OAR CHAPTER 660, DIVISION 38
Simplified Urban Growth Boundary Method[1]

OAR 660-038-0000
Purpose

(1) The purpose of this division is to implement ORS 197A.300 to 197A.325 by providing simplified methods to evaluate and amend an urban growth boundary (UGB) for a city outside Metro. (Note: ORS 197A.320 regarding the establishment of study areas and the priority of lands applies both to the "streamlined methods" under this rule and to the "traditional" UGB method described in OAR 660, division 24. This division interprets that statute only with respect to the streamlined methods; OAR 660-024-0065 and 660-024-0067 interpret ORS 197A.320 for purposes of the traditional method).

(2) The method for UGB evaluation and amendment described in OAR chapter 660, division 24, (the "traditional method") is not modified by this division. Cities may choose to apply the methods described in this division instead of OAR 660, division 24, in order to evaluate or amend a UGB, as further explained in OAR 660-038-0020.

(3) The simplified methods described in this division are intended to achieve the following objectives provided in ORS 197A.302:

(a) Become, as a result of reduced costs, complexity and time, the methods that are used by most cities with growing populations to manage their urban growth boundaries;

(b) Encourage, to the extent practicable given market conditions, the development of urban areas in which individuals desire to live and work and that are increasingly efficient in terms of land uses and in terms of public facilities and services;

(c) Encourage the conservation of important farm and forest lands, particularly lands that are needed to sustain agricultural and forest products industries;

(d) Encourage cities to increase the development capacity within their urban growth boundaries;

(e) Encourage the provision of an adequate supply of serviceable land that is planned for needed urban residential and industrial development; and

[1] Note: those items described in *italics* or with an "*X*" or "*Y*" represent placeholders for values where the department is not yet recommending a specific number or policy.

(f) Assist residents in understanding the major local government decisions that are likely to determine the form of a city's growth.

OAR 660-038-0010
Definitions

The definitions in ORS 197.015, the statewide planning goals, and the following definitions apply to this division:

(1) "Buildable lands" means land in urban or urbanizable areas that are suitable for urban uses, as provided in ORS 197A.300(1). Note: This definition applies to this division only; a different definition of "Buildable Lands" is provided in laws and rules concerning needed housing (ORS 197.295; OAR 660-007-0005 and 660-008-0005 and OAR chapter 660, division 24).

(2) "Commercial" and "Commercial use" means the variety of office, retail, institutional and public employment land uses in the North American Industry Classification System (NAICS) Categories 44, 45, 51 – 56, 61, 62, 71, 72, and 81.

(3) "Industrial" and "Industrial use" means employment activities including, but not limited to, manufacturing, assembly, fabrication, processing, storage, logistics, warehousing, importation, distribution and transshipment and research and development, that generate income from the production, handling or distribution of goods or services, including goods or services in the traded sector, as defined in ORS 285A.010. "Industrial use" includes NAICS Categories 11, 21, 22, 23, 31, 32, 33, 42, 48, 49.

(4) "Initiates" means that the local government either:

(a) Issues a public notice specified in OAR 660-018-0020, including a notice to the department, for a proposed plan amendment that concerns evaluating or amending a UGB, or

(b) Receives the director's approval, as provided in OAR 660-025-0110, of a periodic review work program that includes a work task concerning a UGB.

(5) "Nonresource land" has the meaning specified in OAR 660-004-0005(3).

(6) "Roughly proportional" means, with respect to planning of land added to a UGB in response to a need determination, the amount of land provided for particular categories of is within ***X*** percent of the amount needed.

(7) "Serviceable" means, with respect to land supply in a UGB, and as described in OAR 660-038-0210, that:

(a) Adequate sewer, water and transportation capacity for planned urban development is available or can be either provided or made subject to committed financing; or

(b) Committed financing can be in place to provide adequate sewer, water and transportation capacity for planned urban development.

(8) "UGB" means "urban growth boundary."

(9) “Urbanizable land” means land inside an urban growth boundary that, due to the present unavailability of urban facilities and services, or for other reasons, either retains the zone designations assigned prior to inclusion in the boundary or is subject to interim zone designations intended to maintain the land’s potential for planned urban development until appropriate public facilities and services are available or planned.

(10) "Vacant Land" with respect to Employment Land means a lot or parcel:

(a) Equal to or larger than one half-acre not currently containing permanent buildings or improvements; or

(b) Equal to or larger than five acres where less than one half-acre is occupied by permanent buildings or improvements.

OAR 660-038-0020
Applicability

(1) This division takes effect January 1, 2016. Rules in this division provide optional simplified methods for a city outside Metro to evaluate or amend its UGB. These methods are available to cities in addition to and not in lieu of the methods prescribed in OAR chapter 660, division 24. If a city uses the methods in this division to evaluate or amend a UGB, the requirements division 24 do not apply to that UGB evaluation or amendment.

(2) A city that evaluates or amends its UGB using the methods provided in this division must demonstrate that:

(a) It has sufficient buildable lands and other development capacity, including land and capacity for needed housing and employment opportunities, within its UGB to meet the growth in population and employment that is forecast to occur over a 14-year period, and

(b) It based its determination of the amount of buildable lands needed for housing, employment and other urban uses on the population and employment growth forecast to occur over a 14-year period, consistent with rules in this division, and

(c) Lands included within the UGB include sufficient serviceable land for at least a seven-year period and can all be serviceable over a 14-year period as provided in OAR 660-038-0210.

(3) A city that uses this division to add land to the UGB may use a method in this division again to add land to the UGB when:

(a) The population of the city has grown by at least 50 percent of the amount of growth forecast to occur in conjunction with the previous use of the method by the city; or

(b) At least one-half of the lands identified as buildable lands during the previous use of the method by the city have been developed.

(4) A city that adopts a UGB amendment using this division shall evaluate whether the city needs to include additional land for residential or employment uses within the UGB before the population of the city has grown by 100 percent of the population growth forecast to occur in conjunction with the city's previous use of this division.

(5) A city that adopts a UGB amendment using this division may subsequently add land to the UGB using the "traditional" method described in OAR chapter 660, division 24, instead of a method described in this division, only if the primary purpose for expansion of the UGB is to accommodate a particular industry use that requires specific site characteristics or to accommodate a public facility that requires specific site characteristics, as provided in ORS 197A.320(6).

(6) A city may not use this division in order to evaluate or amend a UGB for purposes of implementing OAR 660-024-0045 concerning Regional Large Lot Industrial Land.

(7) A city that elects to use this division shall notify the department in the manner required by ORS 197.610 and OAR chapter 660, division 18, regarding notice of a post-acknowledgment plan amendment. The city may revoke its election under this section at any time until the city makes a final decision to amend the UGB.

(8) A city that initiated an amendment of its UGB under OAR chapter 660, division 24, before January 1, 2014, but has not submitted that amendment to the department, may withdraw the proposed amendment and use a method described in this division by filing notice of the election with the department in the manner required by ORS 197.610 and 197.615 for notice of a post-acknowledgment plan amendment.

(9) Notwithstanding ORS 197.626, when a city evaluates or amends the urban growth boundary pursuant to this division, the Land Use Board of Appeals rather than the commission has jurisdiction for review of the final decision of the city.

(10) Where this division provides a number or a range of numbers that a city may use, the city is not required to adopt findings to support the use of the number or a number within the range of numbers.

(11) Use of a method under this division is deemed to satisfy ORS 197.296 for cities subject to that statute.

(12) All statewide planning goals and related administrative rules are applicable when establishing or amending a UGB, except as follows:

(a) The exceptions process in Goal 2 and OAR chapter 660, division 4, is not applicable unless a local government chooses to take an exception to a particular goal requirement, for example, as provided in OAR 660-004-0010(1);

(b) Goals 3 and 4 are not applicable;

(c) Goal 5 and related rules under OAR chapter 660, division 23, apply only to lands added to the UGB, except as required under OAR 660-023-0070 and 660-023-0250;

(d) The transportation planning rule requirements under OAR 660-012-0060 need not be applied at the time of a UGB amendment if the land added to the UGB is zoned as urbanizable land, either by retaining the zoning that was assigned prior to inclusion in the boundary or by assigning interim zoning that does not allow development that would generate more vehicle trips than development allowed by the zoning assigned prior to inclusion in the boundary;

(e) Goal 15 is not applicable to land added to the UGB unless the land is within the Willamette River Greenway Boundary;

(f) Goals 16 to 18 are not applicable to land added to the UGB unless the land is subject to acknowledged comprehensive plan provisions that implement these goals;

(g) Goal 19 is not applicable to a UGB amendment.

(13) A city considering a UGB evaluation or amendment must apply its acknowledged citizen involvement program to ensure adequate notice and participation opportunities for the public, and must assist the public in understanding the major local government decisions that are likely to determine the form of the city's growth.

(14) A city that is scheduled to commence periodic review as required by OAR 660-025-0030 is not required to commence periodic review if the city has amended the urban growth boundary pursuant to this division, or if he city has evaluated the UGB need and land supply using this division and determined that the current UGB contains sufficient buildable land for a 14-year period, including a supply that is serviceable for a seven-year period and a supply that can be serviceable for a 14-year period. Instead, the city shall follow the procedures in OAR chapter 660, division 25, *that provide an alternate means to ensure that the comprehensive plan and land use regulations of the city comply with the statewide land use planning goals and are updated over time to reflect changing conditions and needs*.

OAR 660-038-0030
Residential Land Need

OAR 660-038-0030 through 660-038-0080 provide steps that a city must take to determine residential land need over the 14-year planning period.

(1) A city that applies the UGB method in this division:

(a) Must forecast the amount of buildable lands that it will need for housing based on the population forecast for the 14-year period commencing on the date of notice and consistent with OAR 660-038-0040 through OAR 660-038-0090, and

(b) Must provide within its UGB sufficient buildable lands and other development capacity for needed housing to accommodate the growth in population forecast to occur over a 14-year period.

(2) The city must use the most recent final forecast issued by the Portland State University Population Research Center under OAR 577-050-0030 through 577-050-0060 to determine the population growth for the city's current urban growth boundary for a 14-year period from the year in which the city begins its analysis.

(3) The city must subtract from the population growth the number of persons projected to live in group quarters in the UGB during the planning period. The city shall determine this number by calculating the percentage of the city's population living in group quarters at the last decennial United States Census and subtracting the same percentage from projected population growth.

(4) To determine the gross number of dwelling units needed for the 14-year period, the city must divide the projected growth reduced as provided in section (3) by the persons per household within the city determined at the most recent decennial United States Census.

(5) The city must adjust the gross number of needed dwelling units to account for the vacancy rate projected to occur during the planning period, as follows: Multiply the result calculated in section (4) by the vacancy rate and add the resulting product to the gross number of dwelling units needed. The vacancy rate used shall be five percent plus the vacancy rate for seasonal, recreational, or occasional vacancies within the city, determined at the last decennial United States Census. However, the total vacancy rate used may not exceed 15 percent.

