowed by current policies and (2) that have a large potential impact on future land need.

Table 1 shows the baseline assumptions (highlighted in green) and three variations to the baseline analysis. The assumptions that have been varied are shown in red. In broad terms, **the three variations all make assumptions that will have the effect of reducing the need for buildable land.** In other words, all of them assume that if the historical trends (i.e., the baseline assumptions) change, it will be in the direction of more density and less land need. That is our interpretation of the general direction that the CAC wanted has indicated.<sup>2</sup> Given that some of the historical values in Eugene for the intensity of certain types of development are lower than what the State wants to see, it seems likely that the baseline is the lower bound on the amount of density that Eugene should base its planning on. Because the Variations generally build on one another, Variation 3 has the greatest number of assumptions that reduce land need, and could be considered an upper bound on likely future density without strong policy changes.

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mean “more likely to be in that range than to be outside of that range.” The vacancy rate is more likely yet to be in the range of 2% to 15%. It is unlikely to be less than 2% (even in the best of economic times some “frictional” vacancy exists as people move around), and if it averages greater than 15% for the 20-year period, then the population and employment forecasts that are the basis for all the demand analysis are not very likely.

<sup>2</sup> Opinions in the CAC on a few key assumptions were divided. For example, some CAC members thought that the residential redevelopment rate should increase, while others that higher redevelopment rates would be difficult to achieve under current policies. In addition, some CAC members were concerned about household size around the University (indicating they would like it to decrease) and others took a broader view of household size and expressed the opinion that household size would average out across the City.



**Table 1. Variations from the baseline analysis**

Variable	Baseline Assumptions	Reasonable Range	Variations to the Baseline Analysis		
			Variation 1	Variation 2	Variation 3
<b>Employment Land Needs</b>					
Employment growth	1.4%	0.9% to 2.1%	1.4%	1.4%	1.4%
Share of Emp by Type					
Industrial	18%	15% - 23%	18%	18%	18%
Commercial	54%	46% - 55%	54%	54%	54%
Retail	13%	13% - 15%	13%	13%	13%
New Employment in Non-employment PD	15%	10% - 20%	15%	15%	20%
New Employment in Existing Built Space	10%	5% - 20%	20%	20%	20%
Employment Redevelopment		10% to 50%			
Industrial	10%		10%	15%	15%
Commercial	15%		15%	20%	25%
Retail	35%		35%	40%	50%
Employment Density		Varies			
Industrial	13 EPA	5-20 EPA	14	14	16
Commercial	68 EPA	30-93 EPA	75	75	85
Retail	23 EPA	20-37 EPA	25	25	30
Net to Gross for Right-of-Way	20% (15%)	15% - 20%	20% (15%)	20% (15%)	15%
<b>Residential Land Needs</b>					
Population Growth	0.9%	None	0.9%	0.9%	0.9%
Population in Group Quarters	5.3%	4.4% - 5.5%	5.3%	5.3%	5.3%
Persons per Household	2.25	Difficult to estimate	2.25	2.25	2.25
Residential Vacancy Rate	5%	3.5% - 6.5%	5.0%	5.0%	5.0%
Housing mix					
Single-family detached	61%	45% - 69%	50%	50%	50%
Single-family attached	7%	7% - 10%	10%	10%	10%
Two to five units	10%	6% to 10%	10%	10%	10%
Five or more units	22%	18% to 35%	30%	30%	30%
Housing Density	7.2		8.7	8.7	9.4
Single-family detached	5.4	Average of 6.7-10.0	5.6	5.6	6.0
Single-family attached	20.2		20.5	20.5	20.5
Two to four units	8.6	Dwelling units per acre	11.0	11.0	12.0
Five or more units	24.1		25.0	25.0	30.0
Residential development in commercial PD	5%	5% - 15%	5%	5%	5%
Residential redevelopment	8%	5% to 20%	8%	12%	16%
Net to Gross for Right-of-Way	24%	20% to 35%	24%	24%	24%
<b>Public and Semi-Public Land Needs</b>					
Park Land (inside the UGB)	13.8 pkp	N/A	13.8 pkp	13.8 pkp	13.8 pkp
Neighborhood Parks	1.7 pkp		1.7 pkp	1.7 pkp	1.7 pkp
Community Parks	1.5 pkp		1.5 pkp	1.5 pkp	1.5 pkp
Natural Areas	3.8 pkp		3.8 pkp	3.8 pkp	3.8 pkp
Other Parks	6.8 pkp		6.8 pkp	6.8 pkp	6.8 pkp
Schools		N/A			
4J School District	0 acres		0 acres	0 acres	0 acres
Bethel School District	120 acres		120 acres	120 acres	120 acres
Public Operations and Facilities	100 acres	100 - 230 acres	100 acres	100 acres	100 acres
Semi-public uses	50 acres	25 - 75 acres	50 acres	50 acres	50 acres

Note: The baseline assumptions are highlighted in green and the assumptions that have been varied are shown in red. EPA is employees per acre. PKP is acres per thousand people.

The *Parks, Recreation & Open Space Comprehensive Plan (PROS)* identifies a target level-of-service of 20 acres per 1,000 people, including a target level-of-service of 10 acres per 1,000 people for natural areas. Currently, 62% of Eugene's natural areas are

located outside of the UGB. In the baseline assumption and all the variations, we assume that 62% of Eugene's needed natural areas will be located outside the UGB. The level-of-service for parkland inside the UGB is 13.8 acres per 1,000 people.

## Variation 1: Increased density on vacant land

In Variation 1, the following assumptions are varied:

- **New employment in existing built space.** Businesses may choose to add employees and use existing built space more efficiently. Some rationale for assuming that 20% of new employment may locate in existing built space include: (1) that Eugene has lost approximately 7,000 jobs during the current recession; (2) a continued shift from industrial employment to information-based employment that can locate in existing built space; (3) the cost of developing on greenfields, such as the cost of servicing greenfield sites. It is reasonable to assume that businesses that laid off employees will be able to accommodate new employees in their existing space. This variation may lessen the need to consider a slower employment growth rate for the next two to five years.
- **Employment density.** In Variation 1, we assumed that employment densities would increase by about 10% over the next twenty years. The largest increase in density is for commercial plan designations, which would need to achieve densities of about 75 employees per acre (EPA). For comparison, businesses on Country Club Road have a density of about 77 EPA and the density in the Downtown Core is 93 EPA.
- **Housing mix.** Variation 1 assumes that the mix of new housing will be changed from about 61% single-family detached units to 50% single-family detached units. In other words, new housing construction will be evenly split between detached and attached units, which will increase residential density, all else being equal. That assumption cannot be justified based on historical trends in Eugene. Rather, it is based on other assumptions that are consistent with more multiple-family (attached) residential development: for example, increases in fuel prices, increases in land and housing cost, increasing consumer preferences for "green" building, evidence of such a mix in other larger cities.
- **Housing density.** Change in housing density is influenced, in part, by change in housing mix. An increase in the percentage of multifamily housing will usually result in some increase in overall housing density, other things being equal. Variation 1 assumes that the average housing density citywide will increase by 15%, from 7.2 dwelling units per net acre to 8.7 dwelling units per net acre. The majority of this increase would be the result of: (1) an increase in percentage of new housing units that are multifamily (i.e., a change in mix), and (2) an increase in the density of all housing types, especially in structures with five or more units.

## Variation 2: Variation 1, plus increased redevelopment

Variation 2 includes all of the same changes in assumption as Variation 1, as well as the following additional changes:

- **Employment redevelopment.** Redevelopment of employment land is often a function of the availability of redevelopment sites and the willingness of firms to redevelop. Some types of redevelopment are more difficult than others. For example, a contaminated brownfield site is less likely to redevelop than a retail site along an arterial street. Variation 2 assumes that all types of employment land will have additional redevelopment. One way that a city can encourage redevelopment, especially commercial and retail redevelopment, is by limiting the available supply of commercial and retail land.
- **Residential redevelopment.** Residential redevelopment (including residential infill of partially vacant lots) generally occurs with increases in land value. Over the last few years, Eugene has had a substantial amount of residential redevelopment on Medium Density Residential land, especially near the University of Oregon. Variation 2 assumes that the amount of residential redevelopment over the 20-year period will increase from 8% to 12% of new housing, an increase in the redevelopment rate of 50%. The variation of this assumption is, perhaps, the most controversial issue under consideration for ECLA. Some members of the CAC have strong concerns about the affect of current and future redevelopment on existing neighborhoods and believe this redevelopment rate should be reduced.

## Variation 3: Increased density and redevelopment for some types of growth

In Variation 3, the following assumptions are varied:

- **New employment in non-employment plan designations.** Historically, about 15% of Eugene's employment has located outside of commercial and industrial plan designations (i.e., working from home), most frequently in residential or mixed-use plan designations. Variation 3 assumes that 20% of new employment will locate in non-employment plan designations, possibly as in residential plan designations or possibly as part of mixed-use developments. The rationale for this assumption include: (1) Eugene's economy may continue shifting to an information-based employment, which is compatible with residential uses and (2) working from home has become more common over the last two decades and may become even more common in the next 20 years.
- **New employment in existing built space.** Same as Variation 1.
- **Employment redevelopment.** Variation 3 assumes that redevelopment will increase over Variation 2 for commercial and retail employment but not for industrial employment. The rationale for this assumption is that the City could choose to limit commercial and retail land availability, causing more businesses that want to locate in Eugene to do so on land that requires



redevelopment. The businesses that are most likely to choose to redevelop sites are those that strongly prefer to locate in Eugene, such as retail stores that want to be close to customers or close to existing retail nodes or professional services that prefer to locate in Downtown Eugene or near the University of Oregon.

- **Employment density.** In Variation 3, we assumed that commercial and retail employment densities would increase by about 25% to 30% over the next twenty years. This variation assumes that on average commercial employment would achieve densities similar to those on Country Club Road of about 77 EPA and in the Downtown Core of about 93 EPA. This could be accomplished through building more multistory office buildings. This variation also assumes that retail development will become denser, more like development at the Oakway Center than retail development along West 11<sup>th</sup>.
- **Net to Gross for Right-of-Way.** Variation 3 assumes that the net to gross factor for commercial development would decrease to 15% as a result of a decrease in development of large parcels without existing rights-of-way.
- **Housing mix.** Same as Variation 1.
- **Housing density.** Variation 3 assumes that the average housing density will increase from 7.2 dwelling units per net acre to 9.4 dwelling units per net acre, an increase of nearly 31%. The majority of this increase would be the result of: (1) the increase in multifamily housing, (2) an increase in density of single-family detached units, and (3) a substantial increase in the density of structures with structures with two to four units and five or more units. This change in density represents our estimate of the upper bound of an increase in density that is likely to happen without policy changes to increase density.
- **Residential redevelopment.** Variation 3 assumes that the amount of residential redevelopment over the 20-year period will increase from 8% to 16% of new housing, a doubling in the amount of residential redevelopment. This increase in redevelopment would likely result from the following conditions: (1) the results of the Infill and Compatibility Standards and Opportunity Siting projects, with increased redevelopment in areas identified through these studies and (2) an increase in residential redevelopment in commercial and mixed-use areas.



## RESULTS

ECONorthwest used the assumptions described above to compare the supply of developable land with the demand for land over the 20-year period. The supply of land is the same for all four cases. It is the amount estimated and reported in the technical memorandum *Buildable Land Inventory* and presented to the Eugene City Council on September 28, 2009. Table 2 summarizes the results.

**Table 2. Developable land by plan designation, Eugene UGB 2008**

Plan Designation	Land within the UGB (Gross Acres)		
	Developable Land	Committed, Protected, or Developed Land	Total Land
Commercial	89	2,100	2,189
Industrial	939	4,822	5,761
Residential	1,679	20,476	22,155
Mixed Use	10	288	298
Government and Education	-	842	842
Other	56	3,146	3,202
<b>Total</b>	<b>2,774</b>	<b>31,673</b>	<b>34,447</b>

Source: LCOG Buildable Lands Inventory, Figure 10a

For each of the four demand scenarios (the baseline and the three variations) we used the assumptions in Table 1 to make estimates of the amount of land needed to accommodate the growth in land conversion (from vacant to developed for residential, commercial, industrial, or public or semi-public uses). Appendix A provides more details.

Finally, we compared the supply of land today (as summarized in Table 2) to the demand for land over the next 20 years (as described in Appendix A) to see whether the amount of land in today's UGB would be sufficient (given all the assumptions we have described here and elsewhere) to accommodate the expected growth in population and employment. Table 3 shows the results. In each scenario, the demand for land exceeded the supply of developable land: there is a deficit of land within the UGB.

**Table 3. Deficit of land (in gross acres) within Eugene's UGB for expected growth, 2010 to 2030**

Plan Designation	Land Deficit (Gross Acres)			
	Baseline Assumptions	Variation 1	Variation 2	Variation 3
Residential				
Low Density Residential	1,301	751	658	511
Medium Density Residential	300	326	309	268
High Density Residential	254	264	257	246
Commercial	408	314	282	180
Industrial	----	----	----	----
<b>Residential and Commercial Land Deficit</b>	<b>2,262</b>	<b>1,655</b>	<b>1,506</b>	<b>1,204</b>
Difference from Baseline Assumptions				
Gross Acres		608	756	1,058
Percent Difference		27%	33%	47%

Source: LCOG Buildable Lands Inventory, ECONorthwest memorandum *Summary of Land Sufficiency in the Eugene UGB Under Baseline Assumptions and Variations to the Baseline Assumptions*

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

Note: Each variation shows a surplus of industrial land based strictly on number of acres needed in the EOA. The variations do not account for special characteristics of needed industrial sites (e.g., site size or proximity to I-5), as discussed in the memorandum *Summary of Land Sufficiency in the Eugene UGB Under Baseline Assumptions and Variations to the Baseline Assumptions*.

The bottom half of Table 3 shows how much land need is reduced by the variations: about 608 to 1,058 acres.

## INTERPRETATION

The three variations to the baseline analysis described above are not the only possible variations to Eugene's land need. The assumptions used in the land need analysis could be varied in many other plausible ways:

- **Less residential redevelopment.** The variations presented above did not include the possibility that there may be less residential redevelopment over the next 20 years than there was over the last eight years. According to some development experts, the intensity of residential redevelopment that occurred over the last few years may not be repeated in Eugene in the next 20 years.
- **Need for large commercial or industrial sites.** This memorandum estimates employment land need based on expected employment growth and historical employment densities. Another way to forecast employment land need is based on the characteristics of sites for industries expected (or desired) to grow. For example, if a city wanted to attract large-scale manufacturing, the city would need to have land (sites) that have the characteristics needed by the manufacturers. Typical site characteristics needed for large-scale manufacturing include sites 25-acres and larger, close proximity to transportation infrastructure (generally I-5 and railroads), flat topography, and compatible surrounding uses.

Many cities in Oregon have used "site needs" to justify (1) higher estimates of industrial and commercial land need, and, consequently in some cases (2) the

need for UGB expansion. Such justifications are the result of a local economic development strategy that identifies specific target industries with specific siting requirements. If those requirements do not exist within the current UGB, cities have justification to include sites that meet the requirements.<sup>3</sup>

Eugene does not have an economic development strategy that specifically identifies target industries, which means there is no clear policy basis for determining site needs. In the absence of this policy direction, we have not estimated need for large commercial or industrial sites. The results of the variations all show that Eugene has enough industrial land in the aggregate to meet demand over the next 20 years. That finding may or may not be true, depending on the City's future decisions about economic development strategy. The City Council may work on an economic development strategy over the next few years, which will clarify this issue as the City continues its comprehensive planning process.

- **Mixed-use development.** The baseline analysis and all three variations assume that some employment and residential development will co-locate. Increasing the amount of mixed-use development could decrease the deficit of residential or employment land if mixed-use development occurs at sufficiently high densities.