(6) The city must account for projected redevelopment expected to occur in residentially zoned areas, and mixed use residential development expected to occur in commercially zoned areas, as follows: separately multiply the result calculated in section (5) by the applicable percentages in subsections (a) through (c) of this section. Add the three numbers and then subtract the resulting number from the result calculated in section (5).

(a) For cities with UGB population less than 10,000, the percentage shall be within a range from ***X*** *percent to* ***Y*** *percent* of the result calculated in section (5).

(b) For cities with UGB population equal to or greater than 10,000 and less than 25,000, the percentage shall be within a range from ***X*** *percent to* ***Y*** *percent* of the result calculated in section (5).

(c) For cities with UGB population equal to or greater than 25,000, the percentage shall be within a range from ***X*** *percent to* ***Y*** *percent* of the result calculated in section (5).

(7) The city must account for accessory dwelling units that may be built during the planning period, as follows: separately multiply the result calculated in section (6), by the applicable percentages in subsections (a) through (c) of this section:

(a) For cities with UGB population less than 25,000, the percentage shall be within a range from zero percent to two percent of the result calculated in section (6).

(b) For cities with UGB population equal to or greater than 25,000, the percentage shall be within a range from one percent to three percent of the result calculated in section (6).

(c) Cities with a documented percentage rate of accessory dwelling unit construction from year 2000 to the present that is higher than the ranges specified in the applicable subsection (a) or (b) may choose a percentage up to the documented rate.

(8) The city must subtract the number determined in section (7) from the result calculated in section (6). The resulting number is the identified need for new dwelling units for 14 years.

(9) The city shall accommodate the dwelling unit need identified in section (8):

(a) On vacant and partially vacant residentially-zoned lands within the UGB, and

(b) If the amount of land described in subsection (a) is insufficient to accommodate all of the identified need, any remaining need on lands to be added for residential development to the UGB, as determined in OAR 660-038-0160 and 660-038-0170.

(10) If the city adds lands to the UGB to provide for residential uses it must satisfy the requirements of OAR 660-038-0190.

OAR 660-038-0040
Determine the Mix of Dwelling Units Needed

(1) A city that applies the UGB method in this division must determine the current mix of housing types within the city based on the percentages of low density, medium density, and high density residential dwellings using:

(a) For cities with UGB population less than 2,500, the percentages determined in the most recent American Community Survey conducted by the United States Census;

(b) For cities with UGB population greater than or equal to 2,500, using either the percentages determined in:

(A) The most recent American community survey conducted by the United States Census, or

(B) An average of the two most recent American community surveys conducted by the United States Census.

(2) For the purposes of this rule and for OAR 660-038-0050:

(a) For cities with a UGB population less than 2,500, single-family detached dwellings shall be considered lower density residential, and all other dwellings shall be considered higher density residential.

(b) For cities with a UGB population greater than or equal to 2,500, single-family detached dwellings shall be considered low density residential, single-family attached dwellings and multiplexes with two to four units shall be considered medium density residential, and multi-family dwellings of five or more units shall be considered high density residential.

(3) A city that applies the UGB method in this division must project the mix of housing types needed for new development over the 14-year period using the ranges of numbers in Table 1.

(4) To determine the number of low or lower density, medium density (for cities with UGB population greater than 2,500) and high or higher density dwelling units needed over the 14-year period, the city must multiply the percentages of needed housing for different housing categories determined in section (3) by the total housing need determined in OAR 660-038-0030.

OAR 660-038-0050
Determine Amount of Land Needed for Each Housing Type

A city that applies the UGB method in this division must:

(1) Determine the acreage needed for each category of residential development over the 14-year period, by dividing the number of needed units determined in OAR 660-038-0040 by the number of net dwelling units per acre from the ranges in Table 2.

(2) Add an amount equal to 25 percent of the acreage needed to determine the amount of gross acreage needed to account for public land need.

(3) Calculate the overall net density (combining low, medium, and high density land need) for all residential land need in terms of dwellings per acre and compare the result with the density

determined by the developed lands inventory within the city's UGB completed under OAR 660-038-0060(6).

(4) If necessary, adjust the density assumptions used in the residential land need analysis so that the overall net density for all residential land need is at least equal to the density determined by the developed lands inventory.

OAR 660-038-0060
Buildable Lands Inventory (BLI) for Residential Land within the UGB

A city that applies the UGB method in this division must determine the supply and development capacity of lands within its urban growth boundary by preparing a buildable lands inventory (BLI) as provided in this rule.

(1) The city must inventory the vacant and partially vacant buildable lands within the urban growth boundary consistent with the applicable requirements of the factors provided in this rule for forecasting the development capacity of urbanizable lands within the urban growth boundary.

(2) The city shall classify the existing residential districts within its UGB based on allowed density. The district boundaries shall be based on either:

(a) The city's comprehensive plan map; or

(b) If the city's comprehensive plan map does not differentiate residential districts by density or type of housing, the applicable city or county zoning map, as follows:

(A) For cities with a UGB population less than 2,500:

(i) Districts with a maximum density less than or equal to eight dwelling units per acre: low density residential. A city may classify a district as low density residential despite a maximum density of greater than eight dwelling units per acre if the majority of existing residences within the district are single-family detached and if the city has a high density residential district as determined by subparagraph (ii);

(ii) Districts with a maximum density greater than eight dwelling units per acre: high density residential.

(B) For cities with UGB populations greater than 2,500:

(i) Districts with a maximum density less than or equal to eight dwelling units per acre: low density residential. A city may classify a district as low density residential despite a maximum density of greater than eight dwelling units per acre if the majority of existing residences within the district are single-family detached and the city has a medium density residential district as determined by subparagraph (ii);

(ii) Districts with a maximum density greater than eight dwelling units per acre and less than or equal to 16 dwelling units per acre: medium density residential, unless the district has been classified as low density residential pursuant to subparagraph (i). A city may classify a district as medium density residential despite a maximum density of greater than 16 dwelling units per acre if the majority of development within the district is developed at densities of between eight and 16 dwelling units per net acre and the city has a high density residential district as determined by subparagraph (iii);

(iii) Districts with a maximum density greater than 16 dwelling units per acre: high density residential, unless the district has been classified as medium density residential pursuant to subparagraph (ii);

(iv) A city may not classify as low density a district that allows higher residential densities than a district the city has classified as medium density. A city may not classify as medium density a district that allows higher residential densities than a district the city has classified as high density.

(3) The city must identify all vacant parcels with a residential comprehensive plan designation. A vacant parcel is defined as a parcel of at least 3,000 square feet size, and with an assessed improvement value of less than $10,000.

(4) The city must identify all partially vacant parcels with a residential comprehensive plan designation, as follows:

(a) For parcels at least one-half acre in size that contain a single-family residence, the city must subtract one-quarter acre for the residence, and count the rest of the parcel as vacant land, and

(b) For parcels at least one-half acre in size that contain more than one single-family residence, multiple-family residences, non-residential uses, or ancillary uses such as parking areas and recreational facilities, the city must identify vacant areas using an Orthophoto or other map of comparable geometric accuracy. If the vacant area is at least one-quarter acre, consider that portion of the parcel to be vacant land.

(5) The city must determine the amount and mapped location of low or lower density, medium density, and high or higher density vacant and partially vacant residential land within the city's UGB.

(6) The city must identify all residentially-designated developed parcels and those portions of partially vacant parcels within the UGB that are developed and calculate the total area of developed residentially-designated land, the total number of existing dwelling units located on residentially-designated land, and the net density of developed residentially-designated land within the UGB.

OAR 660-038-0070
Adjust Residential Lands BLI to Account for Constrained Lands

A city using the method in this division must adjust the residential lands BLI prepared under OAR 660-038-0060 to account for constrained lands using this rule.

(1) First, the city must identify the following physical constraints on land inventoried as "buildable" under OAR 660-038-0060:

(a) Floodways and water bodies,

(b) Other lands within the Special Flood Hazard Area (SFHA) as identified on the applicable Flood Insurance Rate Map (FIRM).

(c) Lands within the tsunami inundation zone established pursuant to ORS 455.446,

(d) Contiguous lands of at least one acre with slopes that are 25 percent or more. Slope shall be measured as the increase in elevation divided by the horizontal distance at maximum ten-foot contour intervals,

(e) Lands subject to protections as a result of an adopted and acknowledged resource protection program developed pursuant to Statewide Planning Goal 5 or 6, and

(f) Lands subject to development prohibitions, natural resource protections, or both in acknowledged comprehensive plan provisions that implement Statewide Planning Goals 16, 17, or 18.

(2) Second, the city must reduce the residential development capacity on physically constrained lands by the following factors in terms of acreage:

(a) For lands within floodways and water bodies, a 100 percent reduction.

(b) For other lands within Special Flood Hazard Area (SFHA) as identified on the applicable Flood Insurance Rate Map (FIRM), a 50 percent reduction unless the city's existing zoning classification of such areas provides for greater restrictions on new residential development, in which case the reduction shall equal the level of residential development allowed by the city's zoning classification.

(c) For lands within the tsunami inundation zone, no reduction unless the city's existing zoning classification of such areas prohibits or reduces residential development, in which case, the reduction shall be based upon the maximum density allowed by the city's existing zoning classification.

(d) For lands with slopes that are 25 percent or more, a 50 percent reduction.

(e) For lands subject to protections in an acknowledged comprehensive plan or zoning program to achieve Statewide Planning Goal 5 or 6, a reduction to the levels allowed by the acknowledged program.

(f) For lands subject to development prohibitions, natural resource protections, or both in acknowledged comprehensive plan provisions that implement Statewide Planning Goals 16, 17, or 18, a reduction to the levels allowed by the applicable comprehensive plan provisions and implementing land use regulations.

(3) The city may identify lands encumbered with easements or recorded deed restrictions that restrict additional residential development. The property or area of land encumbered with such easements or recorded deed restrictions shall not be counted in this category if any development that violates the easement or deed restriction exists on the property or area of land subject to such restrictions. The city may reduce the residential development capacity on lands encumbered to the level of development allowed by the easement or recorded deed restriction. A city's decision to reduce residential development capacity based upon this section must be supported by substantial evidence in the record. A city is not required to identify lands encumbered with easements or recorded deed restrictions under this section even if presented with evidence that such restrictions exist on residential buildable land within the city's UGB.

(4) Finally, to determine the residential buildable land inventory amount for each type of needed housing the city must reduce the amount of buildable land for each type of needed housing determined in OAR 660-038-0060 by the amounts determined in this rule.

OAR 660-038-0080
Compare Residential Land Need to Land Supply

(1) To determine whether to expand the UGB, a city using the method in this division must compare the amount of land needed for each category of residential development, as determined in OAR 660-038-0050, with the amount of buildable land available for each category of residential development determined in OAR 660-038-0070(4).

(2) Cities with a UGB population of less than 2,500 shall determine whether to expand the UGB based on Table 3.

(3) Cities with a UGB population greater than or equal to 2,500 and less than 10,000 shall determine whether to expand the UGB based on Table 4.

(4) Cities with a UGB population greater than 10,000 shall determine whether to expand the UGB based on Table 5.

(5) A city may also redesignate surplus employment land as determined through the employment land need analysis and buildable land inventory for employment development to satisfy all or part of a residential land deficit.

(6) If a city determines that the UGB must be expanded to meet housing needs, the city must apply:

(a) OAR 660-038-0160 and 660-038-0170 to evaluate which lands to include in the UGB, and

(b) OAR 660-038-0190 to plan and zone lands that are added and, if necessary, to adjust planning and zoning of residential lands currently in the UGB.

OAR 660-038-0090
Employment Land Need

OAR 660-038-0090 to 660-038-0150 provide the steps that a city must take to determine employment land need over the 14-year planning period.

(1) A city that applies the UGB method in this division:

(a) Must forecast the amount of buildable lands that will be needed for forecast employment over a 14-year period, and

(b) Must provide within its UGB sufficient buildable lands and other development capacity to accommodate the growth in employment that is forecast to occur over a 14-year period and plan those lands as required in OAR 660-038-0170 and 660-038-0180.

(2) The city must forecast employment growth within the urban growth boundary for a 14-year period from the year in which the urban growth boundary analysis is begun. As provided in ORS 197A.310(4) and ORS 197A.312(4), employment growth may be forecast based on either:

(a) The population growth forecast for the city in the most recent final forecast issued by the Portland State University Population Research Center under OAR 577-050-0030 through 577-050-0060, or

(b) The most recent employment growth forecast issued by the Oregon Employment Department (OED) for the applicable region, applying the requirements of OAR 660-038-0110.

(3) For purposes of OAR 660-038-0110 through OAR 660-038-0150, “Region” means Workforce Innovation and Opportunity Act (WIOA) Areas for which OED forecasts long-term job growth.

OAR 660-038-0100
Forecasting Employment Need Based on Forecast of Population Growth

A city forecasting employment need based on population under OAR 660-038-0090(2)(a) must:

(1) Determine the population of the city's urban growth boundary for the 14-year period from the year in which the urban growth boundary analysis is begun based on the most recent forecast issued by the Portland State University Population Research Center.

(2) Determine the current population of the UGB using the most recent population estimate issued by the Portland State University Population Research Center.

(3) Determine the number of jobs currently in the city, sorted into two categories: "commercial" and "industrial" based on Table 6 [*a "look-up table" provided to DLCD by OED based on the most recent employment numbers available – this will be available prior to rule adoption*].

(4) Based on sections (2) and (3), determine the ratio of "jobs to population" for both commercial and industrial jobs.

(5) Multiply the forecasted population of the UGB determined in section (1) by the ratio of commercial jobs to population determined in section (3) and by the ratio of industrial jobs determined in section (3). The result is the projected number of new jobs in the UGB for the 14-year planning period for commercial jobs and for industrial jobs.

(6) Reduce the forecast by of jobs in section (5) by 20 percent to account for jobs that will occur on land that is zoned for residential or other uses. This is the total number of jobs forecast for the planning period to be accommodated on employment lands.

OAR 660-038-0110
Forecasting Employment Need Based on Oregon Employment Department Forecast

A city forecasting employment need based on the most recent long-term job forecast issued by OED under OAR 660-038-0090(2)(b) must:

(1) Determine the number of jobs currently in the city, sorted into two categories: "commercial" and "industrial" based on Table 6 [*a "look-up table" provided to DLCD by OED based on the most recent employment numbers available*].

(2) Based on the number of jobs determined in section (1), determine the "ratio of commercial jobs to industrial jobs" currently in the city. Express this as a percentage, for example, 70 percent commercial and 30 percent industrial.

(3) Using Table 7 (*a "look-up table" created by the department and OED, updated periodically by DLCD and OED*), determine the number of jobs currently in the region that includes the city.

(4) Using Table 7, determine the projected number of new jobs in both commercial and industrial sectors projected to occur in the region that includes the city. NOTE: the OED forecast is a ten year forecast but for purposes of this rule that forecast shall be considered the long term (14-year) forecast. (*Table 7 would be a "look-up table" created by the department and OED, updated periodically by DLCD as OED issues a long term forecast*).

(5) Based on section (4), determine the ratio of new commercial jobs to new industrial jobs forecast by OED for the region that includes the city. Express this as a percentage, for example 40 percent commercial and 60 percent industrial.

(6) Adjust the ratio of commercial and industrial jobs determined in section (2) by adding a factor of ***X*** percent (up or down) with respect to the long term OED forecast of new jobs in the region. For example, if the OED forecast predicts that 40 percent of new jobs in the region would be industrial, but the city currently has only 30 percent industrial jobs, the path could allow the city to assume a future mix of 30 percent + ***X*** percent.

(7) Project the number of commercial jobs to occur in the city over the 14-year period in the same manner as provided in OAR 660-038-0100. Based on this number, the city must calculate the projected number of industrial jobs using the mix determined in section (6).

(8) Reduce the forecast by of jobs in section (5) by 20 percent to account for jobs that will occur on land that is zoned for residential or other uses rather than in employment zoning districts. This result is the total commercial and industrial jobs forecast for 14 years based on the OED long-term forecast.

OAR 660-038-0120
Translate Job forecast to Employment Land Need

(1) The city shall determine the amount of industrial employment land need as follows:

(a) Cities with population of less than 10,000 shall determine industrial land need by:

(A) Determining the net acres of industrial land needed by dividing the projected number of industrial jobs determined under OAR 660-038-0100 or OAR 660-038-0110 by a number between five and seven employees per acre, and

(B) Determining the gross acres of industrial land needed by adding an amount of land equal to 15 percent of the needed amount of net acres determined under subparagraph (1)(a)(A) to the net acre industrial land need.

(b) Cities with population of 10,000 or greater shall determine industrial land need by:

(A) Determining the net acres of industrial land needed by dividing the projected number of industrial jobs determined under OAR 660-038-0100 or OAR 660-038-0110 by a number between 10 and 12 employees per acre, and

(B) Determining the gross acres of industrial land needed by adding an amount of land equal to 15 percent of the needed amount of net acres determined under subparagraph (1)(b)(A) to the net acre industrial land need.

(2) The city shall determine the amount of commercial employment land need as follows:

(a) Cities with a population of less than 10,000:

(A) Determine the net acres of commercial land needed by dividing the commercial job forecast number determined under OAR 660-038-0100 or OAR 660-038-0110 by a number between 12 and 15 employees per acre.

(B) Determine the gross acres of commercial land needed by adding an amount of land equal to 15 percent of the needed amount of net acres determined under subparagraph (2)(a)(A) to the net acre commercial land need.

(b) Cities with a population of 10,000 or greater:

(A) Determine the net acres of commercial land need by dividing the commercial job forecast number determined under OAR 660-038-0100 or OAR 660-038-0110 by a number between 18 and 22 employees per acre.

(B) Determine the gross acres of commercial land needed by adding an amount of land equal to 15 percent of the needed amount of net acres to determine under subparagraph (2)(b)(A) the net acre commercial land need.

(3) The city must account for projected redevelopment expected to occur in commercially zoned areas, as follows: separately multiply the result calculated in section (2) by the applicable percentages in subsections (a) through (c) of this section. Add the three numbers and then subtract the resulting number from the gross acre need calculated in section (2).

(a) For cities with UGB population less than 10,000, the percentage shall be within a range from ***X*** *percent to* ***Y*** *percent* of the gross acre need.

(b) For cities with UGB population equal to or greater than 10,000 and less than 25,000, the percentage shall be within a range from ***X*** *percent to* ***Y*** *percent* of the gross acre need.

(c) For cities with UGB population equal to or greater than 25,000, the percentage shall be within a range from ***X*** percent to ***Y*** percent of the gross acre need.

OAR 660-038-0130
Buildable Land Inventory for Employment land within the UGB

A city must identify all vacant and partially vacant land within the UGB with an employment comprehensive plan designation ("commercial" or "industrial").

(1) A city may assume that a lot or parcel is vacant if it is:

(a) Equal to or larger than one-half acre, if the lot or parcel does not contain a permanent building; or

(b) Equal to or larger than five acres, if less than one-half acre of the lot or parcel is occupied by a permanent building.

(2) A city may assume that a lot or parcel is partially vacant if it is greater than one acre in size with at least one-half acre that is not improved.

OAR 660-038-0140
Adjust Employment BLI to Account for Constrained Lands

A city using the method in this division must adjust the employment lands BLI prepared under OAR 660-038-0130 to account for constrained lands using this rule.

(1) First, the city must identify the following physical constraints on categories of land inventoried as "buildable" under OAR 660-038-0130:

(a) Floodways and water bodies,

(b) Other lands within the Special Flood Hazard Area (SFHA) as identified on the applicable Flood Insurance Rate Map (FIRM),

(c) Lands within the tsunami inundation zone established pursuant to ORS 455.446,

(d) For lands designated in the plan for commercial use, contiguous lands of at least one acre with slope greater than 25 percent. Slope shall be measured as the increase in elevation divided by the horizontal distance at maximum ten-foot contour intervals,

(e) For lands designated for industrial use, contiguous lands of at least one acre with slope greater than ***X*** percent. Slope shall be measured as the increase in elevation divided by the horizontal distance at maximum ten-foot contour intervals,

(f) Lands subject to protections as a result of an acknowledged resource protection program developed pursuant to Statewide Planning Goal 5 or 6,

(g) Lands subject to development prohibitions, natural resource protections, or both in acknowledged comprehensive plan provisions that implement Statewide Planning Goals 16, 17, or 18.

(2) Second, the city must reduce the employment development capacity on physically constrained lands by the following factors, in terms of acres:

(a) For lands within floodways and water bodies, 100 percent reduction.

(b) For other lands within the Special Flood Hazard Area (SFHA) as identified on the applicable Flood Insurance Rate Map (FIRM), a 50 percent reduction or the amount equivalent to the reduction in the current city code.

(c) For lands within the tsunami inundation zone, no reduction unless the city's existing zoning classification of such areas prohibits or reduces employment development, in which case the reduction shall be based upon the maximum development intensity allowed by the city's existing zoning classification.

(d) For commercially-designated lands with greater than 25 percent slopes, a 100 percent reduction. For industrially-designated lands with greater than ***X*** percent slopes, a 100 percent reduction.

(e) For lands in subsections (1)(f) and (g), the reduction shall be based upon the maximum development intensity allowed by the city's existing zoning classification.

(3) Finally, to determine the amount of land for needed commercial and industrial uses that is available in the UGB (based on the employment buildable lands inventory), the city must reduce the amount determined in OAR 660-038-0130 by the amounts determined in this rule.

OAR 660-038-0150
Determine if UGB Expansion is Necessary to Accommodate Employment Needs

(1) To determine whether to expand the UGB, a city using the method in this division must compare the amount of land needed for commercial and industrial development, in OAR 660-038-0120, with the amount of buildable land available for commercial and industrial development as determined in OAR 660-038-0140.

(2) If the amount of buildable land available is greater than the amount of land needed for both commercial and industrial development, then no urban growth boundary expansion for employment land is necessary.