It is plausible that there could be more mixed-use development, especially if land is available for mixed-use development. But there is currently only about 10 developable acres of land with a Mixed Use plan designation. Additional opportunities for mixed use development may be identified through the Opportunity Siting or in areas designated for nodal development. Rezoning land to Mixed Use plan designation (or a Commercial plan designation that allows residential uses) would be a policy change, and beyond the scope of the variations described in this memorandum

Although the preliminary analyses of land sufficiency shows that Eugene does not have enough land within the UGB to meet demand over the 20 year period, that does *not* mean that the City must expand its UGB. Rather, it means that the City must take another step to make that determination: it must identify, evaluate, and discuss policies it could adopt to reduce the land deficiency. **The City's ultimate determination of whether the UGB needs to be expanded must be done in the context of policies that it will adopt that can reasonably be assumed to reduce the need for that expansion (these policies are referred to collectively as "land-use efficiency measures").** Evaluation of efficiency measures, if required, will occur in 2010 and beyond.

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<sup>3</sup> The Goal 9 Administrative Rule is clear on the policy intent: "The intent of the Land Conservation and Development Commission is to provide an adequate land supply for economic development and employment growth in Oregon. The intent of this division is to link planning for an adequate land supply to infrastructure planning, community involvement and coordination among local governments and the state." OAR 660-009-0000

In broad terms, the options that the City Council have for addressing the preliminary land deficiency are:

1. **Making assumptions that decrease land need or increase existing land capacity and that are different than those we have illustrated in Variations 1, 2, and 3.** The City Council could do that either:
  - a. **Without making any changes to City policy** (it would then have to justify the changes based on expectations about changes in market conditions). For example, the City could increase assumptions about residential density to the maximum (or near maximum) density allowed under current policies.
  - b. **With changes to City policy**, such as increasing the maximum residential densities allowed by plan designations or increasing the supply of land designated for high density mixed-use.
2. **Expanding the UGB.**

The City Council could pursue Option 1.a this year as part of ECLA. Options 1.b and 2 are ones that the City Council would pursue next year after ECLA is completed. The City Council can choose to both implement land-use efficiency measures to reduce land need and expand the UGB.



## APPENDIX A: SUMMARY OF LAND NEED UNDER THE BASELINE ASSUMPTIONS

The following appendix describes, in brief, the amount of land needed in Eugene's UGB to meet expected growth over the 2010 to 2030 period under the baseline assumptions. The framework for developing this analysis and the assumptions used in this analysis are described in other documents and will be summarized in the final ECLA report. This appendix is intended to describe very briefly how the land need for this variation was derived.

### PUBLIC AND SEMI-PUBLIC LAND NEED

Table A-1 shows public and semi-public land need in Eugene for the 2010-2030 period. As discussed in the Baseline Assumptions memorandum, this table includes a deficit of about 187 acres of parkland to serve the existing population.<sup>4</sup>

**Table A-1. Public and Semi-Public land need, Eugene UGB, 2010-2030**

Type of Use	Assumed Need (Ac/1,000 Persons)	Estimated need (gross acres) 2010-2030
Schools	3.5	120
4J School District	none	none
Bethel School District	3.5	120
Parks and Open Space inside the UGB	14.4	626
Neighborhood Parks	1.7	117
Community Parks	1.5	none
Natural Areas	4.4	150
Other Parks	6.8	359
Public Facilities and Operations	2.9	100
Semi-Public	1.3	45
<b>Total</b>	<b>22.2</b>	<b>890</b>

Source: ECONorthwest memorandum "Preliminary Range of Public and Semi-Public Land Need in Eugene During the 2010-2030 Period," September 15, 2009

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

The baseline assumes that only 38% of Natural Area parkland (about 92 acres) will be met within the Eugene UGB. The remaining 62% (about 150 acres) will be met outside of the UGB, consistent with the current location of natural areas relative to the UGB.

<sup>4</sup> The assumed parkland need in Table A-1 (14.4 acres per 1,000 people) includes 187 acres of parkland that is needed to meet the parkland level of service for people currently living inside the UGB. In other words, Eugene's current supply of parkland does not meet the level of services identified in the *PROS Plan*. As a result, the assumed parkland need in Table A-1 (14.4 acres per 1,000 people) is higher than the assumed parkland need in Table 1 (13.8 acres per 1,000 people).

## EMPLOYMENT LAND NEED

Table A-2 shows Eugene's employment land demand for the 2010 to 2030 period.

**Table A-2. Commercial and Industrial land need by type, Eugene UGB, 2010-2030**

Land Use Type	Employment on New Land	EPA (Net Acres)	Land	
			Demand (Net Acres)	Land Demand (Gross Acres)
Industrial	5,410	13	416	490
Commercial	12,108	68	178	223
Retail	1,949	23	85	106
<b>Total</b>	<b>19,467</b>	<b>29</b>	<b>679</b>	<b>818</b>

Source: Draft Eugene Economic Opportunities Analysis

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

Table A-3 shows land demand in commercial and industrial plan designations for the 2010 to 2030 period. The land demand shown in Table A-3 includes the demand for employment land shown in Table A-2, Public and Semi-Public Uses that are likely to locate in commercial plan designations (Table A-1)<sup>5</sup>, and future residential development in commercial plan designations.<sup>6</sup>

**Table A-3. Land Demand in Commercial and Industrial Plan Designations , Eugene UGB, 2010-2030**

	Land Demand (Gross Acres)
Commercial	
Employment Uses	329
Public and Semi-Public Uses	114
Residential development in Commercial Plan Designations	64
<b>Total Commercial</b>	<b>507</b>
Industrial	
Employment Uses	490
<b>Total Industrial</b>	<b>490</b>
<b>Total Employment Land Demand</b>	<b>996</b>

Source: Draft Eugene Economic Opportunities Analysis and estimated land demand for non-employment uses in commercial and industrial plan designations

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

<sup>5</sup> We did an analysis of public and semi-public uses within the UGB and allocated future public and semi-public land demand (Table A-1) based on historical development patterns. The types of public and semi-public uses that most frequently located in commercial plan designations were public facilities and operations, schools, and semi-public uses (e.g., churches).

<sup>6</sup> About 5% of new residential development during the 2001-2008 period located in commercial plan designations. We assumed that 5% of new residential development would locate in commercial plan designations over the next 20 years and that all new housing in commercial plan designations would be attached housing.

Table A-4 shows that Eugene has a deficit of land in commercial plan designations.

**Table A-4. Comparison of Land Demand and Supply in Commercial and Industrial Plan Designations , Eugene UGB, 2010-2030**

	Land Supply (Gross Acres)	Land Demand (Gross Acres)	Land Surplus or Deficit (Gross Acres)
Commercial	99	507	(408)
Industrial	939	490	449

Source: Land supply is based on the LCOG "ECLA Buildable Land Supply" and analysis in this memorandum

Note: The Commercial land supply includes 89 acres of land designated for commercial uses and 10 acres of land in mixed use designations.

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

## RESIDENTIAL LAND NEED

The capacity analysis estimated the capacity of vacant residential land to accommodate additional housing. Table A-5 shows the number of dwelling units that are needed and beyond the capacity of land within the existing UGB. The results shown in Table A-5 are housing needed in Eugene over the 20-year period in excess of the capacity of existing vacant residential land using baseline assumptions about density.

**Table A-5. Needed Residential Land for Future Housing, Eugene UGB, 2010-2030**

Plan Designation	Needed Dwelling Units in Excess of Land Capacity	Density (DU/Gross Acre)	Land Deficit (Gross Acres)
Low Density Residential	3,157	3.9	800
Medium Density Residential	1,117	9.7	115
High Density Residential	835	22.8	37
<b>Total</b>	<b>5,109</b>		<b>952</b>

Source: Comparison of residential capacity with baseline assumptions about needed housing

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

Note: The density is based on the projected density by plan designation, which is based on housing mix and housing density by structure type.

Table A-6 shows the land deficit (land needed beyond the land within the existing UGB) in residential plan designations for the 2010 to 2030 period. The land shown in Table A-6 is land needed in excess of the existing vacant residential land in Eugene. The land deficit shown in Table A-6 includes the demand for residential land for new housing shown in Table A-5, public and semi-public uses that are likely to locate in

residential plan designations (Table A-1)<sup>7</sup>, and future employment likely to locate in residential plan designations.<sup>8</sup>

**Table A-6. Land Needed in Residential Plan Designations, Eugene UGB, 2010-2030**

<b>Plan Designation</b>	<b>Land Deficit (Gross Acres)</b>
Low Density Residential	
New Housing	800
Public and Semi-Public Uses	443
Employment in Residential Plan Designations	58
<b>Total Low Density Residential</b>	<b>1,301</b>
Medium Density Residential	
New Housing	115
Public and Semi-Public Uses	167
Employment in Residential Plan Designations	18
<b>Total Medium Density Residential</b>	<b>300</b>
High Density Residential	
New Housing	37
Group Quarters	36
Public and Semi-Public Uses	167
Employment in Residential Plan Designations	13
<b>Total High Density Residential</b>	<b>254</b>
<b>Total Residential Land Deficit</b>	<b>1,855</b>

Source: Comparison of residential capacity with baseline assumptions about needed housing and estimated land demand for non-residential uses in residential plan designations

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

<sup>7</sup> We did an analysis of public and semi-public uses within the UGB and allocated future public and semi-public land demand (Table A-1) based on historical development patterns. The types of public and semi-public uses that most frequently located in residential plan designations were parks, schools, and semi-public uses (e.g., churches).

<sup>8</sup> About 15% of employment development in 2006 was located in residential plan designations. We assumed that 15% of new employment would locate in residential plan designations over the next 20 years.



## APPENDIX B: SUMMARY OF VARIATION 1: INCREASED DENSITY ON VACANT LAND

The following appendix describes, in brief, the amount of land needed in Eugene's UGB to meet expected growth over the 2010 to 2030 period under the assumptions used in **Variation 1: Increased Density on Vacant Land**. This appendix is intended to describe very briefly how the land need for this variation was derived.

### PUBLIC AND SEMI-PUBLIC LAND NEED

Unchanged from the baseline analysis.

### EMPLOYMENT LAND NEED

Table B-1 shows Eugene's employment land demand for the 2010 to 2030 period.

**Table B-1. Commercial and Industrial land need by type, Eugene UGB, 2010-1030**

Land Use Type	Employment on New Land	EPA (Net Acres)	Land Demand (Net Acres)	Land Demand (Gross Acres)
Industrial	1,090	14	338	398
Commercial	10,090	75	135	168
Retail	1,461	25	58	73
<b>Total</b>	<b>16,285</b>	<b>31</b>	<b>531</b>	<b>639</b>

Source: Draft Eugene Economic Opportunities Analysis

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

Table B-2 shows land demand in commercial and industrial plan designations for the 2010 to 2030 period. The land demand shown in Table B-2 includes the demand for employment land shown in Table B-1, Public and Semi-Public Uses that are likely to locate in commercial plan designations (Table B-1)<sup>9</sup>, and future residential development in commercial plan designations.<sup>10</sup>

<sup>9</sup> We did an analysis of public and semi-public uses within the UGB and allocated future public and semi-public land demand (Table A-1) based on historical development patterns. The types of public and semi-public uses that most frequently located in C-commercial plan designations were public facilities and operations, schools, and semi-public uses (e.g., churches).

<sup>10</sup> About 9% of new residential development during the 2001-2008 period located in commercial plan designations. We assumed that 9% of new residential development would locate in commercial plan designations over the next 20 years and that all new housing in commercial plan designations would be attached housing.

**Table B-2. Land Demand in Commercial and Industrial Plan Designations , Eugene UGB, 2010-1030**

	<b>Land Demand (Gross Acres)</b>
Commercial	
Employment Uses	241
Public and Semi-Public Uses	114
Residential development in Commercial Plan Designations	58
Total Commercial	413
Industrial	
Employment Uses	398
Total Industrial	398
<b>Total Employment Land Demand</b>	<b>810</b>

Source: Draft Eugene Economic Opportunities Analysis and estimated land demand for non-employment uses in commercial and industrial plan designations

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

Table B-3 shows that Eugene has a deficit of land in commercial plan designations and a surplus in industrial plan designations.

**Table B-3. Comparison of Land Demand and Supply in Commercial and Industrial Plan Designations, Eugene UGB, 2010-1030**

	<b>Land Supply (Gross Acres)</b>	<b>Land Demand (Gross Acres)</b>	<b>Land Surplus or Deficit (Gross Acres)</b>
Commercial	99	413	(314)
Industrial	939	398	541

Source: Land supply is based on the LCOG "ECLA Buildable Land Supply" and analysis in this memorandum

Note: The Commercial land supply includes 89 acres of land designated for commercial uses and 10 acres of land in mixed use designations.

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

## RESIDENTIAL LAND NEED

The capacity analysis estimated the capacity of vacant residential land to accommodate additional housing. Table B-4 shows the number of dwelling units that are needed and beyond the capacity of land within the existing UGB. The results shown in Table B-4 are housing needed in Eugene over the 20-year period in excess of the capacity of existing vacant residential land using baseline assumptions about density.

**Table B-4. Needed Residential Land for Future Housing, Eugene UGB, 2010-1030**

<b>Plan Designation</b>	<b>Needed Dwelling Units in Excess of Land Capacity</b>	<b>Density (DU/Gross Acre)</b>	<b>Land Deficit (Gross Acres)</b>
Low Density Residential	1,070	4.2	255
Medium Density Residential	1,510	10.5	143
High Density Residential	1,334	25.6	52
<b>Total</b>	<b>3,914</b>		<b>450</b>

Source: Comparison of residential capacity with baseline assumptions about needed housing

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

Table B-5 shows the land deficit (land needed beyond the land within the existing UGB) in residential plan designations for the 2010 to 2030 period. The land shown in Table B-5 is land needed in excess of the existing vacant residential land in Eugene. The land deficit shown in Table B-5 includes the demand for residential land for new housing shown in Table B-4, public and semi-public uses that are likely to locate in residential plan designations (Table B-1)<sup>11</sup>, and future employment likely to locate in residential plan designations.<sup>12</sup>

<sup>11</sup> We did an analysis of public and semi-public uses within the UGB and allocated future public and semi-public land demand (Table A-1) based on historical development patterns. The types of public and semi-public uses that most frequently located in residential plan designations were parks, schools, and semi-public uses (e.g., churches).

<sup>12</sup> About 15% of employment development in 2006 was located in residential plan designations. We assumed that 15% of new employment would locate in residential plan designations over the next 20 years.

**Table B-5. Land Deficit in Residential Plan Designations, Eugene UGB, 2010-1030**

<b>Plan Designation</b>	<b>Land Deficit (Gross Acres)</b>
Low Density Residential	
New Housing	255
Public and Semi-Public Uses	443
Employment in Residential Plan Designations	53
<b>Total Low Density Residential</b>	<b>751</b>
Medium Density Residential	
New Housing	143
Public and Semi-Public Uses	167
Employment in Residential Plan Designations	16
<b>Total Medium Density Residential</b>	<b>326</b>
High Density Residential	
New Housing	52
Group Quarters	32
Public and Semi-Public Uses	167
Employment in Residential Plan Designations	12
<b>Total High Density Residential</b>	<b>264</b>
<b>Total Residential Land Deficit</b>	<b>1,341</b>

Source: Comparison of residential capacity with baseline assumptions about needed housing and estimated land demand for non-residential uses in residential plan designations

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

## APPENDIX C: SUMMARY OF VARIATION 2: VARIATION 1, PLUS INCREASED REDEVELOPMENT

The following appendix describes, in brief, the amount of land needed in Eugene’s UGB to meet expected growth over the 2010 to 2030 period under the assumptions used in **Variation 2: Variation 1, Plus Increased Redevelopment**. This appendix is intended to describe very briefly how the land need for this variation was derived.

### PUBLIC AND SEMI-PUBLIC LAND NEED

Unchanged from the baseline analysis.

### EMPLOYMENT LAND NEED

Table C-1 shows Eugene’s employment land demand for the 2010 to 2030 period.