(3) If the amount of buildable land available is less than the amount of land needed for commercial and industrial development, then the urban growth boundary may be expanded to provide the amount of land needed, provided that

(a) If the amount of buildable land available is less than the amount of land needed for industrial development, but is greater than the amount of land needed for commercial development, then the city must redesignate surplus commercially-designated land within the existing urban growth boundary for industrial development.

(b) If the amount of buildable land available is less than the amount of land needed for commercial development, but is greater than the amount of land needed for industrial development, then the city must redesignate surplus industrial-designated land within the existing urban growth boundary for commercial development.

OAR 660-038-0160
Establishment of Study Area to Evaluate Land for Inclusion in the UGB

Cities outside of Metro using the methods described in this division shall comply with this rule and OAR 660-038-0170 when determining which lands to include within the urban growth boundary in response to a deficit of land to meet long term needs.

(1) When evaluating lands for inclusion within the urban growth boundary, the city shall establish a study area that includes all land within:

(a) For cities under 10,000 – a distance that is at least ***X*** miles in all directions from the acknowledged UGB.

(b) For cities over 10,000 – a distance that is at least X^+ miles in all directions from the acknowledged UGB.

(2) After excluding areas described in (3) of this rule, the study area must include an amount of land that is at least 200 percent of the combined need deficiency for residential, employment and other land determined under OAR 660-038-0080 and OAR 660-038-0150.

(3) A city may exclude land from the study area if it determines that:

(a) It is impracticable to provide necessary public facilities or services to the land based on the requirements of section (4) of this rule.

(b) The land is subject to significant development hazards, due to a risk of:

(A) Landslides: a landslide deposit or scarp flank is described and mapped on the Statewide Landslide Information Database for Oregon (SLIDO) Release 3.2 Geodatabase published by the Oregon Department of Geology and Mineral Industries (DOGAMI) December 29, 2014, provided that the deposit or scarp flank in the data source is mapped at a scale of 1:40,000 or finer;

(B) Flooding: the land is within the Special Flood Hazard Area (SFHA) identified on the applicable Flood Insurance Rate Map (FIRM);

(C) Inundation during storm surges: the land is as subject to storm surge inundation and is within in the Special Flood Hazard Area (SFHA) identified on the applicable Flood Insurance Rate Map (FIRM); or

(D) Tsunamis: the land is within a tsunami inundation zone established pursuant to ORS 455.446.

(c) The long-term preservation of significant scenic, natural, cultural or recreational resources requires limiting or prohibiting urban development of the land that contains the following resources:

(A*)* Habitat that is described and mapped on an *[adopted]* Oregon Department of Fish and Wildlife (ODFW) Inventory as either:

(i) Big game winter range or a big game migration corridor, or

(ii) Critical habitat for state or federal special status species (threatened, endangered, candidate, or sensitive) such as Conservation Opportunity Areas.

(B) Aquatic areas subject to Statewide Planning Goal 16 that are in Natural or Conservation management units designated in an acknowledged comprehensive plan;

(C) Lands subject to acknowledged comprehensive plan provisions that implement Statewide Planning Goal 17, Coastal Shoreland, Use Requirement 1; or

(D) Lands subject to acknowledged comprehensive plan provisions that implement Statewide Planning Goal 18, Implementation Requirement 2.

(d) The land is owned by the federal government and managed primarily for rural uses.

(4) For purposes of subsection (3)(a), cities may consider it impracticable to provide necessary public facilities or services to the following lands:

(a) Contiguous areas of at least five acres where 75 percent or more of the land has a slope of 25 percent or greater. Slope shall be measured as the increase in elevation divided by the horizontal distance at maximum ten-foot contour intervals;

(b) Lands above a water service elevation limit established in an acknowledged comprehensive plan policy, an acknowledged public facilities plan, an adopted ordinance, or other written policy adopted by the service provider's governing body;

(c) Lands isolated from existing service networks by intervening physical barriers that would significantly impede and increase the cost of providing public facilities and services to such lands. Physical barriers that would significantly impede and increase the cost of providing public facilities and services include, but are not limited to:

(A) Lands that are separated from the current UGB by major rivers or other water bodies such that servicing the land would require one or more new bridge crossings to serve planned urban development;

(B) Topographic features such as canyons, ravines or ridges with slopes exceeding 40 percent;

(C) Freeways, rail lines, or other restricted access corridors that would require one or more new grade separated crossings to serve planned urban development; and

(D) Lands subject to existing measures to protect significant scenic, natural, cultural or recreational resources that:

(i) Are set forth in an acknowledged comprehensive plan, implementing regulations, or both; and,

(ii) Prohibit or substantially impede the placement or construction of necessary public facilities and services;

(d) The land is within the corporate limits or acknowledged UGB of another city.

(5) When a city that has a population of 10,000 or more evaluates or amends its urban growth boundary using a method described in this division, the city must notify districts and counties that have territory within the study area as required by ORS 197A.315 and meet other applicable requirements in that statute.

OAR 660-038-0170
Evaluation of Land in the Study Area for Inclusion in the UGB; Priorities

(1) When considering a UGB amendment, a city must decide which land to add to the UGB by evaluating all land in the study area determined under OAR 660-038-0160 using criteria in section (8) of this rule, as follows:

(a) Beginning with the highest priority of land available, a city must determine which land in that priority is suitable to accommodate the need deficiency determined under OAR 660-038-0080 and OAR 660-038-0150.

(b) If the amount of suitable land in the first priority category is not adequate to satisfy the identified need deficiency, a city must determine which land in the next priority is suitable to accommodate the remaining need and proceed in this manner until all the land need is accommodated.

(c) If the amount of suitable land in a particular priority category exceeds the amount necessary to satisfy the need deficiency, a city must choose which land in that priority to include in the UGB by applying the criteria in section (9) of this rule.

(2) First Priority – Urban reserve, exception land, and nonresource land: The city shall evaluate land in the study area that meets the description in subsection (a) - (c) of this section and select as much of the land as necessary to satisfy the need for land using criteria in section (8) of this rule. Each of the areas described in in subsection (a) - (c) of this section are of equal priority:

(a) Land designated as an urban reserve under OAR chapter 660, division 21, in an acknowledged comprehensive plan;

(b) Land that is subject to an acknowledged exception under ORS 197.732; and

(c) Land that is nonresource land.

(3) Second Priority – Marginal Land: If the amount of land appropriate for selection under section (2) is not sufficient to satisfy the need for land, the city shall evaluate the land within the study area that is designated as marginal land under ORS 197.247 (1991 Edition) in the acknowledged comprehensive plan and select as much of the land as necessary to satisfy the need for land using criteria in section (8) of this rule.

(4) Third Priority – Farm or Forest land that is not predominantly high value farm land: If the amount of land appropriate for selection under section (3) is not sufficient to satisfy the amount of land needed, the city shall evaluate land within the study area that is designated for agriculture or forest uses in the acknowledged comprehensive plan that is not predominantly high-value farmland, as defined in ORS 195.300, or that does not consist predominantly of prime or unique soils, as determined by the United States Department of Agriculture Natural Resources Conservation Service, and select as much of that land as necessary to satisfy the need for land:

(a) Using criteria in section (8) of this rule; and

(b) Using the predominant capability classification system or the predominant cubic site class, as appropriate for the acknowledged comprehensive plan designation, to select lower capability or cubic site class lands first.

(5) Fourth Priority – Agricultural land that is predominantly high value farmland: If the amount of land appropriate for selection under section (4) is not sufficient to satisfy the need for land, the city shall evaluate land within the study area that is designated as agricultural land in an acknowledged comprehensive plan and is predominantly high value farmland and select as much of that land as necessary to satisfy the need for land using criteria in section (8) of this rule. A local government may not select land that is predominantly made up of prime or unique farm soils, as defined by the United States Department of Agriculture Natural Resources Conservation Service, unless there is an insufficient amount of other land to satisfy its land need.

(6) Notwithstanding section (5) of this rule, land that would otherwise be excluded from an urban growth boundary may be included if:

(a) The land contains a small amount of resource land that is not important to the commercial agricultural enterprise in the area and the land must be included to connect a nearby and significantly larger area of land of higher priority for inclusion within the urban growth boundary; or

(b) The land contains a small amount of resource land that is not predominantly high value farmland or predominantly made up of prime or unique farm soils and the land is completely surrounded by land of higher priority for inclusion into the urban growth boundary.

(7) For purposes of sections (4) and (5) of this rule, when evaluating the agricultural or forest capability of land within a study area, "land" means *[definition under development]*.

(8) For purposes of this rule, "land suitable to accommodate the need deficiency determined under OAR 660-038-0080 and OAR 660-038-0150" means buildable land that *[to be defined]*

(9) If the amount of suitable land in a particular priority category under sections (2)-(5) exceeds the amount necessary to satisfy the need deficiency, a local government must choose which land in that priority to include in the UGB by applying the location factors of Goal 14 and applicable criteria in the acknowledged comprehensive plan and land use regulations. The city may not apply local plan criteria that contradict the requirements of the Boundary Location Factors of Goal 14. The Goal 14 Boundary Location Factors are not independent criteria; when the factors are applied to compare alternative boundary locations and to determine the UGB location, a city must show that it considered and balanced all the factors.

(10) For purposes of this rule, the term "public facilities and services" in Goal 14, Boundary Location Factor 2 means water, sanitary sewer, and transportation facilities. In applying Goal 14, Boundary Location Factor 2, to evaluate alternative locations, the city must compare relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services needed to urbanize alternative boundary locations. The city must conduct this evaluation and comparison in coordination with service providers, including the Oregon Department of Transportation with regard to impacts on the state transportation system. "Coordination" includes timely notice to service providers and the consideration of evaluation methodologies recommended by service providers. The evaluation and comparison must include:

(a) The impacts to existing water, sanitary sewer, and transportation facilities that serve nearby areas already inside the UGB;

(b) The capacity of existing public facilities and services to serve areas already inside the UGB as well as areas proposed for addition to the UGB; and

(c) The need for new transportation facilities, such as highways and other roadways, interchanges, arterials and collectors, additional travel lanes, other major improvements on

existing roadways and, for urban areas of 25,000 or more, the provision of public transit service.

OAR 660-038-0180
Planning Requirements for Land added to a UGB

(1) A city must plan and zone lands included within the urban growth boundary:

(a) For categories of land uses in amounts that are roughly proportional to the land need determined for each category of use; and

(b) For an intensity of use that is generally consistent with the estimates that were used to determine the amount of land needed.

(2) All land added to a UGB under this division must be planned and zoned such that the lands will not significantly affect a state highway, a state highway interchange, or a freight route designated in the Oregon Highway Plan, based on the requirements of OAR 660-012-0060(1) and on written concurrence provided by the Department of Transportation. However, a city may add land that does not meet this requirement provided the land is planned and zoned either:

(a) For industrial uses only, or

(b) Compact urban development consisting of a mixed-use, pedestrian friendly center or neighborhood as described in OAR 660-012-0060(8).