**Table C-1. Commercial and Industrial land need by type, Eugene UGB, 2010-1030**

Land Use Type	Employment on New Land	EPA (Net Acres)	Land	
			Demand (Net Acres)	Land Demand (Gross Acres)
Industrial	1,090	14	314	369
Commercial	9,081	75	121	151
Retail	1,218	25	49	61
<b>Total</b>	<b>14,695</b>	<b>30</b>	<b>484</b>	<b>582</b>

Source: Draft Eugene Economic Opportunities Analysis

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

Table C-2 shows land demand in commercial and industrial plan designations for the 2010 to 2030 period. The land demand shown in Table C-2 includes the demand for employment land shown in Table C-1, Public and Semi-Public Uses that are likely to locate in commercial plan designations (Table C-1)<sup>13</sup>, and future residential development in commercial plan designations.<sup>14</sup>

<sup>13</sup> We did an analysis of public and semi-public uses within the UGB and allocated future public and semi-public land demand (Table A-1) based on historical development patterns. The types of public and semi-public uses that most frequently located in C-commercial plan designations were public facilities and operations, schools, and semi-public uses (e.g., churches).

<sup>14</sup> About 9% of new residential development during the 2001-2008 period located in commercial plan designations. We assumed that 9% of new residential development would locate in commercial plan designations over the next 20 years and that all new housing in commercial plan designations would be attached housing.



**Table C-2. Land Demand in Commercial and Industrial Plan Designations , Eugene UGB, 2010-1030**

	<b>Land Demand (Gross Acres)</b>
Commercial	
Employment Uses	212
Public and Semi-Public Uses	114
Residential development in Commercial Plan Designations	55
Total Commercial	381
Industrial	
Employment Uses	369
Total Industrial	369
<b>Total Employment Land Demand</b>	<b>750</b>

Source: Draft Eugene Economic Opportunities Analysis and estimated land demand for non-employment uses in commercial and industrial plan designations

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

Table C-3 shows that Eugene has a deficit of land in commercial plan designations and a surplus in industrial plan designations.

**Table C-3. Comparison of Land Demand and Supply in Commercial and Industrial Plan Designations, Eugene UGB, 2010-1030**

	<b>Land Supply (Gross Acres)</b>	<b>Land Demand (Gross Acres)</b>	<b>Land Surplus or Deficit (Gross Acres)</b>
Commercial	99	381	(282)
Industrial	939	369	570

Source: Land supply is based on the LCOG "ECLA Buildable Land Supply" and analysis in this memorandum

Note: The Commercial land supply includes 89 acres of land designated for commercial uses and 10 acres of land in mixed use designations.

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

## RESIDENTIAL LAND NEED

The capacity analysis estimated the capacity of vacant residential land to accommodate additional housing. Table C-4 shows the number of dwelling units that are needed and beyond the capacity of land within the existing UGB. The results shown in Table C-4 are housing needed in Eugene over the 20-year period in excess of the capacity of existing vacant residential land using baseline assumptions about density.

**Table C-4. Needed Residential Land for Future Housing, Eugene UGB, 2010-1030**

<b>Plan Designation</b>	<b>Needed Dwelling Units in Excess of Land Capacity</b>	<b>Density (DU/Gross Acre)</b>	<b>Land Deficit (Gross Acres)</b>
Low Density Residential	679	4.2	162
Medium Density Residential	1,324	10.5	126
High Density Residential	1,160	25.6	45
<b>Total</b>	<b>3,163</b>		<b>333</b>

Source: Comparison of residential capacity with baseline assumptions about needed housing

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

Table C-5 shows the land deficit (land needed beyond the land within the existing UGB) in residential plan designations for the 2010 to 2030 period. The land shown in Table C-5 is land needed in excess of the existing vacant residential land in Eugene. The land deficit shown in Table C-5 includes the demand for residential land for new housing shown in Table C-4, public and semi-public uses that are likely to locate in residential plan designations (Table C-1)<sup>15</sup>, and future employment likely to locate in residential plan designations.<sup>16</sup>

<sup>15</sup> We did an analysis of public and semi-public uses within the UGB and allocated future public and semi-public land demand (Table A-1) based on historical development patterns. The types of public and semi-public uses that most frequently located in residential plan designations were parks, schools, and semi-public uses (e.g., churches).

<sup>16</sup> About 15% of employment development in 2006 was located in residential plan designations. We assumed that 15% of new employment would locate in residential plan designations over the next 20 years.

**Table C-5. Land Deficit in Residential Plan Designations,  
Eugene UGB, 2010-1030**

<b>Plan Designation</b>	<b>Land Deficit (Gross Acres)</b>
Low Density Residential	
New Housing	162
Public and Semi-Public Uses	443
Employment in Residential Plan Designations	53
<b>Total Low Density Residential</b>	<b>658</b>
Medium Density Residential	
New Housing	126
Public and Semi-Public Uses	167
Employment in Residential Plan Designations	16
<b>Total Medium Density Residential</b>	<b>309</b>
High Density Residential	
New Housing	45
Group Quarters	32
Public and Semi-Public Uses	167
Employment in Residential Plan Designations	12
<b>Total High Density Residential</b>	<b>257</b>
<b>Total Residential Land Deficit</b>	<b>1,224</b>

Source: Comparison of residential capacity with baseline assumptions about needed housing and estimated land demand for non-residential uses in residential plan designations

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.



## APPENDIX D: SUMMARY OF VARIATION 3: INCREASED DENSITY AND REDEVELOPMENT FOR SOME TYPES OF GROWTH

The following appendix describes, in brief, the amount of land needed in Eugene’s UGB to meet expected growth over the 2010 to 2030 period under the assumptions used in **Variation 3: Increased Density and Redevelopment for Some Types of Growth**. This appendix is intended to describe very briefly how the land need for this variation was derived.

### PUBLIC AND SEMI-PUBLIC LAND NEED

Unchanged from the baseline analysis.

### EMPLOYMENT LAND NEED

Table D-1 shows Eugene’s employment land demand for the 2010 to 2030 period.

**Table D-1. Commercial and Industrial land need by type, Eugene UGB, 2010-1030**

Land Use Type	Employment on New Land	EPA (Net Acres)	Land Demand (Net Acres)	Land Demand (Gross Acres)
Industrial	1,452	16	275	323
Commercial	7,063	85	83	98
Retail	486	30	16	19
<b>Total</b>	<b>11,945</b>	<b>32</b>	<b>374</b>	<b>440</b>

Source: Draft Eugene Economic Opportunities Analysis

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

Table D-2 shows land demand in commercial and industrial plan designations for the 2010 to 2030 period. The land demand shown in Table D-2 includes the demand for employment land shown in Table D-1, Public and Semi-Public Uses that are likely to locate in commercial plan designations (Table D-1)<sup>17</sup>, and future residential development in commercial plan designations.<sup>18</sup>

<sup>17</sup> We did an analysis of public and semi-public uses within the UGB and allocated future public and semi-public land demand (Table A-1) based on historical development patterns. The types of public and semi-public uses that most frequently located in C-commercial plan designations were public facilities and operations, schools, and semi-public uses (e.g., churches).

<sup>18</sup> About 9% of new residential development during the 2001-2008 period located in commercial plan designations. We assumed that 9% of new residential development would locate in commercial plan designations over the next 20 years and that all new housing in commercial plan designations would be attached housing.

**Table D-2. Land Demand in Commercial and Industrial Plan Designations , Eugene UGB, 2010-1030**

	Land Demand (Gross Acres)
Commercial	
Employment Uses	117
Public and Semi-Public Uses	114
Residential development in Commercial Plan Designations	48
Total Commercial	279
Industrial	
Employment Uses	323
Total Industrial	323
<b>Total Employment Land Demand</b>	<b>602</b>

Source: Draft Eugene Economic Opportunities Analysis and estimated land demand for non-employment uses in commercial and industrial plan designations

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

Table D-3 shows that Eugene has a deficit of land in commercial plan designations and a surplus in industrial plan designations.

**Table D-3. Comparison of Land Demand and Supply in Commercial and Industrial Plan Designations, Eugene UGB, 2010-1030**

	Land Supply (Gross Acres)	Land Demand (Gross Acres)	Land Surplus or Deficit (Gross Acres)
Commercial	99	279	(180)
Industrial	939	323	616

Source: Land supply is based on the LCOG "ECLA Buildable Land Supply" and analysis in this memorandum

Note: The Commercial land supply includes 89 acres of land designated for commercial uses and 10 acres of land in mixed use designations.

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

## RESIDENTIAL LAND NEED

The capacity analysis estimated the capacity of vacant residential land to accommodate additional housing. Table D-4 shows the number of dwelling units that are needed and beyond the capacity of land within the existing UGB. The results shown in Table D-4 are housing needed in Eugene over the 20-year period in excess of the capacity of existing vacant residential land using baseline assumptions about density.

**Table D-4. Needed Residential Land for Future Housing, Eugene UGB, 2010-1030**

<b>Plan Designation</b>	<b>Needed Dwelling Units in Excess of Land Capacity</b>	<b>Density (DU/Gross Acre)</b>	<b>Land Deficit (Gross Acres)</b>
Low Density Residential	31	4.5	7
Medium Density Residential	966	11.7	82
High Density Residential	926	27.1	34
<b>Total</b>	<b>1,923</b>		<b>123</b>

Source: Comparison of residential capacity with baseline assumptions about needed housing

Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

Table D-5 shows the land deficit (land needed beyond the land within the existing UGB) in residential plan designations for the 2010 to 2030 period. The land shown in Table D-5 is land needed in excess of the existing vacant residential land in Eugene. The land deficit shown in Table D-5 includes the demand for residential land for new housing shown in Table D-4, public and semi-public uses that are likely to locate in residential plan designations (Table D-1)<sup>19</sup>, and future employment likely to locate in residential plan designations.<sup>20</sup>

<sup>19</sup> We did an analysis of public and semi-public uses within the UGB and allocated future public and semi-public land demand (Table A-1) based on historical development patterns. The types of public and semi-public uses that most frequently located in residential plan designations were parks, schools, and semi-public uses (e.g., churches).

<sup>20</sup> About 15% of employment development in 2006 was located in residential plan designations. We assumed that 15% of new employment would locate in residential plan designations over the next 20 years.

**Table D-5. Land Deficit in Residential Plan Designations, Eugene UGB, 2010-1030**

<b>Plan Designation</b>	<b>Land Deficit (Gross Acres)</b>
Low Density Residential	
New Housing	7
Public and Semi-Public Uses	443
Employment in Residential Plan Designations	61
<b>Total Low Density Residential</b>	<b>511</b>
Medium Density Residential	
New Housing	82
Public and Semi-Public Uses	167
Employment in Residential Plan Designations	19
<b>Total Medium Density Residential</b>	<b>268</b>
High Density Residential	
New Housing	34
Group Quarters	31
Public and Semi-Public Uses	167
Employment in Residential Plan Designations	14
<b>Total High Density Residential</b>	<b>246</b>
<b>Total Residential Land Deficit</b>	<b>1,025</b>

Source: Comparison of residential capacity with baseline assumptions about needed housing and estimated land demand for non-residential uses in residential plan designations  
Note: The numbers in the table above may not add exactly to the totals shown in the table as a result of rounding.

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October 16, 2009

**TO: Eugene City Council**  
**CC: Jason Dedrick**  
**FROM: Bob Parker, Terry Moore, and Beth Goodman,**  
**SUBJECT: BASELINE ANALYSIS OF THE ABILITY OF VACANT RESIDENTIAL LAND IN EUGENE TO ACCOMMODATE NEW HOUSING**

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The City of Eugene is conducting an assessment of land within its Urban Growth Boundary (UGB). Part of that assessment addresses whether Eugene has enough suitable land for residential development (residential land) to meet needs for the next 20 years. A key question in the residential lands analysis is “How much new housing can be accommodated by vacant land designated for residential use in the current UGB?”

This memorandum provides empirical analysis to help answer that question. It analyzes historical housing densities in Eugene based on plan designation and land characteristics, and applies those densities to vacant residential lands. This memorandum provides a baseline analysis of the ability of vacant residential land in Eugene to accommodate new housing. We will develop variations to the baseline analysis of land need, which will include variations to this analysis. This memorandum is organized as follows:

- **1 Framework for this analysis** provides an overview of the analysis and key questions that the analysis of vacant residential land to accommodate new housing will answer.
- **2 Methods and assumptions** describes what methods ECO used for the analysis.
- **3 Results** summarizes the findings of ECO’s analysis of the ability of vacant residential land in Eugene to accommodate new housing.
- **4 Conclusions** summarizes our findings and the implications for the overall residential land needs analysis.



# 1 FRAMEWORK FOR THE ANALYSIS

The Eugene Comprehensive Lands Assessment intends to evaluate the sufficiency of land within the UGB to accommodate 20-year forecasts of housing and employment. Like all land needs studies, it includes 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). The comparison of supply and demand allows the determination of land sufficiency.

There are two ways to get estimates of supply and demand into common units of measurement so that they can be compared: (1) housing demand can be converted into acres, or (2) residential land supply can be converted into dwelling units. A complication of either approach is that not all land has the same characteristics. Factors such as plan designation, slope, parcel size and shape, can all affect the ability of land to accommodate housing. Methods that recognize this fact are more robust and produce more realistic results. This analysis uses the second approach: it estimates the ability of vacant residential lands within the UGB to accommodate new housing.

This analysis, sometimes called a “capacity analysis,”<sup>1</sup> can be used to evaluate different ways that vacant residential land may buildout by applying different assumptions. These assumptions may be general (such as consideration of capacity based on an assumption of overall density of all housing types and overall acreage), or more specific (such as density by housing type, and accounting for actual lot sizes and distribution). For example, a residential land capacity analysis could provide information about any of the following:

1. How many units could be developed on buildable lands if development occurred at maximum zoned density?
2. How many units could be developed on buildable lands if development occurred at historical mix and density?
3. How many units could be developed on buildable lands if development occurred at needed mix and density identified in the housing needs forecast?

The latter (Option 3) is what state law requires, but the ECLA scope of work stops short of evaluating key policy issues, and such an evaluation is required to determine

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<sup>1</sup> There is ambiguity in the term *capacity analysis*. It would not be unreasonable for one to say that the “capacity” of vacant land is the maximum number of dwellings that could be built based on density limits defined legally by plan designation or zoning, and that development usually occurs – for physical and market reasons – at something less than full capacity. For that reason, we have used the longer phrase to describe our analysis: “estimating how many new dwelling units the vacant residential land in the UGB is likely to accommodate.” That phrase is, however, cumbersome, and it is common in Oregon and elsewhere to refer to that type of analysis as “capacity analysis,” so we use that shorthand occasionally in this memorandum.

the *needed* mix and density. That evaluation will happen in 2010, after the ECLA study is completed.

Each of the above scenarios would probably return substantially different results about the capacity of the buildable lands. This analysis addresses the second question of how many units could be developed on buildable lands if development occurred at historic mix and densities. The memorandum *Summary of Land Sufficiency in the Eugene UGB Under Baseline Assumptions and Variations to the Baseline Assumptions* presents three variations on the baseline assumptions and capacity analysis presented in this memorandum.

## 2 METHODS AND ASSUMPTIONS

The final step in the residential buildable lands inventory is to estimate the number of dwelling units that can be accommodated on vacant lands planned for residential uses. The capacity of residential land is measured in dwelling units and typically is based on assumptions about: (1) vacant buildable land (potentially including redevelopable land)<sup>2</sup>, (2) constraints; and (3) densities. In short, land capacity is a function of buildable land and density. The capacity can then be compared to new needed dwellings to estimate the surplus or deficit of land.

The buildable lands inventory prepared by LCOG provides the foundational information about the acres, lot sizes, and plan designations of the land supply and its development status (developed or vacant). It also provides information about constraints associated with those properties (natural or regulatory characteristics that reduce efficiency or preclude development). The capacity analysis requires specific assumptions to determine how much development the buildable lands will accommodate. The purpose of this summary is to discuss potential capacity methods and the assumptions needed to implement those methods.

The basic form of any method requires (1) an estimate of *buildable* land (e.g., land that is developable minus constraints), and (2) assumptions about density. The arithmetic is straightforward:

$$\text{Buildable Land (ac)} * \text{Density (du/ac)} = \text{Capacity (in dwelling units)}$$

For example:

$$100 \text{ acres} * 6 \text{ du/ac} = 600 \text{ dwelling units of capacity}$$

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<sup>2</sup> We addressed redevelopment through the analysis of demand for housing by deducting expected redevelopment from needed housing, so no analysis of redevelopment capacity is included in this analysis.