(3) For lands added to the UGB to provide for residential uses, the city must also satisfy applicable requirements of OAR 660-038-0190.

(4) If factual information is submitted demonstrating that a Goal 5 resource site, or the impact areas of such a site, is included in the amended UGB area, the city shall apply the applicable requirements of OAR chapter 660, division 23. For purposes of this section, “impact area” is a geographic area within which conflicting uses could adversely affect a significant Goal 5 resource, as described in OAR 660-023-0040(3).

(5) A city must assign appropriate urban plan designations to land added to the UGB consistent with the need determination. The city must also apply appropriate zoning to the added land consistent with the plan designation or may maintain the land as urbanizable land until the land is rezoned for the planned urban uses, either by retaining the zoning that was assigned prior to inclusion in the boundary or by applying other interim zoning that maintains the land’s potential for planned urban development.

(6) When lands included within the urban growth boundary pursuant to this division are planned and zoned for industrial or residential uses, the lands must remain planned and zoned for the use

unless a rule of the commission allows a change in planning and zoning based on a significant change in circumstance.

(7) The UGB and amendments to the UGB must be shown on the applicable city and county plan and zone maps at a scale sufficient to determine which particular lots or parcels are included in the UGB. Where a UGB does not follow lot or parcel lines, the map must provide sufficient information to determine the precise UGB location.

(8) Amendment of an urban growth boundary shall be a cooperative process among cities and counties. An urban growth boundary and amendments to the boundary shall be adopted by all cities within the boundary and by the county or counties within which the boundary is located. Cities and counties shall follow the requirements of OAR 660-018-0021 regarding coordinated notice of a UGB amendment.

OAR 660-038-0190
Additional Planning for Residential Lands Added to the UGB

Cities that use the method in this division to provide land for needed housing must plan for residential lands added to the UGB as provided in this rule, in addition to the requirements in OAR 660-038-0180.

(1) The comprehensive plan and implementing zoning shall allow the housing types and densities determined to be needed in OAR 660-038-0040 and 660-038-0050 under clear and objective standards and shall meet other needed housing requirements specified in ORS 197.307(3)(b) and 197.307(6).

(2) The city and appropriate counties must assign urban plan designations to the added land consistent with the need determination, and either:

(a) Apply appropriate zoning to the added land consistent with the plan designation, or

(b) Adopt measures to maintain the land as urbanizable land until the land is rezoned for the planned urban uses by retaining the zoning that was assigned prior to inclusion in the boundary or by applying other interim zoning that maintains the land's potential for planned urban development. Measures for rezoning urbanizable land for needed housing shall be clear and objective and consistent with other requirements of ORS 197.307.

(3) Cities with UGB population of 10,000 or greater must either:

(a) Consider the housing measures listed in the table 8 and adopt at least one high impact measure or three low impact measures, or

(b) Satisfy the alternate performance standard in section (4).

(4) A city has satisfied the alternate performance standard from OAR 660-038-0180(3)(b) if the city:

(a) Has a development code that contains the provisions specified in items 1 through 5 and 27 through 29 of Table 8 ; and

(b) Demonstrates with substantial evidence in the record that, during the preceding planning period or preceding seven years, whichever is less, the city:

(A) If located in the Willamette Valley, exceeded the median rate of redevelopment and infill for cities with a population of 10,000 or more in the Willamette Valley that are outside of the boundaries of Metro; or

(B) If located outside of the Willamette Valley, exceeded the median rate of redevelopment and infill for cities with a population of 10,000 or more that are outside the Willamette Valley.

OAR 660-038-0210
Serviceability

(1) A city that amends its urban growth boundary using a method described in this division shall demonstrate that lands included within the urban growth boundary:

(a) Provide sufficient serviceable land for at least a seven-year period, and

(b) Can all be serviceable over a 14-year period.

(2) For purposes of subsection (1)(a) of this rule, a city shall demonstrate adequate sewer, water and transportation capacity to serve at least seven years of planned urban development based on system capacity and system improvements that are identified and described in an acknowledged public facilities plan, an acknowledged Transportation System Plan, a capital improvement plan, or the findings adopted by a city in support of a decision to amend its urban growth boundary. This shall consist of sewer, water and transportation capacity that is available or can be provided based on subsection (a) or (b) of this section, or both:

(a) Capacity is available: existing sewer, water and transportation system capacity sufficient to serve some or all of the anticipated seven-year demand is available. To demonstrate available sewer and water capacity, a city may rely upon the system capacity documentation contained in the acknowledged Public Facilities Plan adopted pursuant to OAR chapter 660, division 11, and documentation from city or other service provider records of current system condition and demand. To demonstrate available transportation system capacity, a city may rely upon the system capacity documentation contained in an acknowledged Transportation System Plan (TSP) adopted pursuant to OAR chapter 660, division 12;

(b) Capacity can be provided within seven years: sewer, water and transportation system capacity sufficient to serve the anticipated seven-year demand can be provided by identified system improvements that:

(A) Are fully funded and scheduled for construction within a seven-year period;

(B) Can be made subject to committed financing, which means a city or other service provider has one or more dedicated funding mechanisms in place that will generate sufficient revenue to fund the construction of such improvements within a seven year period; or

(C) Can have committed financing in place, which means a city or other service provider does not have dedicated funding mechanisms in place but has identified funding sources and methods that will be implemented by the city or other service provider, and that will generate sufficient revenues to fund the construction of such improvements within a seven-year period.

(3) For purposes of subsection (1)(b) of this rule, to demonstrate that adequate sewer, water and transportation capacity can be in place for that portion of the 14-year period for which capacity has not been demonstrated in accordance with section (2) of this rule, a city shall:

(a) Identify the type and amount of the needed capacity;

(b) Identify the system improvements required to provide the needed capacity; and,

(c) Identify the funding method(s) that is or can be in place to provide committed financing for the needed capacity within the 14-year period. This identification shall include:

(A) The type of proposed funding method(s);

(B) The statutory or other legal authority for establishing the proposed funding method(s);

(C) The timing of the establishment of the proposed funding method(s); and,

(D) The projected revenues to be generated by the proposed funding method(s).

(4) For purposes of this rule, “sewer, water and transportation capacity for planned urban development” includes:

(a) Sewer capacity, which consists of wastewater treatment facility capacity and collection system capacity, including interceptors, lift or pump stations, force mains, and main sewer lines;

(b) Water capacity, including:

(A) Available water rights;

(B) Water treatment capacity;

(C) Water storage capacity, including system reserves needed for fire suppression; and,

(D) Distribution system capacity, including pumping facilities, primary and secondary feeders, and distributor mains; and

(c) Transportation capacity, including:

(A) Networks of pedestrian, bicycle, transit, and street facilities; and

(B) Performance of the planned transportation system measured against adopted transportation performance standards set forth in the applicable acknowledged Transportation System Plan.

(5) For purposes of this rule, "committed financing" means financing methods for which a city or other service provider has identified and documented the following: the authority to establish and implement the method, the amount of funding to be generated, the purpose to which the funding will be dedicated, and the repayment method and schedule for any bonded or credit indebtedness is identified and documented. Committed financing includes, but is not limited to, funding that is:

(a) Included in the adopted budget of the service provider;

(b) Designated for projects included in the State Transportation Improvement Plan;

(c) Provided through a development agreement entered into pursuant to ORS 94.504 to 94.528;

(d) Provided by system development charges established pursuant to ORS 223.997 to 223.314 or by other authorized development fees and exactions;

(e) Provided by utility fees;

(f) Provided through Local Improvement District or Reimbursement District assessments; or

(g) Provided by revenue bonds, financing agreements, voter approved general obligation bonds or other authorized debt instruments.

(6) For lands that are added to an urban growth boundary pursuant to a method described in this this division but not made "serviceable" within 20 years after the date of their inclusion:

(a) The lands must be removed from within the urban growth boundary the next time the city evaluates the urban growth boundary*;* or

(b) If there have been significant increases in the cost of making the lands serviceable, the planned development capacity of the lands must be reduced by an amount based on such costs the next time the city evaluates the need for land in the UGB.

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Tables for OAR chapter 660, division 38

Table 1: OAR 660-038-0040(3) project the mix of housing types needed for new development over the 14-year period using the ranges of numbers in Table 1

UGB POPULATION	**MEDIUM DENSITY**		**HIGH DENSITY (or higher density for cities with UGB population less than 2,500)**	
	Existing	Required*	Existing	Required*
UNDER 2500	N/A	N/A	0-9 percent	9-25 percent
	N/A	N/A	9-15 percent	n+1 percent to n+15 percent
	N/A	N/A	>15percent	n percent to n+15percent
2500-10000	0-11 percent	11-21 percent	0-11 percent	11-21 percent
	11-16 percent	n+1 percent to n+11 percent	11-17 percent	n+1 percent to n+11 percent
	>16 percent	n percent to n+10percent	>17 percent	n percent to n+10 percent
10000-25000	0-14 percent	14-24 percent	0-14 percent	14-24 percent
	14-17 percent	n+1 percent to n+11 percent	14-17 percent	n+1 percent to n+11 percent
	>17 percent	n percent to n+10percent	>17 percent	n percent to n+10 percent
OVER 25000	0-18percent	n+1 percent to n+11 percent	0-21 percent	n+1 percent to n+11 percent
	>18 percent	n percent to n+10 percent	>21 percent	n percent to n+10 percent

Table 1

n = existing percentage of medium or high density housing within the city boundaries
** Required percentage may be any whole number or whole number plus a fraction of a whole number within the allowed range*

Table 2 OAR 660-038-0050(1): To determine the net acreage needed for each category of residential development over the 14-year period, the city must divide the number of needed units determined in OAR 660-038-0040 by the number of dwelling units per acre from the ranges in Table 2.

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	Low (or lower for cities with UGB population less than 2,500	**Medium**	**High(or higher for cities with UGB population less than 2,500)**
Eastern Oregon*			
Population Less than 2,500	5 to 6.5 du/ac.	n/a	10-15 du/ac.
Population 2,500-10,000	5 to 6.5 du/ac.	10-12 du/ac.	15-24 du/ac.
Population 10,000-25,000	5 to 6.5 du/ac.	10-12 du/ac.	15-24 du/ac.
Population 25,000 or greater	5 to 6.5 du/ac.	10-14 du/ac.	15-33 du/ac.
Outside of Eastern Oregon			
Population Less than 2,500	5 to 6 du/ac.	n/a	10-15 du/ac.
Population 2,500-10,000	5 to 6 du/ac.	10-12 du/ac.	15-24 du/ac.
Population 10,000-25,000	6 to 7 du/ac.	10-12 du/ac.	15-24 du/ac.
Population 25,000 or greater	6 to 7 du/ac.	12-15 du/ac.	20-33 du/ac.

Table 2

**Eastern Oregon consists of the following counties: Baker, Gilliam, Grant, Harney, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, and Wheeler.*

Table 3: OAR 660-038-0050(2) Cities with a UGB population of less than 2,500 shall determine whether to expand the UGB based on Table 3.