The example is a simplification of the method, and makes several implicit assumptions: acres and density are measured in the same units (either gross or net)<sup>3</sup>; all of the acres have capacity (e.g., no constraints of any type that limit capacity exist); and a minimum threshold on lot size exists where making net to gross deductions is not appropriate.

The description above skips some of the nuances that can be incorporated into the method. For example, the method should recognize planned densities<sup>4</sup> and other factors that affect densities. Examples include physical characteristics such as slope or policies that affect density (for example, natural resource policies that require areas of sites be preserved).

A key methodological issue is whether to conduct the analysis in aggregate (e.g., grouping like land types together) or by tax lot. This analysis uses an aggregate method because of the number of tax lots involved, and because of the complexities of conducting a site-by-site evaluation of development potential.<sup>5</sup> For example, lands in the medium density residential (MDR) plan designation can accommodate a broad range of housing types and densities, which requires a decision (and a justification for it) about what housing mix and density to use as an average. Our method does not require site specific assumptions; rather it applies average densities to land area to derive a dwelling unit estimate.

## 2.1 STEPS USED IN THE ANALYSIS OF THE ABILITY OF RESIDENTIAL LAND TO ACCOMMODATE NEW HOUSING

This section describes how we conducted the analysis. The input data and assumptions are: (1) results of the LCOG BLI by plan designation; (2) lot size; (3) net-to-gross factors; (4) results from an analysis of historical residential density in Eugene over

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<sup>3</sup> OAR 660-024-0010(6) provides the following definition: "Net Buildable Acre" consists of 43,560 square feet of residentially designated buildable land after excluding future rights-of-way for streets and roads. Thus, a gross acre is an acre that includes future rights-of-way for streets and roads. Net densities are always higher than gross densities. Sample net to gross calculation for single-family detached using a 25% net to gross factor: Gross density = net density \* (1-0.25). For example: net density of 6.0 dwelling units per acre equates to a gross residential density of 4.5 dwelling units per acre ( $6.0 * (1-.25)=4.5$ ).

<sup>4</sup> OAR 660-008-0010 states "The mix and density of needed housing is determined in the housing needs projection. Sufficient buildable land shall be designated on the comprehensive plan map to satisfy housing needs by type and density range as determined in the housing needs projection. The local buildable lands inventory must document the amount of buildable land in each residential plan designation." In short, the inventory and needs analysis must be by residential *plan designation*. Because of this rule, we use a method that results in estimates by plan designation rather than by zoning, or by housing type.

<sup>5</sup> More complex methods do not necessarily yield more reliable results because they often require more and more specific assumptions about the future which increases the so-called "cone of uncertainty."



the 2001 to 2008 period; and (5) constraints that are likely to decrease housing densities.<sup>6</sup> Appendix A includes a summary of assumptions applied to the analysis.

### Step 1: Analyze land base

The first step we took in evaluating housing potential was to review key characteristics of the vacant residential land base. Building from the LCOG inventory, we analyzed lands by slope, by size, and by constraint status. The inventory identifies 1,683 vacant, buildable acres within residential plan designations included in this analysis.<sup>7</sup> Table 1 shows vacant residential acres by plan designation.

**Table 1. Vacant residential acres by plan designation in the Eugene UGB as of 2008**

Size Class/Plan Designation	Acres
Low Density Residential	1,447
Medium Density Residential	170
High Density Residential	66
<b>Total</b>	<b>1,683</b>

Source: ECLA BLI, LCOG, 2009

### Step 2: Develop a framework for categorizing land

The categories that we use to develop the capacity estimates are important. Table 2 shows the preliminary categories which focus on plan designation, slope, and lot size.

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<sup>6</sup> Slope and wetlands are the constraints included in this analysis. The BLI excluded a number of lands for various reasons; none of the excluded lands are included in this analysis. See the BLI document for details.

<sup>7</sup> The following plan designations are included in this analysis: High Density Residential, Low Density Residential, and Medium Density Residential. Not included are the following mixed use plan designations: Mixed Use, High Density Residential Mixed Use; Medium Density Residential Mixed Use. Housing is not allocated to mixed use designated land due to Oregon Administrative Rules that require "clear and objective" standards for residential development (OAR 660-008-0015), although it is known that some housing will be built on mixed use land. The buildable land inventory identified a total of six vacant acres in these mixed use plan designations; thus the capacity for new housing is limited.

**Table 2. Primary categories for describing residential capacity**

Plan Designation/lot size	Slope (%)		
	<5%	5%-30%	30%
LDR			
<1 ac			
1-5 ac			
5+ ac			
MDR			
Etc.			

### Step 3. Develop net-to-gross factors

The lot size categories apply net-to-gross factors that build from the assumptions in the HNA and are applied as follows:

- <1 ac – no deduction
- 1-5 ac – 50% of assumed net to gross factor
- 5+ ac – 100% of assumed net to gross factor

ECO conducted an empirical analysis of net and gross acres to provide the foundation for the net-to-gross factor assumptions. Table 3 shows the results.

**Table 3. Net and gross acres by residential plan designation, Eugene UGB, 2008**

Plan Designation	Gross Acres	Acres in Roads	Net Acres	Net Acres as a Percent of Gross Acres
Low Density Residential	20,171	3,754	16,417	78%
Medium Density Residential	1,916	298	1,618	80%
High Density Residential	612	158	454	66%
<b>Total/Avg</b>	<b>22,700</b>	<b>4,211</b>	<b>18,489</b>	<b>76%</b>

Source: ECLA BLI, LCOG, 2009; analysis by ECONorthwest

### Step 4. Analyze historical density

Estimating the ability of vacant residential land to accommodate new dwelling units requires assumptions about buildable acres and density. The analysis is based on historical densities achieved over the 2001 to 2008 period. We chose this period because ORS 197.296(5)(a) requires cities to determine housing capacity based on data collected

since the last periodic review but allows a city to use a shorter time period if it will provide more accurate and reliable data about housing capacity. We selected this the 2001 to 2008 time period over the 1999 to 2008 period because it shows housing mix that occurred since the City's revised zoning ordinance went into effect in 2001.

To provide context for densities and the relationship between density and slope, we analyzed density by slope class and plan designation. Our initial hypothesis was that an inverse relationship would exist between density and slope – as slope increased, density would decrease. Table 4 shows the results. For most plan designations, little development occurred between 2001 and 2008 on slopes greater than five percent. The exception is low density residential (LDR). The results show lower densities in LDR for all development on slopes greater than five percent. Appendix A shows the supply of developable residential land within the Eugene UGB in Table A-2.

**Table 4. Analysis of residential net density (dwelling units per net acre) by slope category, 2001-2008**

Plan Designation	% Slope					Average
	0-5	5-15	15-25	25-30	30+	
Low Density Residential	5.7	3.8	3.5	3.9	NA	5.2
Medium Density Residential	10.1	10.1	No data	No data	NA	10.1
High Density Residential	28.8	Insufficient data	No data	No data	NA	29.1

Note: No data means that no development occurred in that category between 2001 and 2008; insufficient data for the high-density residential designation is based on the fact that only one development occurred in that designation which could not be considered enough data to determine a trend. Note that lands with slopes over 30% were excluded from the vacant land base and are not applicable to this analysis.

## Step 5. Deduct other constraints

We evaluated other constraints (e.g., landslides, wetlands) likely to reduce the ability of vacant residential land to accommodate new dwelling units. We evaluated geologic hazard data from the Oregon Department of Geology and Mineral Industries and concluded that (a) the data are limited and uncertain, and (b) there is substantial overlap with slope hazards. The City does not prohibit development in areas of geologic hazard; they require a geotechnical analysis prior to development. Thus, we believe that slope serves as a good proxy for geologic hazards.

We also included data from the Local Wetland Inventory (LWI), which includes wetlands that were not excluded due to other factors (e.g., federal ownership or other protections). Table 5 shows that very little land (2.5 acres) in the LWI exists on vacant residential land.

**Table 5. Acres in local wetland inventory, by plan designation, in the Eugene UGB, 2008**

Plan Designation	LWI Acres
Low Density Residential	2.0
Medium Density Residential	0.4
High Density Residential	0.0
Total	2.5

Source: Eugene local wetland inventory; analysis by LCOG

Developers are required to mitigate wetlands in the LWI, but the rules do not preclude development. Thus, it is reasonable to assume that some land will be developed, but not all land. With only 2.5 acres of LWI land, whatever development assumption we make has little affect on overall land need in the UGB. We used the assumption that 50% of LWI wetlands would develop in the analysis that follows.

### 3 RESULTS

Table 6 shows the results of the estimate of housing potential. The results show that, based on the empirically derived assumptions described in the previous section, Eugene has potential for 7,999 new dwelling units on vacant land. We consider this a reasonable and well-documented answer to the question of “if Eugene grows in the future like it has in the recent past, how much housing can we accommodate in the UGB?” The City may want to consider policy changes that will cause increases in housing density, so that Eugene’s future growth is substantially different from historical growth. These discussions would occur as part of the policy discussion in 2010 and beyond.

**Table 6. Estimated housing potential on vacant residential lands, Eugene UGB**

Plan Designation	Slope			Wetlands	Total
	0%-5%	5%-30%	30% (excluded)		
Low Density Residential	2,333	2,542	0	6	4,881
Medium Density Residential	1,074	740	0	1	1,815
High Density Residential	1,303	0	0	0	1,303
<b>Total</b>	<b>4,710</b>	<b>3,282</b>	<b>0</b>	<b>7</b>	<b>7,999</b>

Source: ECONorthwest

Note: lands with over 30% slope were considered unbuildable in the BLI

Table 7 shows some key elements of the analysis. It shows vacant residential acres by plan designation, dwelling unit (DU) potential, and average gross residential density. The average gross density is slightly higher than the observed gross residential density of 6.1 dwelling units per acre between 2001 and 2008. This is a function of type of residential acres that are vacant: while the largest portion of vacant land is in the low



density residential plan designation, average densities in the medium- and high-density residential plan designations increase the overall average.<sup>8</sup>

**Table 7. Housing potential summary based on historical densities observed between 2001 and 2008**

<b>Plan Designation</b>	<b>Vacant Acres</b>	<b>DU Potential</b>	<b>Average density (DU/Gross Ac)</b>
Low Density Residential	1,447	4,881	3.7
Medium Density Residential	170	1,815	10.7
High Density Residential	66	1,303	19.6
<b>Total</b>	<b>1,689</b>	<b>7,999</b>	<b>6.1</b>

Source: ECONorthwest

Note: Density assumptions based on historical densities observed between 2001 and 2008.

## 4 CONCLUSIONS

The estimates provided in this memorandum are based on analysis of data of the vacant land base and of development that occurred between 2001 and 2008. A typical baseline for any forecast – a starting point for discussion and further modeling using different assumptions – assumes that the future will be like the past. Regarding our analysis, reasons exist to argue otherwise, including (1) the land that developed between 2001 and 2008 is not the land that is available now, (2) the market conditions that existed in the 2001-2008 period do not exist now, and may be different in the future, (3) state and local policy, especially regarding the location and pricing of infrastructure, may change, and (4) external factors may change, some of which (e.g., demographic trends, climate change, energy prices) suggest that the future will trend towards more dense housing.

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<sup>8</sup> Rezoning LDR to MDR or HDR is a possible policy response, but it is a policy response and, thus, not part of the 2009 scope of work for the ECLA study.

## 5 APPENDIX A: ASSUMPTIONS

Table A-1 shows assumptions used in the analysis.

**Table A-1. Summary of assumptions**

### 1. Density Assumptions

Plan Designation	Slope		
	0%-5%	5%-30%	30% (excluded)
Low Density Residential	5.7	3.7	NA
Medium Density Residential	12.9	12.9	NA
High Density Residential	29.9	NA	NA

Source: Empirical analysis of residential development between 2001-2008

### 2. Base Net-to-Gross Factors

Plan Designation	Base Gross To Net	Net to Gross
Low Density Residential	78%	22%
Medium Density Residential	80%	20%
High Density Residential	66%	34%

Source: Empirical analysis of all residential land in the Eugene UGB

### 3. Lot Size Net-to-Gross Deductions

Lot Size	Percent of Base Factor
<1 ac	0%
1-5 ac	50%
5+ ac	100%

Source: Assumptions based on lot size

#### 4. Net-to Gross Factors by Lot Size

Plan Designation	<1 ac	1-5 ac	5+ ac
Low Density Residential	0%	10.9%	22%
Medium Density Residential	0%	10.0%	20%
High Density Residential	0%	17.2%	34%

Source: Derived from items 2 and 3

#### 5. LWI Wetland Development Factors

Plan Designation	LWI Acres	% Developable
Low Density Residential	2.0	50%
Medium Density Residential	0.4	50%
High Density Residential	0.0	50%
Total	2.5	

Source: Acres from LWI; % developable is an assumption

**Table A-2 Vacant developable residential land, gross acres, Eugene UGB**

Plan Designation	Slope			LWI Wetlands	Total
	<5%	5%-30%	30% (excluded)		
Low Density Residential	482	837	127	2.0	1,447
Medium Density Residential	98	71	0	0.4	170
High Density Residential	64	3	0	0.0	66
<b>Total</b>	<b>644</b>	<b>911</b>	<b>127</b>	<b>2.5</b>	<b>1,683</b>

Source: LCOG Buildable Land Inventory

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October 16, 2009

**TO:** Eugene City Council  
**CC:** Jason Dedrick  
**FROM:** Terry Moore, Beth Goodman, and Bob Parker  
**SUBJECT:** ECLA BASELINE ASSUMPTIONS

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## 1 BACKGROUND

ECONorthwest is conducting the Eugene Comprehensive Lands Assessment (ECLA). Though there are many reasons for conducting such an analysis, the main one directing the content and timing of the analysis is Oregon House Bill 3337, which requires Eugene to establish its own Urban Growth Boundary (UGB) separate from the joint metropolitan UGB that Springfield and Eugene has shared for about 25 years. The full scope of work for ECLA is described elsewhere. It includes creating many products to comply with state requirements for LCDC Goals 9, 10, and 14: a Buildable Lands Inventory (BLI), an Economic Opportunity Analysis (EOA), and a Housing Needs Analysis (HNA).

Those interim products (and others) must eventually lead to a comparison of estimates of the need / demand for buildable land (to accommodate employment and residential growth) to the estimates of the amount of buildable land for the City of Eugene. That comparison of land need to land supply will be the basis for a determination about whether land inside the Eugene portion of the existing metropolitan urban growth boundary is sufficient to accommodate Eugene's expected growth. That determination is where this project will end in December 2009. If the result is that land inside the UGB is unlikely to be sufficient to meet demand, the City of Eugene will subsequently evaluate policies that might expand the capacity of land inside the existing UGB (e.g., by increasing density), add land to the UGB, or both.

House Bill 3337 requires that Eugene establish a UGB and "demonstrate, as required by ORS 197.296, that its comprehensive plan provides sufficient buildable lands within an urban growth boundary established pursuant to statewide planning goals to accommodate estimated *housing* needs for 20 years."<sup>1</sup> The scope of work for ECLA

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<sup>1</sup> House Bill 3337 was codified in ORS 197.304. Emphasis added.



provides further direction. First, the Eugene City Council expanded the analysis to look not just at *residential* land (housing needs), but at *employment* land as well. Second, the scope is about collecting data and making extrapolations of land need based on existing policy and on market conditions and trends; it is not about researching, recommending, or adopting policies that could change those trends.

That last point led to a scope of work for 2008-2009 that is only part of a full UGB evaluation. It makes the analysis sequential rather than simultaneous. It does not work back and forth between estimates of land need, new policies that might change land need (e.g., policies to increase density), and new estimates of land need. Rather, it aims at making a determination of whether historical trends in growth and the type of land development that accommodates that growth (or divergences from those trends based on reasonable expectations about changes in market conditions) would result, over 20 years, in an amount of buildable land consumption that is equal to or less than the amount of buildable land estimated to be in the existing UGB now.

If so, then the City can use that determination to meet the requirements of HB 3337. If not, the City will probably need to do additional work to either (1) identify land-use efficiency measures to accommodate expected growth, (2) expand the UGB, or (3) both. The discussion of land-use efficiency measures or UGB expansion is beyond the scope of this project and beyond 2009. The scope of this project is limited to the collection and assessment of existing data to (1) estimate the existing supply of buildable land inside the Eugene portion of the current UGB, and (2) forecast the need for buildable land based on an extrapolation of recent market trends in the context of existing City policy (or reasonably expected changes in those market trends in the context of existing policy).

If the analysis in this study demonstrates that the City is unlikely have sufficient land within the UGB, that does *not* mean that the City must expand its UGB. Rather, it means that the City must take another step to make that determination: it must identify, evaluate, and discuss policies it could adopt to reduce the land deficiency. The City's ultimate determination of whether the UGB needs to be expanded must be done in the context of policies that it will adopt that can reasonably be assumed to reduce the need for that expansion (these policies are referred to collectively as "land -use efficiency measures"). Evaluation of efficiency measures, if required, will occur in 2010 and beyond.

The written products for this project will ultimately comprise dozens of analyses, tables, and maps. Making sense of them as an integrated analysis is difficult enough for people involved in the analysis, and more difficult still for community members who want to understand the implications for City land-use policy at a general level. With that point in mind, ECONorthwest proposed in its work plan that the technical information be consolidated and represented in land-use variations. The most important land-use variation, and the one that the staff technical work and CAC review

has focused on, is the one related to historical trends and current policies in land use consumption (referred to as *the baseline* variation). Where there is uncertainty or reasonable differences of opinions about some of the assumptions that compose the baseline variation, then the intent is to run some variations on this scenario to test how the need / supply comparison is affected. Those variations are described in a separate memorandum.

The remainder of this memorandum discusses baseline assumptions in the land needs analysis. The framework and analysis that describes the rationale for the information summarized below is in previous memoranda that ECONorthwest presented to the CAC and will be incorporated into the final products for ECLA.

We organize and discuss the baseline assumptions in three categories: those that relate to (1) employment land (commercial and industrial), (2) residential land, and (3) public and semi-public land. For each of the key assumptions we provide some introductory text to explain what the assumption is and how it fits into the needs analysis, and then summarize information under four headings:

- Potential range of assumption: What is a reasonable, defensible range, and on what basis is that claim made?
- CAC and TAC discussion: What did the ECLA Community Advisory Committee and Technical Advisory Committee have to say about this assumption?
- Current technical recommendation for baseline assumption: Given the previous two points, what is this memorandum recommending as the baseline assumption?
- Data source: More information about the basis for the recommendation.

## 2 BASELINE ASSUMPTIONS

Table 1 lists the assumptions that are needed to model land need for the Eugene UGB over the 2010-2030 period; underlining denotes what ECONorthwest believes to be a key assumption. Key assumptions are those that (1) potentially have a large impact on land needs, and (2) are most likely to be affected by City policies. Subsequent sections of this memorandum provide information about baseline assumptions as they relate to historical data.

**Table 1. Baseline assumptions for modeling land need**

<b>Employment land needs</b>	<b>Residential land needs</b>	<b>Public and Semi-Public Land Needs</b>
<u>Employment growth</u>	Population growth	Park Land
Share of employment by category	Population in group quarters	Neighborhood Parks
Industrial	Persons in household	Community Parks
Commercial	Residential vacancy rate	Natural Areas
Retail	<u>Housing mix</u>	Other Parks
Government	<u>Housing density</u>	Schools
<u>New employment in non-employment PD</u>	Residential development in commercial PD	4J School District
<u>New employment in existing built space</u>	Net to Gross Factor	Bethel School District
<u>Commercial Redevelopment</u>	<u>Residential redevelopment</u>	Public Operations and Facilities
<u>Employment Density</u>		Semi-public uses
Net to Gross Factor		

### 2.1 EMPLOYMENT LAND NEED: BASELINE ASSUMPTIONS

The analysis of employment land need is driven by an analysis of employment growth, Eugene's competitive advantages, the types of firms that may locate in Eugene, and the site needs of the firms that may locate in Eugene. The employment land need must meet the State requirements of Goal 9 and OAR 600-009. The framework and full analysis of employment land need that meets State requirements will be available in the Economic Opportunities Analysis, which will be part of the final report. This section discusses the baseline assumptions necessary for determining the amount of land needed for employment over the 20-year planning period.



## Employment growth

Employment growth is the amount of growth in jobs reasonably expected in Eugene over the 2010 to 2030 period. We exclude government employment growth because government land need is accommodated through public and semi-public land needs, evaluated separately. Changes in the forecast of employment growth directly result in changes in need for employment land.

Forecasting employment requires two fundamental assumptions: (1) an estimate of current employment to provide the basis for forecasting future employment and (2) a rate of future employment growth.

- **Employment base.** Eugene had approximately 125,000 employees in 2006.<sup>2</sup> Detailed information about changes in employment in Eugene is not readily available for 2008 or 2009. In the absence of information about the affects of the recession on Eugene, we developed an employment base for Eugene in 2010 based on assumptions, including: (1) Eugene's employment base shrank by nearly 7,200 jobs as a result of the movement of employees to the new RiverBend Hospital, the closure of Hynix, and as a result of job layoffs in the current recession and (2) Eugene's job market will not grow during 2009.<sup>3</sup> Based on these assumptions, the 2010 employment base will be 116,960 employees located within the Eugene UGB.
- **Forecast rate.** The historical long-term employment growth rate for Eugene is not easily available because the State does not publish employment data by city. It is reasonable to assume that Eugene's employment grew at the same rate or faster than employment in Lane County because Eugene's employment accounted for 60% of employment in Lane County in 2006.

Employment in Lane County grew at 1.7% annually between 1980 and 2007, with an increase of more than 55,300 jobs. Employment growth in the County was slowest during the 1980's (at 1.5% average annual growth) and fastest during the 1990's (with 2.1% average annual growth).

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<sup>2</sup> The employment forecast is based on the best available data, which is collected by the Oregon Employment Department and modified by LCOG to correct for errors in the data about exactly where in Lane County particular employers were located. The most recently available version of this data is for 2006.

<sup>3</sup> We assumed that employment in Eugene decreased proportionate to employment decreases in Lane County



There is no single “right” way to forecast employment growth. There are, however, two methods for forecasting employment growth that, independent of their technical merits, are legally sanctioned as “safe harbors”<sup>4</sup>: (1) assume that employment will grow at the same rate as population (OAR 660-024-0040(8)((a)(ii))), or (2) assume that employment will grow at the same rate as the Employment Department’s forecast for Lane County.

- Potential range of assumption: Eugene’s employment growth rate could be expected to be similar to past County growth rates, averaging about 1.7% average annual growth and ranging between 1.5 and 2.1% average annual growth. Applying the safe harbors for employment growth results in lower employment growth rate assumptions. Assuming that employment will grow at the same rate as population (a 0.9% annual growth) results in addition of about 20,000 jobs.<sup>5</sup> Assuming that employment in Eugene will grow at the same rate as the one used in the Employment Department’s forecast for Lane County (a 1.4% annual growth rate) results in the addition of about 34,500 jobs, not including government jobs, which are accounted for in public and semi-public land needs.
- CAC and TAC discussion: Several CAC and TAC members said the assumption that Eugene’s employment will grow at the rate forecasted for Lane County (1.4% annual growth) is reasonable, and probably the more reasonable of the two growth rates. Eugene is the central city and employment center of the region: it is reasonable to expect employment to grow faster than population. On the other hand, a difference in growth rates suggests greater commuting to Eugene from outlying cities (e.g., Veneta).
- Current technical recommendation for baseline assumption: We recommend assuming 1.4% annual employment growth, based on: (1) the assumption that Eugene is the regional economic center of Lane County and likely to have the greatest employment growth, and (2) average employment growth in Lane County over the 1980 to 2007 was 1.7% average annual growth.
- Data source: The employment base is a point in time estimate for 2006 based on: Quarterly Census of Employment and Workforce from the OR Employment Department and Total Employment in Lane County from the US Bureau of Economic Analysis.

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<sup>4</sup> Safe harbors are optional assumptions that satisfy the requirements of Goals 9, 10, or 14. Use of a safe harbor as described in the Oregon Administrative Rules will satisfy the requirement for which the safe harbor is prescribed. A safe harbor is not the only way or necessarily the preferred way to comply with a requirement but correct use of a safe harbor results in an assumption that the DLCD will accept.

<sup>5</sup> This assumption is based on the population forecast for the Eugene UGB presented in the “Lane County Rural Comprehensive Plan General Plan Policies 1984”, updated June 2009. Population in the Eugene UGB is forecast to grow at about 0.88% annually.

## Distribution of employment by land-use type

The forecast of employment growth can be divided into broad categories of land use based on the characteristics of land needed: commercial office, commercial retail, industrial, and government. In 2006, the share of employment in each of these categories was: 54.3% commercial, 13.1% retail, 18.2% industrial, and 14.4% government.<sup>6</sup>

Note that the effect of this assumption is diminished to some degree by the fact that the *amount* of employment does not change – the *composition* changes. Thus, the same number of employees will need built space to work in, which will need land be constructed. The difference is that the density of employment growth will be different for some types of development. But the differences in density among commercial office, retail, and government are relatively small, so shifting among those has little impact on land need. The bigger effect comes from shifts between those categories and industrial, which has lower density.

- Potential range of assumption: There is no “correct” way to forecast the future composition of Eugene’s economy. The greatest uncertainty is in estimating the amount of industrial employment will Eugene have in 20 years. Industrial employment, especially manufacturing, declined from 36% of Lane County’s employment in 1980 to 26% of the County’s employment in 2007, consistent with state and national trends. Possible approaches to forecasting the future composition of Eugene’s economy are:
  - Assume the future composition of Eugene’s economy will look like the present and use the existing distribution of employment by land-use type;
  - Assume that employment in non-industrial sectors will grow more than employment in industrial based on County, State, and national historical trends. An example of the shift in the mix: 55% commercial, 15% retail, 15% industrial, and 15% government; or
  - Assume that the amount of industrial employment will be similar to other major cities or counties in the Willamette Valley. Industrial employment accounted for the following share of employment: 19% in Salem and 24% in Portland.<sup>7</sup>

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<sup>6</sup> Growth in government employment is accounted for through the public and semi-public land needs process, rather than through the employment land needs analysis. This assumption accounts for the closing of Hynix, which reduced the share of industrial employment in Eugene.

<sup>7</sup> Mix of employment for Salem and Portland is based on information from Oregon Prospector. Accessed at: <http://oregonprospector.com/>

- Use the mix of employment forecast in the Employment Department's forecast for Lane County: 46% commercial, 13% retail, 23% industrial, and 18% government.
- CAC discussion: Some CAC members said that the current mix of employment seems more likely to continue into the future than the mix in the Employment Department's forecast for Lane County.
- Current technical recommendation for baseline assumption: Given the long-term state and national trends of decreasing share of employment in industrial sectors, especially manufacturing, it seems unlikely that manufacturing employment in Eugene will increase substantially. We recommend using the current mix of employment (54.3% commercial, 13.1% retail, 18.2% industrial, and 14.4% government), given the uncertainty of growth in manufacturing.
- Data source: The employment base is a point in time estimate for 2006 based on Quarterly Census of Employment and Workforce from the OR Employment Department and Total Employment in Lane County from the US Bureau of Economic Analysis.

### **New employment accommodated on land not designated for employment**

Some employment is currently accommodated on land that is located in a residential or other non-employment plan designation. In 2006, about 15% of covered employment<sup>8</sup> was located in residential and other non-employment designations. This includes businesses located in non-employment plan designations (such as a corner store in a neighborhood) and people working from home. This estimate excludes workers that are not covered by unemployment insurance, such as sole proprietors. Although these workers may be more likely than covered employees to locate on land with non-employment designation, we do not have information about where non-covered workers are located. In the absence of this information, we assumed that covered and non-covered workers will locate on land in non-employment plan designations in the same proportions and that 15% of all employment will locate on land in non-employment plan designations.

- Potential range of assumption: There is little information available about the amount of employment accommodated on land not designated for employment in Eugene, beyond the data reported above. In work for other Oregon cities, ECO has generally found and assumed that between 10% and

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<sup>8</sup> *Covered* employment is employment that the state tracks because it is covered by unemployment insurance and reported. Covered employment information is available at the city-level. *Total* employment, which includes all employment, is tracked by the U.S. Bureau of Labor Statistics and is not available at the city-level. Comparison of covered and total employment in Lane County showed that covered employment was 75% of total employment in the County in 2006. Covered employment excludes sole proprietors and other workers not covered by unemployment insurance.



20% of employment is accommodated in residential or other non-employment plan designations.

- CAC and TAC discussion: Some CAC and TAC members suggested that the share of employment accommodated on land not designated for employment uses may increase in the future, based on trends in working from home.
- Current technical recommendation for baseline assumption: We recommend assuming that 15% of non-industrial employment will be accommodated on land not designated for employment. The basis for this recommendation is that the 2006 covered employment data is the best available and we have little data as a basis for assumptions about changes in the amount of employment that may locate in non-employment designations in the future.
- Data source: The estimate of 15% of covered employment on land not designated for employment is based on employment data from 2006. The data source for the employment base was Quarterly Census of Employment and Workforce from the OR Employment Department, overlaid with the LCOG GIS data showing the City of Eugene Plan Designations.

### **New employment accommodated in existing built space**

As firms add employees they may fit many of them into existing office spaces. That would occur if current vacancy rates were much higher than average (because future employment growth could then be partially accommodated in existing space until and natural, frictional vacancy rate was reached). It could also occur in occupied buildings through filling vacant cubicles or offices or increasing density of use existing workspaces (e.g., by adding new cubicles). There is no study that quantifies how much employment is commonly accommodated in existing built space over a 20-year period in a city.

- Potential range of assumption: There is no data that document the amount of employment located in existing built space. Clearly some employment is accommodated through this type of intensification of use but, equally clearly, not all employment can be accommodated this way. ECO typically assumes that 5% to 10% of employment will be accommodated in existing built space. Given the current high unemployment rate, it is reasonable to assume that Eugene has greater capacity to accommodate employment growth in existing built space. A range of between 5% to 20% of new employment locating in existing built space is a reasonable assumption.

Obviously, such an assumption cannot apply indefinitely, so it presumes that (1) the use of existing space is not so intense that it cannot be economically increased, and (2) economic conditions, competitiveness, and standard business practices for reducing cost make a 5% to 20% increase in space utilization reasonable.



- CAC and TAC discussion: CAC members' opinions were divided on this assumption, with CAC members suggesting increasing and decreasing it.
- Current technical recommendation for baseline assumption: We recommend assuming that 10% of new employment will locate in existing built space.
- Data source: ECONorthwest has typically assumed that about 10% of employment would locate in existing built space for similar studies in other cities. The rationale for this assumption is: (1) in the short-term, commercial vacancy rates are likely to be higher than normal (because of the current recession) and (2) existing firms have a large incentive to accommodate new employees in their existing offices because of the cost of moving and leasing additional office space. Given the current high rate of unemployment, it may be reasonable to assume that 20% of employment growth will be accommodated in existing built space.

### **New employment accommodated through redevelopment**

Goal 9 strongly encourages cities to develop policies to encourage redevelopment of commercial and industrial land, especially brownfields. Redevelopment is any development that happens on land that has been classified as developed (i.e., not vacant). This definition is consistent with the definition of developed land in OAR 660-009.

For the purposes of this study, we define redevelopment as development that (1) occurs on land with existing development, *and* (2) results in a net increase in employment density. The second condition means that the replacement of a building used for employment by a new building with similar employment density would not be counted as redevelopment. This definition includes infill on partially vacant land.

We can see that redevelopment has occurred in Eugene over the last 20-years. Retail redevelopment is especially common, such as the redevelopment that has occurred along Coburg Road, like Oakway Center. We can reasonably assume that some employment growth will be accommodated through redevelopment of existing commercial and industrial land over the next 20-years.

Determining how much redevelopment has actually occurred is difficult because data about redevelopment (or indicators of redevelopment) are not maintained. While the City collects data for industrial and commercial building permits, there is no way to determine which of these permits was issued for redevelopment of a site, short of sorting through the permits one-by-one. We could estimate redevelopment using assumptions about land value and potential to redevelopment, this methodology provides a gross indicator of redevelopment potential but little indication of how much redevelopment is *likely* to occur over the planning period.