CITIES WITH UGB POPULATION LESS THAN 2,500 - SCENARIOS FOR LAND DEFICIT AND SURPLUS			
Scenario	**Low Density**	**High Density**	**Result**
1	Surplus	Surplus	No UGB Expansion
2	Deficit	Deficit	UGB expansion to satisfy all land needs. A city may redesignate low density land within the UGB to meet in all or in part a high density land need, and then expand the UGB to satisfy land needs as modified.
3	Surplus	Deficit	UGB expansion to satisfy high density land need, alternatively satisfy all or part of high density land need by redesignating surplus low density land
4	Deficit	Surplus	UGB expansion to satisfy low density land need. Do not reduce high density land surplus.

Table 3

Table 4 OAR 660-038-0050(3) Cities with a UGB population greater than or equal to 2,500 and less than 10,000 shall determine whether to expand the UGB based on Table 4:

CITIES WITH UGB POPULATION GREATER THAN OR EQUAL TO 2,500 AND LESS THAN 10,000				
Scenario	**Low Density**	**Medium Density**	**High Density**	
1	Surplus	Surplus	Surplus	No UGB expansion
2	Deficit	Deficit	Deficit	UGB expansion to satisfy all land needs. A city may redesignate low density land within the UGB to meet in all or in part a medium or high density land need, and then expand the UGB to satisfy land needs as modified
3	Surplus	Deficit	Deficit	UGB expansion to satisfy medium and high density land need – alternatively, satisfy all or part of medium and high density land need by redesignating surplus low density land.
4	Surplus	Surplus	Deficit	UGB expansion to satisfy high density land need – alternatively, satisfy all or part of high density land need by redesignating surplus low and medium density land.
5	Surplus	Deficit	Surplus	UGB expansion to satisfy medium density land need – alternatively, satisfy all or part of medium density land need by redesignating surplus low density land. Do not reduce high density land surplus.
6	Deficit	Surplus	Surplus	UGB expansion to satisfy low density land need. Do not reduce medium or high density land surplus.
7	Deficit	Deficit	Surplus	UGB expansion to satisfy low and medium density land need. Do not reduce high density land surplus.
8	Deficit	Surplus	Deficit	UGB expansion to satisfy low density land need. UGB expansion to satisfy high density land need – alternatively, satisfy all or part of high density land need by redesignating surplus medium density land. Do not reduce medium density land surplus to satisfy low density land need.

Table 4

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Table 5 OAR 660-038-0050(4) Cities with a UGB population greater than 10,000 shall determine whether to expand the UGB based on Table 5:

CITIES WITH UGB POPULATION GREATER THAN 10,000 – SCENARIOS FOR LAND DEFICIT AND SURPLUS				
Scenario	Low Density	Medium Density	High Density	
1	Surplus	Surplus	Surplus	No UGB expansion
2	Deficit	Deficit	Deficit	UGB expansion to satisfy all land needs. A city may redesignate low density land within the UGB to meet in all or in part a medium or high density land need, and then expand the UGB to satisfy land needs as modified.
3	Surplus	Deficit	Deficit	Satisfy at least 50percent of medium and high density deficit by redesignating low density land inside UGB, unless this would result in a deficit of low density land.
4	Surplus	Surplus	Deficit	Satisfy at least 50 percent of high density deficit by redesignating low and medium density land inside UGB, unless this would result in a deficit of low or medium density land.
5	Surplus	Deficit	Surplus	Satisfy at least 50 percent of medium density deficit by redesignating low density land inside UGB, unless this would result in a deficit of low density land. Do not reduce high density land surplus.
6	Deficit	Surplus	Surplus	UGB expansion to satisfy low density land need. Do not reduce medium or high density land surplus.
7	Deficit	Deficit	Surplus	UGB expansion to satisfy low and medium density land need. Do not reduce high density land surplus.
8	Deficit	Surplus	Deficit	UGB expansion to satisfy low density land need. Satisfy at least 50 percent of high density deficit by redesignating medium density land inside UGB, unless this would result in a deficit of medium density land. Do not reduce medium density land surplus to satisfy low density land need.

Table 6: Determine the jobs currently in the city, sorted into two categories: "commercial" and "industrial" (NOTE: *This will be a "look-up table" provided to DLCD by the Employment*

Department. The table is not available at the time of this draft, but will be available prior to rule adoption).

Table 7: Based on the OED Employment Forecast, determine the number of "new" jobs projected to occur in the region that includes the city, sorted into two categories: "commercial" and "industrial" (NOTE: *This will be a "look-up table" provided to DLCD by the Employment Department. The table is not available at the time of this draft, but will be available prior to rule adoption*).

Table 8: OAR 660-038-0190(5) Table of measures to accommodate housing needs within the urban growth boundary:

Item	Current Zoning Code Provision	Adopted change (note: none of these changes may require approval of a conditional use permit)	High or Low Impact
1	Does not allow Accessory Dwelling Units	Allows Accessory Dwelling Units: No off-street parking requirement Any type of structure Owner may live in either dwelling Allowed in any zoning district that allows detached single-family No Systems Development Charges for Water or Sewer	High
2	No minimum density standards	Minimum density standard at least 70 percent of maximum density for all residential zoning districts. Exemptions for constrained lands as defined in OAR 660—38-xxxx and for minor partitions.	High
3	Single-family detached homes allowed in medium density zoning district (as defined by residential need path standards)	No more than 25 percent of residences in development application in medium density zoning district may be single-family detached homes. Minor partitions exempted.	High
4	Off-street parking requirements greater than one space per multi-family dwelling	Change parking requirements to maximum of one space per multi-family dwelling.	High
5	Off-street parking requirements of one space per multi-family dwelling or greater	Change parking requirements to maximum of no more than one space per multi-family dwelling and no more than .75 spaces per multi-family dwelling within ¼ mile of high frequency transit service (defined as transit service with weekday peak hour service headway of 20 minutes or less). Allow provision of on-street parking spaces to meet off-street parking requirements. Allow reductions below one space per multi-family dwelling for developments that provide spaces for carshare vehicles or free transit passes to residents.	High
6	No density bonus for	Establish density bonus for affordable housing of at	High

Item	Current Zoning Code Provision	Adopted change (note: none of these changes may require approval of a conditional use permit)	High or Low Impact
	affordable housing	least 25 percent with no additional development review standards vs. development applications that do not include a density bonus. The affordable housing units shall constitute at least 25 percent of the overall dwelling units in the development application granted the density bonus. The affordable housing units must be reserved as affordable housing for a minimum of 50 years. Affordable housing is defined at housing that is reserved for households with a maximum household income of 80 percent of a city's mean household income. The percentage threshold for the household affordable housing reservation may also be less than 80percent of a city's mean household income.	
7	Current land use/zoning designations	Rezone from low density to medium or high density: City UGB 10,000 to 25,000: at least 10 acres City UGB 25,000 to 50,000: at least 25 acres City UGB > 50,000: at least 50 acres	High
8	Does not allow duplexes in single-family residential zoning districts	Permit duplexes on any lot in single-family residential zoning districts with no additional development review standards vs. single-family detached residences.	High
9	Does not allow residences in some commercial zoning districts	Allow residences above the first floor and behind commercial uses on additional commercially-zoned lands, with no off-street parking requirement greater than one space per residence. UGB population 10,000 to 25,000: at least 20 acres UGB population 25,000 to 50,000: at least 50 acres UGB population > 50,000: at least 100 acres	High
10	Systems Development Charges reductions or waivers	Adopt provisions that eliminate systems development charges for affordable housing units, or reduce systems development charges for such units by a minimum of 75 percent of the total systems development charges assessed to similar units that are not reserved for affordable housing. The affordable housing units must be reserved as affordable housing for a minimum of 50 years. Affordable housing is defined at housing that is reserved for households with a maximum household income of 80 percent of a city's mean household income. The percentage threshold for the household affordable housing reservation may also be less than 80 percent of a city's mean household income.	High
11	Does not authorize property	Authorizes property tax exemptions for low income	High

Item	Current Zoning Code Provision	Adopted change (note: none of these changes may require approval of a conditional use permit)	High or Low Impact
	tax exemptions for low income housing development pursuant to ORS 307.515 to 307.537	housing development pursuant to ORS 307.515 to 307.537 under both the criteria set forth in ORS 307.517 and the criteria set forth in ORS 307.518, for all zoning districts within the city that permit multiple-family dwellings, with no additional development review standards vs. equivalent residential development that does not receive the exemption.	
12	Does not authorize property tax exemptions for non-profit corporation low-income housing development pursuant to ORS 307.540 to 307.548.	Authorizes property tax exemptions for non-profit corporation low-income housing development pursuant to ORS 307.540 to 307.548, with no additional development review standards vs. equivalent residential development that does not receive the exemption.	High
13	Does not authorize property tax exemptions for multiple-unit housing pursuant to ORS 307.600 to 307.637	Authorizes property tax exemptions for multiple-unit housing pursuant to ORS 307.600 to 307.637, with no additional restrictions on location of such exemptions above those set in the statutes, and with required benefits pursuant to ORS 307.618 that are clear and objective and do not have the effect of discouraging the use of the property tax exemption by otherwise qualifying developments through the imposition of unreasonable cost or delay.	High
14	Allows ADUs, but missing one or more of desired attributes	Allows ADUs: No off-street parking requirement Any type of structure Owner may live in either dwelling Any zoning district that allows detached single-family No Systems Development Charges for Water or Sewer	Low
15	No minimum density standards	Minimum density standards at least 50 percent of maximum density for all residential zoning districts. Exemptions for constrained lands as defined in OAR 660—38-xxxx and for minor partitions.	Low
16	Minimum density standard less than 70percent of maximum density	Raise minimum density standards to at least 70 percent of maximum density for all residential zoning districts. Exemptions for constrained lands as defined in OAR 660—38-xxxx and for minor partitions.	Low
17	Current land use/zoning designations	Rezone from low density to medium or high density: City UGB 10,000 to 25,000: 5 to 10 acres City UGB 25,000 to 50,000: 10 to 25 acres City UGB > 50,000: 20 to 50 acres.	Low