As a result, we do not have a factual basis to estimate the amount of employment growth that may be accommodated through redevelopment. In previous studies conducted by ECONorthwest and other organizations, redevelopment has been addressed by assuming that a certain percentage of employment growth will be addressed through redevelopment, generally from 5% to 20% of new residential development.<sup>9</sup>

- Potential range of assumption: We found no studies or data that attempt to estimate the amount of commercial and industrial infill and redevelopment that occurred in Eugene over the past decade. It is clear, however, that infill and redevelopment occurred, especially along Coburg Road. A 2002 study in the Portland Metro area suggested that about 50% of commercial and 35% of industrial of employment land would be accommodated through redevelopment over the 2002-2022 period.<sup>10</sup>
- CAC and TAC discussion: CAC and TAC did not discuss this assumption in great enough depth to have suggestions for different assumptions from more than one committee member. One TAC member suggested that the most appropriate places for redevelopment are in mixed use centers and downtown.
- Current technical recommendation for baseline assumption: Our preliminary recommendation is to assume redevelopment of 10% of forecast industrial employment, 15% of commercial employment, and 35% of retail employment.
- Data source: No data about commercial and industrial redevelopment is currently available.

## Employment density

Employment density is the density of employment (measured in employees per acre) locating in commercial and industrial plan designations. Forecasting employment land need based on forecasts of employment growth requires a conversion, either explicit or implicit, of employment growth (number of new employees) to land need based on assumptions about employment density. This can be accomplished through use of assumptions about the number of employees per acre (EPA). In 2006, Eugene's overall employment density was 22 employees per acre. Employment densities in Eugene varied by use and mixture of uses, as follows:

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<sup>9</sup> ECONorthwest used this method in studies for the following cities: Ashland, McMinnville, The Dalles, Pendleton, Ontario, and Sandy. Metro uses a "refill" rate to account for employment accommodated through redevelopment. In Metro's 2002 Urban Growth Report, they assumed a refill rate of about 26% for commercial and industrial lands.

<sup>10</sup> Metro's "2002-2022 Urban Growth Report: an Employment Land Needs Analysis," December 2002. Accessible from <http://library.oregonmetro.gov/files/ugr-employment.pdf>

- **Industrial** densities ranged from about 5 employees per gross acre (EPA) in heavy industrial areas to nearly 20 EPA in light or campus industrial.
- **Commercial** densities varied from 30 EPA in mixed retail and office sites to 93 EPA in downtown.
- **Retail** densities varied from about 20 EPA to about 37 EPA at Oakway Center.

Existing employment densities are documented more completely in the memorandum to the CAC “Preliminary Estimate of Employment Land Need in Eugene During the 2010-2030 Period” (dated February 5, 2009).

- Potential range of assumption: The potential ranges of assumptions are described above.
- CAC and TAC discussion: CAC and TAC did not have many comments or questions about the employment density data presented.
- Current technical recommendation for baseline assumption: We recommend making the following assumptions about employment density, based on the average densities in Eugene: 13 EPA for industrial, 68 EPA for commercial, and 23 EPA for retail.
- Data source: Employment densities are based on employment in 2006 from the Quarterly Census of Employment and Workforce from the OR Employment Department, City of Eugene Plan Designations, and LCOG GIS data about land in employment plan designations.

## Converting net acres to gross acres

The data about employment density presented above is in *net* acres, which does not include land for public right-of-way. Future land need for employment should include land in tax lots needed for employment plus land needed for public right-of-way. One way to estimate the amount of land needed for employment including public right-of-way is to convert from *net* to *gross* acres based on assumptions about the amount of land needed for right-of-way.<sup>11</sup> A net to gross conversion is expressed as a percentage of gross acres that are in public right-of-way. For example, a net to gross conversion factor of 15% means that 15% of gross acres are in public rights-of-way.

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<sup>11</sup> OAR 660-024-0010(6) uses the following definition of net buildable acre. “Net Buildable Acre” consists of 43,560 square feet of residentially designated buildable land after excluding future rights-of-way for streets and roads. While the administrative rule does not include a definition of a gross buildable acre, using the definition above, a gross buildable acre will include areas used for rights-of-way for streets and roads. Areas used for rights-of-way are considered unbuildable.



- Potential range of assumption: We examined net to gross ratios for existing commercial and industrial development on selected sites within Eugene. We found the following net to gross factors:
  - Commercial sites had a net to gross factor ranging from: about 17% in community retail centers, 31% in Downtown, and 34% in the area directly south of Downtown Eugene.
  - Industrial sites had a net to gross factor averaging about 14%, with no substantial difference between light and heavy industry.

Work with other cities has shown similar net to gross factors. ECO typically assumes a net to gross factor of 15% to 20% for employment lands.

- CAC and TAC discussion: CAC and TAC did not provide comments on the net-to-gross factor.
- Current technical recommendation for baseline assumption: We recommend assuming a 20% net-to-gross factor for commercial land need, based on the assumption that future commercial employment will be in areas more like community retail centers and less like Downtown. These areas will need less land for public rights-of-way.

We recommend assuming a 15% net-to-gross factor for industrial land need, which is consistent with observed need for public rights-of-way in industrial areas in Eugene.

- Data source: The net-to-gross factors are based on data from the 2006 Quarterly Census of Employment and Workforce from the OR Employment Department and City of Eugene Plan Designations. This assumption is generally consistent with the assumptions in the MetroPlan about land needed for public rights-of-way.

## 2.2 RESIDENTIAL LAND NEED: BASELINE ASSUMPTIONS

The analysis of residential land need is driven by an analysis of housing need. The housing needs analysis must meet the State requirements of Goal 10, ORS 197.296, and OAR 600-008. The framework and full analysis of employment land need that meets State requirements will be available in the Housing Needs Analysis, which will be part of the final report. This section discusses the baseline assumptions necessary for determining the amount of land needed for housing over the 20-year planning period.

The housing needs analysis presents information about residential development by housing types. There are multiple ways that housing types could be grouped. For example, housing types could be grouped by: (1) structure type (e.g., single-family detached, apartments, etc.), (2) tenure (e.g., distinguishing unit type by owner or renter units), (3) housing affordability (e.g., units affordable at given income levels) or (4)



some combination of these categories. There are probably other ways to group housing types.

For the purposes of this study, we grouped housing types based on: (1) whether the structure is stand-alone or attached to another structure and (2) the number of dwelling units in each structure. The housing types used in this analysis are:

- **Single-family detached** includes single-family detached units, secondary dwelling units, and manufactured homes on lots and in mobile home parks.
- **Single-family attached** includes row houses, townhouses, and condominiums.
- **Two to four units** includes structures with two to four dwelling units, such as duplexes, tri-plexes, and quad-plexes.
- **Five or more units** includes structures with five or more dwelling units per structure.

The reason for choosing these categories of housing type for the analysis is that the City collects data about residential development based on these structure types.

Using these structure types to forecast need for new housing does not provide information about housing issues that elected officials may want to consider. Two examples of housing types that are not shown in this categorization of housing types are:

- **Larger than average student households.** Recent development trends in neighborhoods near the University have included student housing that have higher than average household size. These structures may have three or four dwelling units per structure but each dwelling unit may have five or more bedrooms. These housing types affect the surrounding neighborhood differently than units with smaller household sizes, such as by potentially generating higher demand for parking spaces than units with fewer persons per unit.
- **Affordable, small single-family units.** The housing needs analysis discusses the need for affordable housing, both for homeownership and rental housing. Small single-family units in established neighborhoods are one example of affordable ownership units. These units may be located in established neighborhoods where redevelopment is occurring, decreasing the availability of these housing types.

These issues are discussed in the housing needs analysis, where data is available about these housing types.

## Population growth

A 20-year population forecast (in this instance, 2010 to 2030) is the foundation for estimating needed new dwelling units. If Lane County did not have an adopted population forecast, we would need to consider a reasonable range of population growth. Lane County, however, adopted a new coordinated population forecast that covers the 2010 to 2030 period. The City has taken action on a Metro Plan Amendment to formally adopt this forecast for use in all future planning efforts and is awaiting similar action by Springfield and Lane County. The forecast projects that population inside the Eugene UGB will grow from 177,775 people in 2010 to 211,783 people in 2030, an increase of 34,008 people between 2010 and 2030.<sup>12</sup>

- Potential range of assumption: The adopted Lane County population forecast is the only assumption about population growth currently under consideration in ECLA.
- CAC and TAC discussion: CAC and TAC were not asked for different assumptions about population growth because this is a policy decision based on the Lane County coordinated population forecast, which the City Council is expected to adopt.
- Current technical recommendation for baseline assumption: We recommend using the Lane County population forecast for Eugene.
- Data source: Lane County adopted coordinated population forecast, *Lane County Rural Comprehensive Plan*, updated June 2009.

## Population in group quarters

Persons in group quarters do not consume standard housing units: thus, any forecast of new people in group quarters is typically backed out of the population forecast for the purpose of estimating housing demand. Group quarters can have a big influence on housing in cities with colleges (dorms), prisons, or a large elderly population (nursing homes). In general, any new requirements for these housing types will be met by institutions (colleges, government agencies, health-care corporations) operating outside what is typically defined as the housing market. Group quarters, however, require land and are typically built at densities that are comparable to multiple-family dwellings.

The U.S. Census tracks the number of people in group quarters. The share of Eugene's population living in group quarters was 5.5% in 1990, 4.4% in 2000, and 5.3% in 2007.

One of the factors that will affect the amount of Eugene's population housed in group quarters is enrollment growth at the University of Oregon and the University's

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<sup>12</sup> The population forecast is from Table 1.1 in the revised *Lane County Rural Comprehensive Plan General Plan Policies 1984*, updated June 2009.

provision of dormitory space. The University projects growth of about 3,700 students over the 2009 to 2019 period (from 20,300 students in 2009)<sup>13</sup> and plans to build an additional approximately 1,500 bed spaces over the 2007 to 2017 period.<sup>14</sup>

- Potential range of assumption: The U.S. Census' range of people in group households (between 4.4% to 5.5% of population) is a reasonable range for this assumption. There are two main factors that may affect the share of population in group quarters: (1) the aging population and (2) growth in the University of Oregon's student body.
  - The aging of the population may result in an increase in share of seniors living in group housing, especially nursing homes. Housing types for the aging population range from congregate facilities (e.g., assisted living) to age restricted active adult retirement communities, which have a range of single-family and multifamily housing types. The age and health of seniors impact their housing choice. Younger, independent seniors have a preference for aging in place or choose housing that allows them greater independence, such as age restricted communities. As seniors age or their health deteriorates, housing choices may include assisted living facilities and nursing homes. It is difficult to estimate how much the aging of the population and greater housing choice for seniors will affect the share of population in group quarters.
  - Growth in the University of Oregon's student population may result in an increase in the share of population in group quarters. The effect of growth in the student body at the University on the share of Eugene's population in group quarters will depend on actual growth in the student body and whether the University builds as much student housing as has been proposed. If the University builds as much housing as proposed, it may result in an increase in population in group quarters, which would result in a decrease in need for new housing units.
- CAC and TAC discussion: Some CAC members have expressed concern that the assumption account for growth in the student population at the University of Oregon and the University's plans for building additional dorm rooms.

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<sup>13</sup> University of Oregon Draft Academic Plan, 1/12/09. Accessed on 2/9/2009 from: [http://provost.uoregon.edu/files/provost/uploads/Academic\\_plan\\_1\\_12\\_09.pdf](http://provost.uoregon.edu/files/provost/uploads/Academic_plan_1_12_09.pdf)

<sup>14</sup> University of Oregon memorandum, Strategic Housing Plan Consultant's Report, March 26, 2008. Accessed on 2/9/2009 from: <http://uplan.uoregon.edu/projects/Project%20Sums%20for%20Web/HousingPlan/UO%20HSP%20FINAL%20MAIN.pdf>



- Current technical recommendation for baseline assumption: We recommend assuming that 5.3% of Eugene's 2030 population (1,870 people) will live in group quarters.
- Data source: The assumption about population in group quarters is based on the share of Eugene's population in group quarters in 2007 according to the U.S. Census, American Community Survey, 2007. This assumption considers long-term trends in share of population in group quarters in 1990, 2000, and 2007, based on U.S. Census data in those years.

## Persons per household

In 1990, traditional families (married couple, with one or more children at home) accounted for 25% of all households in Oregon. In 2007 that percentage had dropped to 20%. Consistent with that trend, the average household size has decreased over the past five decades and is likely to continue decreasing. The average household size in Oregon was 2.60 in 1980, 2.52 in 1990, and 2.51 in 2000 and 2.49 in 2007. One and two person households made up the majority of Oregon households in 1990. The direct impact of decreasing household size on housing demand is that smaller households means more households, which means a need for more housing units even if population were not growing.

Average household size in Eugene followed the same pattern as the State: household sizes have decreased. In 1990, the average household had 2.30 persons per household, dropping to 2.27 in 2000, and 2.25 persons per household in 2007. OAR 660-024 established a "safe harbor" assumption for average household size – which is the figure from the most recent Census.

- Potential range of assumption: We could assume that household sizes will change over the planning period or we could use the safe harbor and assume that household sizes will continue at 2.25 persons per household.

The historical change in household size in Eugene over the last quarter-century is a relatively slow decrease: from 1980 to 2007 the average annual rate of decrease was on the order of  $1/10^{\text{th}}$  of 1% per year. If Eugene's household size continues to decrease, Eugene will need more dwelling units than the current forecast projects to accommodate Eugene's expected population growth.

Trends in student housing suggest that Eugene's household size may increase slightly over the planning period. One type of student housing that has been built more frequently in Eugene are large units with five or more bedrooms and shared common space and kitchen facilities. These dwellings are most common in neighborhoods near the University and may have five or more students living in them. While it seems that the market for this type of housing is limited by student housing demand and student housing preferences,



continued growth in this type of housing could increase average household size slightly across the City. The result of increased household size would be a decrease in the number of new dwelling units needed to accommodate Eugene's expected population growth.

- CAC and TAC discussion: Some CAC members think that we should assume that household sizes will change in the future. CAC members have expressed concern at development of buildings with more than the usual number of bedrooms (five or six bedrooms) in the same dwelling unit. This creates higher than normal persons per household in the neighborhoods with this type of development, which creates other policy challenges for these neighborhoods (e.g., parking demand). Other CAC members identified this as a trend localized around the University, which would not significantly impact household size across the City. The housing needs analysis will discuss this trend.
- Current technical recommendation for baseline assumption: We recommend using the safe harbor assumption that household sizes will remain at 2.25 persons per household. Forecasting future household sizes requires considering a number of demographic and social shifts that are complex: continued aging of the population, changes in ethnicity, and changes in student housing preferences. The changes in household size from these factors may cancel each other out or may affect household size in specific areas of the City.
- Data source: The assumption about household size is based on a point in time estimate based on 2007 U.S. Census, American Community Survey, data.

## Residential vacancies

Housing vacancy rates are cyclical. Low vacancy rates signal an excess of demand relative to supply, which brings new construction and, eventually, higher vacancy rates. Vacancy rates for rental and multiple family units are typically higher than those for owner-occupied and single-family dwelling units.

In 1990 the Census reported a vacancy rate for all housing of 3.6%, increasing to 5.4% in 2000, and 6.3% in 2007. While it may appear that Eugene's vacancy rate has increased over the 1990 to 2007, Eugene's vacancy rate has probably fluctuated throughout each year. The Census' vacancy rate data is accurate for the date of the Census (April 1) but the vacancy rate may change significantly throughout the year based on activities at the University of Oregon. For example, Eugene may have a higher vacancy rate in July, when most students have left town, and a lower vacancy rate in October, with the start of the University's school year.

Since state law and this project requires a 20-year forecast, and one should expect several housing cycles during that period, this project should be looking for an average

vacancy rate (the “natural” rate of vacancy). OAR 660-024 established a “safe harbor” assumption for average residential vacancies – which is the figure from the most recent Census.

- Potential range of assumption: Census data probably describes a reasonable range of vacancy rates: 3.5% to 6.5% vacancy. ECO has typically found vacancy rates of 2% to 9% in other cities, depending on the type of housing and local housing market conditions.
- CAC and TAC discussion: Several CAC members agreed the most reasonable vacancy rate assumption would be 5%. That is an average rate that ECO has used in other studies of this type.
- Current technical recommendation for baseline assumption: We recommend assuming that an average of 5% of new dwellings will be vacant, based on historical vacancy data and suggestions from the CAC.
- Data source: The assumption about vacancy rate is based on a point in time estimate for 2007 from the U.S. Census, American Community Survey.

## Housing mix

Housing mix is the mixture of housing (structure) types (e.g., single-family detached or apartments) within a city. State law requires a determination of the future housing mix in the community and allows that determination to be based on different periods: (1) the mix of housing built in the past five years or since the most recent periodic review, whichever time period is greater, (2) a shorter time period if the data will provide more accurate and reliable information, or (3) a longer time period if the data will provide more accurate and reliable information (ORS 197.296). This memorandum presents housing mix data for two periods (1) housing mix over the 2001 to 2008 period and (2) housing mix over the 1990 to 2007 period.

Table 2 shows the housing mix for residential development over the 2001 to 2008 period. We selected this time period over the 1999 to 2008 period because it shows housing mix that occurred since the City’s revised zoning ordinance went into effect in 2001. About 69% of housing developed was single-family detached (including manufactured homes), 10% was single-family attached, and the remaining 21% were structures with two or more units. The share of single-family housing varied from a high of 84% in 2001 to a low of 43% in 2007.

A caveat about the information presented in Table 2: the data about residential development is both complex and somewhat scant. Each development may have idiosyncrasies, such as factors that limit development density or footprint (such as a stream). Moreover, it is typical to see cycles in building: for example, a lot of single-family units get built so then a lot of multifamily follows. We think it is more appropriate to look at building trends broadly and on average over a several-year period (e.g., for the entire 2001 to 2008 period) than on a year-by-year basis.

**Table 2. Percent of housing by structure type, 2001-2008, Eugene UGB**

Year	Single-family detached	Single-family attached	Two to four units	Five or more units
2001	86%	2%	4%	8%
2002	85%	0%	4%	11%
2003	90%	1%	7%	1%
2004	67%	1%	4%	28%
2005	68%	4%	7%	21%
2006	52%	36%	6%	6%
2007	45%	26%	9%	19%
2008	54%	1%	5%	40%
<b>Average</b>	<b>69%</b>	<b>10%</b>	<b>6%</b>	<b>15%</b>
<b>Total Units</b>	<b>4,503</b>	<b>660</b>	<b>371</b>	<b>998</b>

Source: LCOG GIS data and City of Eugene Planning Department, 2008

Table 3 shows changes in the mix of Eugene's housing stock (all housing in the City) between 1990 and 2007, based on U.S. Census data. The share of single-family detached housing (including manufactured) was relatively stable over the seventeen-year period, accounting for about 61% of housing stock in Eugene.

**Table 3. Housing stock by structure type, Eugene city limits, 1990, 2000, and 2007**

Structure type	1990		2000		2007		New Units 1990-2007		
	Units	Percent	Units	Percent	Units	Percent	Units	Percent total	Percent Increase
Single-family detached	28,768	60%	36,151	59%	41,923	61%	13,155	63%	46%
Single-family attached	3,264	7%	4,011	7%	4,828	7%	1,564	7%	48%
Two to four units	4,886	10%	5,877	10%	6,773	10%	1,887	9%	39%
Five or more units	11,073	23%	15,293	25%	15,371	22%	4,298	21%	39%
<b>Total</b>	<b>47,991</b>	<b>100%</b>	<b>61,332</b>	<b>100%</b>	<b>68,895</b>	<b>100%</b>	<b>20,904</b>	<b>100%</b>	<b>44%</b>

Source: U.S. Census 1990 and 2000, American Community Survey 2007

Several CAC members have expressed concerns about the categories of housing shown in Tables 2 and 3. Suggestions for changes to mix include: (1) combine some categories of structure type, such as apartments with 5 to 19 units and apartments with 20 or more units and (2) consider other structure types, such as student housing with more than four bedrooms and shared common areas or small affordable single-family dwellings. ECONorthwest addressed this first consideration and consolidated the housing types as presented in this memorandum. Data about the other structure types is not commonly available across the City. The housing needs analysis will discuss these housing types and present available data for these housing types.



- Potential range of assumption: The range of assumptions about future housing mix is broad. The range of assumptions could be as broad as the changes in mix shown in Table 2, with single-family detached housing varying from 45% to 64%. A more reasonable range of assumptions for the baseline analysis could be taken from the average mix over the 2001 to 2008 period or from the 2007 mix. The mixes are as follows:

<b>Mix for housing built from 2001 to 2008</b>	<b>Mix of housing stock in 2007</b>
Single-family detached: 69%	Single-family detached: 61%
Single-family attached: 10%	Single-family attached: 7%
Two to four units: 6%	Two to four units: 10%
Five or more units: 15%	Five or more units: 22%

The City Council could consider alternative housing mixes. State policy provides guidance for determining housing mix in the Portland Metro UGB and provides a safe harbor for determining housing mix.

- OAR 660-007 requires that cities of 50,000 or more people in the Portland Metro UGB assume that 50% of new residential construction will be single-family detached housing types (including manufactured housing) and 50% multifamily housing types (including all housing attached housing where each dwelling unit is not on a separate lot). Although OAR 660-007 does not apply to Eugene (because the City is not in the Portland Metro UGB), this rule does illustrate the housing mix that cities in the Metro UGB are expected to achieve.
- OAR 660-024-0040(f) provides an optional safe harbor for cities that are not subject to ORS 197.296 and have at least 25,000 residents. This safe harbor assumes that 50% of future housing will be in low density plan designations and that 50% will be in medium and high density plan designations. This safe harbor could be interpreted as resulting in a housing mix of roughly 50% single-family detached housing types and 50% multifamily housing types. Although this safe harbor does not apply to Eugene (because the City is subject to ORS 197.296), this rule does illustrate the housing mix that cities with 25,000 or more people are encouraged by the State to achieve.
- CAC and TAC discussion: Discussions with the CAC indicate that they favor assuming that the housing mix that Eugene will achieve over the planning period is the mix for Eugene's housing stock in 2007. CAC members are concerned that the housing mix achieved over the 2001 to 2008 period was anomalous, with development of more single-family detached housing than Eugene can reasonably expect over the next 20 years. CAC members generally



agreed that future housing mix will more closely resemble the mix of the City's housing stock.

- Current technical recommendation for baseline assumption: We recommend basing Eugene's forecasted housing mix on the mix of housing stock in 2007.
- Data source: The assumption about housing mix could be based on development trends over the 2001 to 2008 period, based on LCOG GIS data and City of Eugene Planning Department's building permit data. Alternatively, assumption about housing mix could be based on the housing mix for Eugene's housing stock, shown in point in time estimates for 1990, 2000, and 2007 from the U.S. Census.

## Housing density

Housing density is the density of housing by structure type, expressed in dwelling units per net or gross acre.<sup>15</sup> Like housing mix, State law requires determination of housing density based on analysis of data and suggests using analysis of housing density developed over the past five years or since the most recent periodic review, whichever time period is greater, or for a shorter or longer time period.

The U.S. Census does not track residential development density. City staff recommends using housing density based on development between 2001 and 2008 (rather than 1999 to 2008) because changes to the City's zoning code went into effect in 2001 that affect housing development. Eugene City staff concluded that data prior to 1996 is not accurate and consistent enough for an analysis of longer-term housing densities.

City staff ground-truthed the density analysis results through review of aerial photos, review of RLID and GeoDart address files and a review of relevant permit data. Staff found that the density analysis did not account for phased development of multifamily housing (structures with more than two units) in Medium and High Density Plan Designations. Phased development often occurs over a number of years and may include developing multiple types of housing on the same tax lot. As a result, the density analysis did not account for pre-existing multifamily development on some tax lots, which resulted in an underestimate of multifamily housing Medium and High Density Plan Designations. Phased development over multiple years on one tax lot does not generally occur in Low Density Residential or with single-family housing.

Table 4 shows average net residential development by structure type for the 2001 to 2008 period. Table 4 shows that 4,727 tax lots had residential development during the

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<sup>15</sup> OAR 660-024-0010(6) uses the following definition of net buildable acre. "Net Buildable Acre" consists of 43,560 square feet of residentially designated buildable land after excluding future rights-of-way for streets and roads. While the administrative rule does not include a definition of a gross buildable acre, using the definition above, a gross buildable acre will include areas used for rights-of-way for streets and roads. Areas used for rights-of-way are considered unbuildable.

2001 to 2008 period, adding 6,532 *new* dwelling units. Some tax lots had pre-existing multifamily dwelling units. The average density for all residential development over the 2001 to 2008 period was 7.2 dwellings per net acre.<sup>16</sup>

**Table 4. Average development density by structure type, dwelling units per net acre, 2001-2008, Eugene UGB**

Structure Type	Tax Lots	Dwelling Units on Lots with Development between 2001-2008			Net Acres	DU/Net Ac
		Multifamily built prior to 2001	All DU Built 2001 to 2008	Total DU		
Single-family detached	4,335	NA	4,503	4,503	837	5.4
Single-family attached	173	NA	660	660	33	20.2
Structures with 2 to 4 units	178	75	371	446	52	8.6
Structures with 5 or more units	41	412	998	1,410	59	24.1
<b>Total</b>	<b>4,727</b>	<b>487</b>	<b>6,532</b>	<b>7,019</b>	<b>980</b>	<b>7.2</b>

Source: LCOG GIS data and City of Eugene Planning Department, 2008

Table 5 shows average development density by Comprehensive Plan Designation and structure type for the 2001 to 2008 period. Table 5 shows that residential density varied by plan designation and structure type. About 66% of new development occurred in Low Density Residential, 19% in Medium Density Residential, 15% in High Density Residential, and the remaining less than 1% occurred in a mixed use designation.

**Table 5. Average development density by Comprehensive Plan Designation and structure type, dwelling units per net acre, 2001-2008, Eugene UGB**

Plan Designation	Average Density (dwelling units per net acres)				Average
	Single-family detached	Single-family attached	Structures with 2 to 4 units	Structures with 5 or more units	
Low Density Residential	5.2	35.5	4.3	na	5.2
Medium Density Residential	8.3	16.4	10.9	18.2	13.2
High Density Residential	13.8	36.7	31.0	33.6	31.0
Medium Density Residential Mixed Use	3.7	na	26.4	36.2	17.1
High Density Res Mixed Use	5.8	na	na	na	5.8
Mixed Use	8.5	na	5.9	na	7.2
<b>Average</b>	<b>5.4</b>	<b>20.2</b>	<b>8.6</b>	<b>24.1</b>	<b>7.2</b>

Source: LCOG GIS data and City of Eugene Planning Department, 2008

- Potential range of assumption: Tables 4 and 5 show the most recently data available about housing density in Eugene.

<sup>16</sup> The density of 7.2 units per net acre accounts for all development on the 4,727 tax lots shown in Table 4. While the density analysis focuses on development that occurred between 2001 and 2008, we would underestimate density on these taxlots if we did not account for multifamily dwellings built in phased development prior to 2001.

The City Council could consider alternative housing densities. State policy provides guidance for determining housing mix in the Portland Metro UGB and provides a safe harbor for determining housing density.

- OAR 660-007 requires that cities of 50,000 or more people in the Metro UGB assume that new residential construction will be average at least 10 dwelling units per net acre. Although OAR 660-007 does not apply to Eugene (because the City is not in the Portland Metro UGB), this rule does illustrate the housing density that cities in the Metro UGB are expected to achieve.
- OAR 660-024-0040(f) provides an optional safe harbor for cities that are not subject to ORS 197.296 and have at least 25,000 residents. This safe harbor assumes an average net density of 8.0 dwelling units per net acre. Although this safe harbor does not apply to Eugene (because the City is subject to ORS 197.296), this rule does illustrate the housing density that cities with 25,000 or more people are encouraged by the State to achieve.
- CAC and TAC discussion: CAC and TAC made no suggestions for alternative housing density assumptions. Two CAC members suggested increasing density and two CAC members suggested decreasing density.
- Current technical recommendation for baseline assumption: We recommend using Eugene's current housing density in the baseline analysis. Assumptions about future housing density may be revised based on direction from the City Council.
- Data source: 2001 to 2008 housing density: The assumption about housing density is based on development trends over the 2001 to 2008 period, based on LCOG GIS data and City of Eugene Planning Department's building permit data.

## **Residential development in commercial plan designations**

Some housing is currently accommodated on land that is located in a commercial plan designation. Between 2001 and 2008, about 5% of housing located in a commercial plan designation. About 95% of the housing located in a commercial plan designation was multifamily housing with two or more units in the structure.

- Potential range of assumption: Multifamily housing can (and does) co-exist with commercial development. Given the historical mix of housing types, it would be plausible that between 5% and 15% of Eugene's future housing could be located in commercial plan designations. The share of housing located in commercial plan designations could be higher if the City designates more land for mixed-use development or if substantial redevelopment occurs as a mixture of housing and commercial uses in commercial plan designations. It



should be noted, however, that locating housing on land designated for commercial uses may displace some commercial uses.

- CAC and TAC discussion: The CAC and TAC did not discuss this assumption.
- Current technical recommendation for baseline assumption: We recommend assuming that 5% of housing will be accommodated on land designated for commercial uses.
- Data source: The assumption about housing located in commercial plan designations is based on development trends over the 2001 to 2008 period, based on LCOG GIS data and City of Eugene Planning Department's building permit data.

### Converting net acres to gross acres

The existing data about residential density is in *net* acres, which does not include land for public right-of-way. One way to estimate the amount of land needed for housing including public right-of-way is to convert from *net* to *gross* acres based on assumptions about the amount of land needed for right-of-way.<sup>17</sup>

Table 6 shows the net acres as a percent of gross acres and a net-to-gross conversion factor.

**Table 6. Net and gross acres by residential plan designation, Eugene UGB, 2008**

Plan Designation	Gross Acres	Acres in		Net Acres as	
		Roads	Net Acres	a Percent of	Net-to-Gross
				Gross Acres	Conversion
Low Density Residential	20,171	3,754	16,417	78%	22%
Medium Density Residential	1,916	298	1,618	80%	20%
High Density Residential	612	158	454	66%	34%
<b>Total/Avg</b>	<b>22,700</b>	<b>4,211</b>	<b>18,489</b>	<b>76%</b>	<b>24%</b>

Source: LCOG GIS data and City of Eugene Planning Department, 2008

- Potential range of assumption: The net-to-gross factor for housing built between 2001 and 2008 in Eugene averaged about 24%, based on analysis of residential development that occurred in Eugene between 2001 and 2008. Based on the data in Table 6, reasonable range of net-to-gross conversion factors in Eugene would be from 20% to 35%.

<sup>17</sup> OAR 660-024-0010(6) uses the following definition of net buildable acre. "Net Buildable Acre" consists of 43,560 square feet of residentially designated buildable land after excluding future rights-of-way for streets and roads. While the administrative rule does not include a definition of a gross buildable acre, using the definition above, a gross buildable acre will include areas used for rights-of-way for streets and roads. Areas used for rights-of-way are considered unbuildable.



- CAC and TAC discussion: Several CAC members asked that we do more analysis about net-to-gross factors in Eugene. Table 5 shows the results of the additional analysis.
- Current technical recommendation for baseline assumption: We recommend using a net-to-gross factor of 24%.
- Data source: The net to gross factor is a point in time estimate based on LCOG GIS data and City of Eugene Planning Department's building permit data.

## Residential redevelopment

The City of Eugene has a legal obligation to inventory the supply and estimate the capacity of buildable land within the UGB. The inventory must consider land that may be used for residential infill and redevelopment.<sup>18</sup> The City does *not* have an obligation to “create a map or document that may be used to verify and identify specific lots or parcels that have been determined to be buildable lands”<sup>19</sup> to show residential infill and redevelopment.

OAR 660-008-0005(6) defines redevelopable land as “land zoned for residential use on which development has already occurred but on which, due to present or expected market forces, there exists the strong likelihood that existing development will be converted to more intensive residential uses during the planning period.” The administrative rule does not define what constitutes a “strong likelihood” for redevelopment.