Item	Current Zoning Code Provision	Adopted change (note: none of these changes may require approval of a conditional use permit)	High or Low Impact
18	Density bonus for affordable housing less than 25 percent or with additional development review restrictions vs. standard housing	Increase density bonus for affordable housing to at least 25 percent with no additional development review standards vs. standard housing	Low
19	Current land use/zoning designations	Reduce minimum lot size for single-family residential zoning districts by at least 2,000 square feet: City UGB 10,000-25,000: at least 25 acres City UGB 25,000-50,000: at least 50 acres City UGB >50,000: at least 100 acres	Low
20	Does not allow residences in some commercial zoning districts	Allow residences above the first floor and behind commercial uses on additional commercially-zoned lands, with no off-street parking requirement greater than one space per residence. UGB population 10,000 to 25,000: 10 to 20 acres UGB population 25,000 to 50,000: 20 to 50 acres UGB population > 50,000: at least 40 to 100 acres	Low
21	Does not have a cottage housing code provision	Adopt a cottage housing code provision authorizing at least 12 du/ac. Cottage housing standards must (*need standard – it's not in our small cities model code*)	Low
22	Does not allow duplexes in single-family residential zoning districts	Permit duplexes on corner lots in single-family residential zoning districts with no additional development review restrictions vs. single-family detached residence.	Low
23	Current public street standards	Reduction in public street right of way width standard by at least two feet.	Low
24	No systems development charge deferrals	Adopt provisions that defer payment of systems development charges for affordable housing units to the date of occupancy of the unit. The affordable housing units must be reserved as affordable housing for a minimum of 50 years. Affordable housing is defined at housing that is reserved for households with a maximum household income of 80 percent of a city's mean household income. The percentage threshold for the household affordable housing reservation may also be less than 80 percent of a city's mean household income.	Low
25	Does not authorize property tax exemptions for single-unit housing in distressed areas pursuant to ORS 307.651 to 307.687	Authorizes property tax exemptions for single-unit housing pursuant to ORS 307.651 to 307.687, with design standards pursuant to ORS 307.657(3) that are clear and objective and do not have the effect of discouraging the use of the property tax exemption by otherwise qualifying developments through the	Low

Item	Current Zoning Code Provision	Adopted change (note: none of these changes may require approval of a conditional use permit)	High or Low Impact
		imposition of unreasonable cost or delay.	
26	Does not authorize freeze in property tax assessment valuation for rehabilitated residential property pursuant to ORS 308.450 to 308.481	Authorizes freeze in property tax assessment valuation for rehabilitated residential property pursuant to ORS 308.450 to 308.481. The boundaries of the area that qualifies for the assessment freeze shall be between 10 percent and 20 percent of the city's total land area. The city shall promulgate standards and guidelines for review of applications under the program pursuant to ORS 308.456(3) that are clear and objective and do not have the effect of discouraging use of the program by otherwise qualifying rehabilitations through the imposition of unreasonable cost and delay.	Low
27	Single-family homes allowed in high density zoning district (as defined by residential need path standards)	New single-family homes not allowed in high density zoning district	Low
28	Does not allow attached-single family residences in a single-family residential district with a minimum lot size 5,000 square feet or less	Permit attached single-family residences in a single-family residential district with a minimum lot size of 5,000 square feet or less.	Low
29	No maximum lot size for single-family detached dwellings in zoning districts that permit attached and multi-family housing	Maximum lot size for single-family detached dwellings in zoning districts that permit attached and multi-family housing of 5,000 square feet. Minor partitions exempted.	Low

Table 8

Version: http://intranet.dlcd.state.or.us/projects/UGBRAC/Reference Documents/Public Draft 1 (Sept LCDC Meeting).docx

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DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT

DIVISION 24
URBAN GROWTH BOUNDARIES

Proposed New rules and Rule Amendments in Response to ORS 197A
First public Draft September 15, 2015

Note: No changes are proposed to existing rules at OAR 660-024-0020 and 660-024 0040

660-024-0000
Purpose and Applicability

(1) The rules in this division clarify procedures and requirements of Goal 14 regarding a local government adoption or amendment of an urban growth boundary (UGB). **The rules in this division do not apply to a UGB amendment under ORS 197A.300 to 197A.325 and OAR chapter 660, division 38.**

(2) The rules in this division interpret Goal 14 as amended by Land Conservation and Development Commission (the Commission) on or after April 28, 2005, and are not applicable to plan amendments or land use decisions governed by previous versions of Goal 14 still in effect.

(3) The rules in this division adopted on October 5, 2006, are effective April 5, 2007. The rules in this division amended on March 20, 2008, are effective April 18, 2008. The rules in this division adopted March 13, 2009, and amendments to rules in this division adopted on that date, are effective April 16, 2009, except as follows:

(a) A local government may choose to not apply this division to a plan amendment concerning the evaluation or amendment of a UGB, regardless of the date of that amendment, if the local government initiated the evaluation or amendment of the UGB prior to April 5, 2007;

(b) For purposes of this rule, "initiated" means that the local government either:

(A) Issued the public notice specified in OAR 660-018-0020 for the proposed plan amendment concerning the evaluation or amendment of the UGB; or

(B) Received LCDC approval of a periodic review work program that includes a work task to evaluate the UGB land supply or amend the UGB;

(c) A local government choice whether to apply this division must include the entire division and may not differ with respect to individual rules in the division.

(4) The rules in this division adopted December 4, 2015, are effective January 1, 2016.

660-024-0010
Definitions

In this division, the definitions in the statewide goals and the following definitions apply:

(1) “Buildable Land” is a term applying to residential land only, and has the same meaning as provided in OAR 660-008-0005(2

(2) "EOA" means an economic opportunities analysis carried out under OAR 660-009-0015.

(3) "Housing need" or “housing need analysis” refers to a local determination as to the needed amount, types and densities of housing that will be:

(a) Commensurate with the financial capabilities of present and future area residents of all income levels during the 20-year planning period;

(b) Consistent with any adopted regional housing standards, state statutes regarding housing need and with Goal 10 and rules interpreting that goal; and

(c) Consistent with Goal 14 requirements.

(4) "Local government" means a city or county, or a metropolitan service district described in ORS 197.015(13).

(5) "Metro boundary" means the boundary of a metropolitan service district defined in ORS 197.015(13).

(6) “Net Buildable Acre” consists of 43,560 square feet of residentially designated buildable land after excluding future rights-of-way for streets and roads.

(7) "Safe harbor" means an optional course of action that a local government may use to satisfy a requirement of Goal 14. Use of a safe harbor prescribed in this division will satisfy the requirement for which it is prescribed. A safe harbor is not the only way or necessarily the preferred way to comply with a requirement and it is not intended to interpret the requirement for any purpose other than applying a safe harbor within this division.

(8) “Suitable vacant and developed land” describes land for employment opportunities, and has the same meaning as provided in OAR 660-009-0005 section (1) for “developed land,” section (12) for “suitable,” and section (14) for “vacant land.

(9) "UGB" means "urban growth boundary."

(10) "Urban area" means the land within a UGB.

660-024-0050
Land Inventory and Response to Deficiency

(1) When evaluating or amending a UGB, a local government must inventory land inside the UGB to determine whether there is adequate development capacity to accommodate 20-year needs determined in OAR 660-024-0040. For residential land, the buildable land inventory must include vacant and redevelopable land, and be conducted in accordance with OAR 660-007-0045 or 660-008-0010, whichever is applicable, and ORS 197.296 for local governments subject to that statute. For employment land, the inventory must include suitable vacant and developed land designated for industrial or other employment use, and must be conducted in accordance with OAR 660-009-0015.

(2) As safe harbors, a local government, except a city with a population over 25,000 or a metropolitan service district described in ORS 197.015(13), may use the following assumptions to inventory the capacity of buildable lands to accommodate housing needs:

(a) The infill potential of developed residential lots or parcels of one-half acre or more may be determined by subtracting one-quarter acre (10,890 square feet) for the existing dwelling and assuming that the remainder is buildable land;

(b) Existing lots of less than one-half acre that are currently occupied by a residence may be assumed to be fully developed.

(3) As safe harbors when inventorying land to accommodate industrial and other employment needs, a local government may assume that a lot or parcel is vacant if it is:

(a) Equal to or larger than one-half acre, if the lot or parcel does not contain a permanent building; or

(b) Equal to or larger than five acres, if less than one-half acre of the lot or parcel is occupied by a permanent building.

(4) If the inventory demonstrates that the development capacity of land inside the UGB is inadequate to accommodate the estimated 20-year needs determined under OAR 660-024-0040, the local government must amend the plan to satisfy the need deficiency, either by increasing the development capacity of land already inside the city or by expanding the UGB, or both, and in accordance with ORS 197.296 where applicable. Prior to expanding the UGB, a local government must demonstrate that the estimated needs cannot reasonably be accommodated on land already inside the UGB. If the local government determines there is a need to expand the UGB, changes to the UGB must be determined by evaluating alternative boundary locations consistent with Goal 14 and applicable rules at OAR 660-024-0060 or **OAR 660-024-0065 and OAR 660-024-0067.**

(5) In evaluating an amendment of a UGB submitted under ORS 197.626, the director or the Commission may determine that a difference between the estimated 20-year needs determined under OAR 660-024-0040 and the amount of land and development capacity added to the UGB by the submitted amendment is unlikely to significantly affect land supply or resource land protection, and as a result, may determine that the proposed amendment complies with section (4) of this rule.

(6) When land is added to the UGB, the local government must assign appropriate urban plan designations to the added land, consistent with the need determination. The local government must also apply appropriate zoning to the added land consistent with the plan designation or may maintain the land as urbanizable land until the land is rezoned for the planned urban uses, either by retaining the zoning that was assigned prior to inclusion in the boundary or by applying other interim zoning that maintains the land's potential for planned urban development. The requirements of ORS 197.296 regarding planning and zoning also apply when local governments specified in that statute add land to the UGB.

(7) As a safe harbor regarding requirements concerning “efficiency,” a local government that chooses to use the density and mix safe harbors in OAR 660-024-0040(8) is deemed to have met the Goal 14 efficiency requirements under:

(a) Sections (1) and (4) of this rule regarding evaluation of the development capacity of residential land inside the UGB to accommodate the estimated 20-year needs; and

(b) Goal 14 regarding a demonstration that residential needs cannot be reasonably accommodated on residential land already inside the UGB, but not with respect to:

(A) A demonstration that residential needs cannot be reasonably accommodated by rezoning non-residential land, and

(B) Compliance with Goal 14 Boundary Location factors.

660-024-0060
<u>Metro</u> Boundary Location Alternatives Analysis

(1) When considering a [~~UGB~~] **<u>Metro boundary</u>** amendment, [~~*a local government*~~] **<u>Metro</u>** must determine which land to add by evaluating alternative boundary locations. **<u>For Metro, t</u>**~~T~~his determination must be consistent with the priority of land specified in ORS 197.298 and the boundary location factors of Goal 14, as follows:

(a) Beginning with the highest priority of land available, [~~*a local government*~~] **<u>Metro</u>** must determine which land in that priority is suitable to accommodate the need deficiency determined under OAR 660-024-0050.

(b) If the amount of suitable land in the first priority category exceeds the amount necessary to satisfy the need deficiency, [~~*a local government*~~] **Metro** must apply the location factors of Goal 14 to choose which land in that priority to include in the **Metro boundary**[~~UGB~~].

(c) If the amount of suitable land in the first priority category is not adequate to satisfy the identified need deficiency, [~~*a local government*~~] **Metro** must determine which land in the next priority is suitable to accommodate the remaining need, and proceed using the same method specified in subsections (a) and (b) of this section until the land need is accommodated.

(d) Notwithstanding subsection (a) to (c) of this section, [~~*a local government*~~] **Metro** may consider land of lower priority as specified in ORS 197.298(3).

(e) For purposes of this **section** ~~rule~~, the determination of suitable land to accommodate land needs must include consideration of any suitability characteristics specified under section (5) of this rule, as well as other provisions of law applicable in determining whether land is buildable or suitable.