Moreover, neither Goal 10, OAR 660-008, nor ORS 197.296 define “infill.” Planners and Oregon land-use policy have seemed to define infill as either (1) development that occurs in areas that are already largely developed, or (2) development that occurs on “partially vacant” land. Both of those informal definitions have problems. The first one has no agreed upon, much less legally adopted, way of being measured. The second one requires a definition of partially vacant (generally agreed to mean taxlots that have some development, but less – perhaps substantially less – than plan and zone designations would allow, and some amount of vacant acreage – perhaps as little as a quarter acre that might be feasibly developed).

For the purposes of this study, **we define residential redevelopment as development that (1) occurs on land with existing development, and (2) results in a net increase in dwelling units.** The second condition means that the replacement of one dwelling unit with one other dwelling unit would not be counted. This definition includes infill on partially vacant land where there is no demolition, as well as redevelopment that

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<sup>18</sup> The legal requirements are described in ORS 197.296(3)(a) and (4)(a)(D).

<sup>19</sup> Quoted from ORS 197.296(4)(c).

requires demolition of existing structures. Examples of residential redevelopment include: (1) demolition of a single-family dwelling and development of a duplex or apartment building, and (2) partitioning a lot with a single-family house and building a new single-family dwelling on the newly created lot.<sup>20</sup>

The memorandum “Redevelopment Methodology and Results” (July 27, 2009) describes the methodology for evaluating the amount of redevelopment that occurred historically, as well as discussion with the CAC about the issues with and merits of different methodologies. After evaluating different approaches projecting future redevelopment rates and discussing this issue with the CAC at several meetings, City staff directed the consultants to proceed as follows regarding redevelopment:

1. Treat “infill” as a subset of “redevelopment.”
2. Measure the combined amount of historical redevelopment using the methods described in the memorandum “Redevelopment Methodology and Results.” In summary, use data from LCOG’s address file to estimate the number of new residential addresses that were added between 2001 and 2008 to tax lots identified as developed in 2001. There are some assumptions we will have to make to do that, but they are explainable and defensible. LCOG believes that the address file is very accurate and that this method of estimating redevelopment makes sense. We (ECO) believe that this will be the first study to have used this advanced method, that it will give accurate results, and that it will be the best information available in any study of this type about the actual amount of residential redevelopment (as defined by state rules) that occurred over a specific, identified period.
3. Use the estimate of the amount of historical redevelopment to create a rate that can be used as a baseline forecast for estimating future redevelopment. For example, if 800 new dwelling units (as identified by new residential addresses) were added over an eight-year period (2001 to 2008, inclusive), then redevelopment accounted, historically for an average of 100 dwelling units per year; if that rate is used for the baseline forecast, then about 2,000 new dwelling units will be built on developed land over the 20-year planning period.
4. Subtract the units estimated to be provided via redevelopment during the planning period (in the example above, 2,000 dwelling units) from the total needed (based on calculations described earlier in the memorandum) to get an estimate of *the number of new dwelling units that will be built during the 20-year planning period on land defined as “vacant” in the LCOG BLI.*

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<sup>20</sup> Subdividing a lot and building an additional dwelling is sometimes referred to as infill. For the purposes of this study, we have categorized this type of development as redevelopment.

5. City staff checked the results of the analysis described in Steps 1 through 4 above, which initially showed that 722 dwelling units built between 2001 and 2008 resulted from redevelopment. Staff checked the records associated with the redevelopment status of 500 of the 722 dwelling units. The selection criteria that staff used to choose which instances of redevelopment to review was: (1) all instances where redevelopment added four or more addresses (31 tax lots); (2) addresses flagged by a CAC member as possibly incorrectly identified as redevelopment; and (3) randomly selecting several addresses for review. Staff's analysis included review of aerial photos, review of RLID and GeoDart address files and a review of relevant permit data.

The next section describes results of our implementation of the first two sets, and the resulting estimate of the historical rate of redevelopment.

### Results

Historical residential redevelopment includes **lots that had addresses coded before 2001 and received additional addresses after 2001**. ECO used the following criteria to identify residential redevelopment: (1) lots that had one or more address prior to 2001; and (2) lots that had additional addresses on the lot after 2001. Plan designation and zoning were not used as selection criteria. Rather, new residential units were identified by land use categories and improvement type. This methodology is consistent with the definition of redevelopment presented in the previous section.

Table 7 shows that between 2001 and 2008 a total of 568 new dwelling units occurred on tax lots that already had dwellings. Of these, 211 were on lots that had single-family dwellings and 145 were on lots that had retirement homes. All of the remaining units were on lots with some type of multi-family dwellings.

**Table 7. Residential redevelopment: new dwellings on developed lots, Eugene UGB, 2001-2008**

Existing Unit Type	Existing DU	New DU
Apartment With 1 To 4 Units	133	61
Apartment With 5 To 19 Units	389	71
Quad	11	10
Retirement Home	170	145
Single Family Housing	230	211
Two Family Housing Unit-Duplex	72	70
<b>Total</b>	<b>1,379</b>	<b>568</b>

Source: LCOG taxlot and address data; analysis by ECONorthwest

Note: Staff review of the analysis of redevelopment (described in the section above) reduced the estimate of new housing resulting from redevelopment from 722 to 568 dwellings.



Based on the results we estimate that about 568 new dwellings were constructed between 2001 and 2008 that could be considered redevelopment. This is about 8% of all housing production during the 2001 to 2008 period.<sup>21</sup> New dwellings constructed on lots with pre-existing development is among the best indicators of redevelopment available because it provides an actual unit count of new housing by housing type for the analysis period. This number may overestimate the actual redevelopment on these lots; some new dwellings may have been part of a phased development – particularly apartments. Despite these limitations, we feel this indicator is one of the more reliable redevelopment indicators.

- Potential range of assumption: There is little data available about historical rates of redevelopment. The data suggest that between 5% to 20% of all housing production during the 2001 to 2008 period were the result of redevelopment.
- CAC and TAC discussion: Residential redevelopment was the most discussed issue with the CAC. Two CAC members suggest decreasing the assumption about the amount of redevelopment that may occur in the 20 year period and two suggest increasing it. One CAC member had concerns about the methodology used to estimate historical redevelopment.
- Current technical recommendation for baseline assumption: We recommend assuming about 8% of all new housing will be accommodated through redevelopment, about 1,200 new dwelling units.
- Data source: LCOG GIS data and City of Eugene Planning Department's building permit data.

### 2.3 PUBLIC AND SEMI-PUBLIC LAND NEEDS: BASELINE ASSUMPTIONS

Cities need to provide land for uses other than housing and employment. Public and semi-public facilities such as schools, governments, churches, parks, and other non-profit organizations will expand as population increases. The analysis of public and semi-public land needs is driven by needs identified by other agencies (e.g., school districts), needs identified by the City (e.g., parks), and historical needs. For the purpose of estimating land needed for other uses, these lands are classified into four categories:

- **Land needed for schools.** The 4J and Bethel school districts have plans for new schools by general location within the City and may have plans for selling surplus school properties.

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<sup>21</sup> Staff review of the analysis of redevelopment (described in the section above) reduced the estimate of new housing resulting from redevelopment from 722 to 568 dwellings. This reduced the estimated redevelopment rate from 11% of new housing to 8% of new housing.



- **Land needed for parks and open space.** This includes all land designated for park and open space use within the Eugene UGB. The *Parks, Recreation & Open Space Comprehensive Plan (PROS Plan)* defines four categories of parks: neighborhood parks, community parks, natural areas, and other parks.
- **Land needed for public operations and facilities.** This includes lands for city offices and maintenance facilities, county facilities, state facilities, federal facilities, and other related public facilities.
- **Lands needed for semi-public uses.** This includes churches, non-profit organizations, and related semi-public uses.

The framework and full analysis of employment land need that meets State requirements will be part of the final report. This section discusses the baseline assumptions necessary for determining the amount of land needed for public and semi-public uses over the 20-year planning period.

## Schools

As population grows, school districts may need additional land for new schools in the planning period. ORS 197.296 requires that cities coordinate need for new land for schools with public school districts. We discussed land need with officials from the 4J and Bethel School Districts. School land needs are based on the estimate of land need provided by the school districts. The 4J School District does not expect to need new land over the 2010 to 2030 period.<sup>22</sup>

The Bethel School District expects to need two sites for future schools: (1) an 80-acre site for a high school and (2) a 40-acre site for a K-8 school. These needs could increase if the City expands the UGB and bring more residential land into the UGB in the School District. The District currently owns an 80-acre site that is located outside but adjacent to the UGB. The Bethel School District does not have surplus property.<sup>23</sup>

- Potential range of assumption: The school districts provided input on their expected land needs. Unless the Council finds these needs unreasonable, there is no range of assumptions.
- CAC and TAC discussion: CAC and TAC discussed school needs but did not have suggestions for alternative school land needs. CAC and TAC members discussed concerns about availability of existing sites within the UGB to accommodate the Bethel District's land needs.

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<sup>22</sup> This information was provided by Barb Bellamy, Communications Director at 4J in an interview on March 12, 2009.

<sup>23</sup> This information was provided by Pat McGillivray, Communications Relations for the Bethel School District in an interview on March 12, 2009.

- Current technical recommendation for baseline assumption: We recommend assuming that the 4J District will not need new land and that the Bethel District will need a 40-acre site and an 80-acre site.
- Data source: Interviews with school district officials.

## Parks and open space

The CAC suggested basing parkland needs on the level of service identified in the *Parks, Recreation & Open Space Comprehensive Plan (PROS Plan)*, despite the fact that the City has not adopted this plan. The PROS Plan calls for a level of service of 20-acre per 1,000 people, broken into the following parks categories: 1.7 acres per 1,000 people for neighborhood parks, 1.5 acres per 1,000 people for community parks, 10.0 acres per 1,000 people for natural areas, and 6.8 acres per 1,000 people for other parks.

Some parkland is currently located outside the UGB. About 62% of Eugene's natural area parks (1,154 acres) are located outside of the UGB.

- Potential range of assumption: Based on the level of service standards, the City currently has a deficit of about 187 acres of parkland to serve the existing population. Based on the level of service standards and expected population growth, the City will need 717 acres to fill the existing parkland deficit and serve new residents.
- CAC and TAC discussion: CAC and TAC discussed parkland needs but did not have suggestions for alternative parkland land needs. The CAC and TAC both agreed that we need to consider the identified land need for natural areas in further detail because it does not make sense for a need for natural areas to contribute to the need for additional lands within the UGB.
- Current technical recommendation for baseline assumption: We recommend that the City base parkland need on the level of service in the PROS Plan and address existing parkland deficits, as well as future parkland need. The exception to this recommendation is that we recommend assuming that 62% of needed natural areas will be located outside of the UGB, consistent with the current location of natural areas relative to the UGB. This will decrease the parkland level-of-service *within* the UGB to 13.8 acres per 1,000 people, excluding the current deficit of parkland (about 187 acres).
- Data source: City of Eugene Parks Department

## Public facilities and operations

This category includes lands for city offices and maintenance facilities, county facilities, state facilities, federal facilities, and other related public facilities. It does not include right-of-ways, land used by the railroad, or land owned by the Bonneville Power Administration. The City currently has 6.6 acres per 1,000 people (1,174 acres) for public facilities and operations.

- Potential range of assumption: Based on the existing level of service (6.6 acres per 1,000 people) and expected population growth, the City may need about 225 acres of land for public facilities and operations over the planning period. This estimate seems high because Eugene already has many of the operations that are necessary for a city the size of Eugene, such as: a wastewater treatment facility, local and regional government office buildings, the University of Oregon's campus and related facilities, utility and other operations, and other public facilities. An alternative assumption might be that Eugene will need 100 new acres of land (2.9 acres per 1,000 people) for public facilities and operations. Among other things, this estimate of land need will address the University of Oregon's expected growth of 30-acres over the planning period.<sup>24</sup>
- CAC and TAC discussion: CAC and TAC discussed public facilities and operations land need and seemed to think that assuming a need for 6.6 acres per 1,000 people was too high. Some committee members were concerned about the availability of sites within the UGB to provide for needed public facilities.
- Current technical recommendation for baseline assumption: We recommend assuming need for 100 acres of land for public facilities and operations.
- Data source: LCOG GIS data and City of Eugene Planning Department's building permit data

## Semi-Public uses

This category includes lands for semi-public uses, such as churches, non-profit organizations, and related semi-public uses. The City currently has 1.3 acres per 1,000 people (232 acres) for semi-public uses.

- Potential range of assumption: The City could assume that future need for semi-public land will be similar to current uses, at 1.3 acres per 1,000 people. Under that assumption, the City will need about 50 acres for semi-public uses over the 20-year planning period.
- CAC and TAC discussion: CAC and TAC had no comments on the need for future semi-public land needs.
- Current technical recommendation for baseline assumption: We recommend assuming need for 1.3 acres per 1,000 people or 50 acres of land for public facilities and operations.

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<sup>24</sup> Christopher Ramey, Associate Vice President at the University of Oregon, said that the University expects to purchase and develop roughly 30-acres over the 20-year planning period.

- Data source: The assumption about need for semi-public land is a point in time estimate, based on LCOG GIS data and City of Eugene Planning Department's building permit data.



### 3 APPENDIX A: SUMMARY OF ASSUMPTIONS AND RECOMMENDED VALUES FOR THE LAND NEED ANALYSIS

Variable	Rec. Value	Source of Data	Rationale	Reasonable Range
<b>Employment Land Needs</b>				
Employment growth	1.4%	State of Oregon	Safe harbor	0.9% to 2.1%
Share of Emp by Type		State of Oregon	Current mix	
Industrial	18%			15% - 23%
Commercial	54%			46% - 55%
Retail	13%			13% - 15%
New Employment in Non-employment PD	15%	State of Oregon	Current percentage	10% - 20%
New Employment in Existing Built Space	10%	City of Eugene	Other cities	5% - 20%
Employment Redevelopment		City of Eugene	Other cities	10% to 50%
Industrial	10%			
Commercial	15%			
Retail	35%			
Employment Density		State of Oregon	Current average	Varies
Industrial	13 EPA			5-20 EPA
Commercial	68 EPA			30-93 EPA
Retail	23 EPA			20-37 EPA
Net to Gross for Right-of-Way	20% (15%)	City of Eugene	Current average	15% - 20%
<b>Residential Land Needs</b>				
Population Growth	0.9%	Lane County	Adopted Forecast	None
Population in Group Quarters	5.3%	US Census	Current average	4.4% - 5.5%
Persons per Household	2.25	US Census	Safe harbor	Difficult to estimate
Residential Vacancy Rate	5%	US Census	Recent data	3.5% - 6.5%
Housing mix		City of Eugene	Historic data & recent trends	
Single-family detached	61%			45% - 69%
Single-family attached	7%			7% - 10%
Two to five units	10%			6% to 10%
Five or more units	22%			18% to 35%
Housing Density	7.2	City of Eugene	Recent trends	Average of 6.7-10.0
Single-family detached	5.4			
Single-family attached	20.2			Dwelling units per acre
Two to four units	8.6			
Five or more units	24.1			
Residential development in commercial PD	5%	City of Eugene	Current percentage	5% - 15%
Residential redevelopment	8%	City of Eugene	Recent trends	5% to 20%
Net to Gross for Right-of-Way	24%	City of Eugene	Current average	20% to 35%
<b>Public and Semi-Public Land Needs</b>				
Park Land (inside the UGB)	13.8 pkp	City of Eugene		N/A
Neighborhood Parks	1.7 pkp		PROS Plan;	
Community Parks	1.5 pkp		Parkland locating	
Natural Areas	3.8 pkp		inside the UGB	
Other Parks	6.8 pkp			
Schools			School Districts	N/A
4J School District	0 acres	4J		
Bethel School District	120 acres	Bethel		
Public Operations and Facilities	100 acres	City of Eugene	Historic data	100 - 230 acres
Semi-public uses	50 acres	City of Eugene	Historic data	25 - 75 acres

Note: Note: We excluded government employment growth because government land need is accommodated through public and semi-public land needs