(2) Notwithstanding OAR 660-024-0050(4) and subsection (1)(c) of this rule, except during periodic review or other legislative review of the [~~UGB~~]**Metro boundary**, [~~*a local government*~~] **Metro** may approve an application under ORS 197.610 to 197.625 for a **Metro boundary[**~~UGB~~] amendment proposing to add an amount of land less than necessary to satisfy the land need deficiency determined under OAR 660-024-0050(4), provided the amendment complies with all other applicable requirements.]

(3) The boundary location factors of Goal 14 are not independent criteria. When the factors are applied to compare alternative boundary locations and to determine the [~~UGB~~] **Metro Boundary** location, **Metro**[~~a local government]~~ must show that all the factors were considered and balanced.

(4) In determining alternative land for evaluation under ORS 197.298, "land adjacent to the UGB" is not limited to those lots or parcels that abut the UGB, but also includes land in the vicinity of the UGB that has a reasonable potential to satisfy the identified need deficiency.

(5) If [~~*a local government*~~] **Metro** has specified characteristics such as parcel size, topography, or proximity that are necessary for land to be suitable for an identified need, [~~*a local government*~~] **Metro** may limit its consideration to land that has the specified characteristics when it conducts the boundary location alternatives analysis and applies ORS 197.298.

(6) The adopted findings for [~~UGB~~] **a Metro boundary** adoption or amendment must describe or map all of the alternative areas evaluated in the boundary location alternatives analysis. If the analysis involves more than one parcel or area within a particular priority category in ORS 197.298 for which circumstances are the same, these parcels or areas may be considered and evaluated as a single group.

(7) For purposes of Goal 14 Boundary Location Factor 2, "public facilities and services" means water, sanitary sewer, storm water management, and transportation facilities.

(8) The Goal 14 boundary location determination requires evaluation and comparison of the relative costs, advantages and disadvantages of alternative [~~UGB~~] **Metro Boundary** expansion areas with respect to the provision of public facilities and services needed to urbanize alternative boundary locations. This evaluation and comparison must be conducted in coordination with service providers, including the Oregon Department of Transportation with regard to impacts on the state transportation system. "Coordination" includes timely notice to service providers and the consideration of evaluation methodologies recommended by service providers. The evaluation and comparison must include:

(a) The impacts to existing water, sanitary sewer, storm water and transportation facilities that serve nearby areas already inside the [~~UGB~~] **Metro Boundary**;

(b) The capacity of existing public facilities and services to serve areas already inside the UGB as well as areas proposed for addition to the [~~UGB~~] **Metro Boundary**; and

(c) The need for new transportation facilities, such as highways and other roadways, interchanges, arterials and collectors, additional travel lanes, other major improvements on existing roadways and, for urban areas of 25,000 or more, the provision of public transit service.

660-024-0065
Establishment of Study Area to Evaluate Land for Inclusion in the UGB

Local governments outside of Metro shall comply with this rule and OAR 660-024-0067 when determining which lands to include within the urban growth boundary in response to a deficit of land to meet long term needs.

(1) When evaluating lands for inclusion within the urban growth boundary, the local government shall establish a study area that includes all land within:

(a) For cities under 10,000 – a distance that is at least *X* miles in all directions from the acknowledged UGB.

(b) For cities over 10,000 – a distance that is at least X^{+} miles in all directions from the acknowledged UGB.

(2) After excluding areas described in section (3) of this rule, the study area must include an amount of land that is at least 200 percent of the combined need deficiency for residential, employment and other land determined under OAR 660-024-0050.

(3) A local government may exclude land from the study area if it determines that:

(a) It is impracticable to provide necessary public facilities or services to the land based on the requirements of section (4) of this rule.

(b) The land is subject to significant development hazards, due to a risk of:

(A) Landslides: a landslide deposit or scarp flank is described and mapped on the Statewide Landslide Information Database for Oregon (SLIDO) Release 3.2 Geodatabase published by the Oregon Department of Geology and Mineral Industries (DOGAMI) December 29, 2014, provided that the deposit or scarp flank in the data source is mapped at a scale of 1:40,000 or finer;

(B) Flooding: the land is within the Special Flood Hazard Area (SFHA) identified on the applicable Flood Insurance Rate Map (FIRM);

(C) Inundation during storm surges: the land is as subject to storm surge inundation and is within in the Special Flood Hazard Area (SFHA) identified on the applicable Flood Insurance Rate Map (FIRM); or

(D) Tsunamis: the land is within a tsunami inundation zone established pursuant to ORS 455.446.

(c) The long-term preservation of significant scenic, natural, cultural or recreational resources requires limiting or prohibiting urban development of the land that contains the following resources:

(A) Habitat that is described and mapped on an [adopted] Oregon Department of Fish and Wildlife (ODFW) Inventory as either:

(i) Big game winter range or a big game migration corridor, or

(ii) Critical habitat for state or federal special status species (threatened, endangered, candidate, or sensitive) such as Conservation Opportunity Areas.

(B) Aquatic areas subject to Statewide Planning Goal 16 that are in Natural or Conservation management units designated in an acknowledged comprehensive plan;

(C) Lands subject to acknowledged comprehensive plan provisions that implement Statewide Planning Goal 17, Coastal Shoreland, Use Requirement 1; or

(D) Lands subject to acknowledged comprehensive plan provisions that implement Statewide Planning Goal 18, Implementation Requirement 2.

(d) The land is owned by the federal government and managed primarily for rural uses.

(4) For purposes of subsection (3)(a), local governments may consider it impracticable to provide necessary public facilities or services to the following lands:

(a) Contiguous areas of at least five acres where 75 percent or more of the land has a slope of 25 percent or greater. Slope shall be measured as the increase in elevation divided by the horizontal distance at maximum ten-foot contour intervals;

(b) Lands above a water service elevation limit established in an acknowledged comprehensive plan policy, an acknowledged public facilities plan, an adopted ordinance, or other written policy adopted by the service provider's governing body;

(c) Lands isolated from existing service networks by intervening physical barriers that would significantly impede and increase the cost of providing public facilities and services to such lands. Physical barriers that would significantly impede and increase the cost of providing public facilities and services include, but are not limited to:

(A) Lands that are separated from the current UGB by major rivers or other water bodies such that servicing the land would require one or more new bridge crossings to serve planned urban development;

(B) Topographic features such as canyons, ravines or ridges with slopes exceeding 40 percent;

(C) Freeways, rail lines, or other restricted access corridors that would require one or more new grade separated crossings to serve planned urban development; and

(D) Lands subject to existing measures to protect significant scenic, natural, cultural or recreational resources that:

(i) Are set forth in an acknowledged comprehensive plan, implementing regulations, or both; and,

(ii) Prohibit or substantially impede the placement or construction of necessary public facilities and services;

(d) The land is within the corporate limits or the acknowledged UGB of another city.

OAR 660-024-0067
Evaluation of Land in the Study Area for Inclusion in the UGB; Priorities

(1) When considering a UGB amendment, a local government outside of Metro must decide which land to add to the UGB by evaluating all land in the study area determined under OAR 660-024-0065 using criteria in section (8) of this rule, as follows:

(a) Beginning with the highest priority of land available, the local government must determine which land in that priority is suitable to accommodate the need deficiency determined under OAR 660-024-0050.

(b) If the amount of suitable land in the first priority category is not adequate to satisfy the identified need deficiency, a local government must determine which land in the next priority is suitable to accommodate the remaining need and proceed in this manner until all the land need is accommodated.

(c) If the amount of suitable land in a particular priority category exceeds the amount necessary to satisfy the need deficiency, a local government must choose which land in that priority to include in the UGB by applying the criteria in section (9) of this rule.

(2) First Priority – Urban reserve, exception land, and nonresource land: The local government shall evaluate land in the study area that meets the description in subsection (a) - (c) of this section and select as much of the land as necessary to satisfy the need for land using criteria in section (8) of this rule. Each of the areas described in in subsection (a) - (c) of this section are of equal priority:

(a) Land designated as an urban reserve under OAR chapter 660, division 21, in an acknowledged comprehensive plan;

(b) Land that is subject to an acknowledged exception under ORS 197.732; and

(c) Land that is nonresource land.

(3) Second Priority – Marginal Land: If the amount of land appropriate for selection under section (2) is not sufficient to satisfy the need for land, the local government shall evaluate the land within the study area that is designated as marginal land under ORS 197.247 (1991 Edition) in the acknowledged comprehensive plan and select as much of the land as necessary to satisfy the need for land using criteria in section (8) of this rule.

(4) Third Priority – Farm or Forest land that is not predominantly high value farm land: If the amount of land appropriate for selection under section (3) is not sufficient to satisfy the amount of land needed, the local government shall evaluate land within the study area that is designated for agriculture or forest uses in the acknowledged comprehensive plan that is not predominantly high-value farmland, as defined in ORS 195.300, or that does not consist predominantly of prime or unique soils, as determined by the United States Department of Agriculture Natural Resources Conservation Service, and select as much of that land as necessary to satisfy the need for land:

(a) Using criteria in section (8) of this rule; and

(b) Using the predominant capability classification system or the predominant cubic site class, as appropriate for the acknowledged comprehensive plan designation, to select lower capability or cubic site class lands first.

(5) Fourth Priority – Agricultural land that is predominantly high value farmland: If the amount of land appropriate for selection under section (4) is not sufficient to satisfy the need for land, the local government shall evaluate land within the study area that is designated as agricultural land in an acknowledged comprehensive plan and is predominantly high value farmland and select as much of that land as necessary to satisfy the need for land using criteria in section (8) of this rule. A local government may not select land that is predominantly made up of prime or unique farm soils, as defined by the United States Department of Agriculture Natural Resources Conservation Service, unless there is an insufficient amount of other land to satisfy its land need.

(6) Notwithstanding section (5) of this rule, land that would otherwise be excluded from an urban growth boundary may be included if:

(a) The land contains a small amount of resource land that is not important to the commercial agricultural enterprise in the area and the land must be included to connect a nearby and significantly larger area of land of higher priority for inclusion within the urban growth boundary; or

(b) The land contains a small amount of resource land that is not predominantly high value farmland or predominantly made up of prime or unique farm soils and the land is completely surrounded by land of higher priority for inclusion into the urban growth boundary.

(7) For purposes of sections (4) and (5) of this rule, when evaluating the agricultural or forest capability of land within a study area, "land" means [*definition under development*].

(8) For purposes of this rule, "land suitable to accommodate the need deficiency determined under OAR 660-024-0050 means buildable land that [*to be defined*]

(9) If the amount of suitable land in a particular priority category under sections (2)-(5) exceeds the amount necessary to satisfy the need deficiency, a local government must choose which land in that priority to include in the UGB by applying the location factors of Goal 14 and applicable criteria in the acknowledged comprehensive plan and land use regulations. The local government may not apply local plan criteria that contradict the requirements of the Boundary Location Factors of Goal 14. The Goal 14 Boundary Location Factors are not independent criteria; when the factors are applied to compare alternative boundary locations and to determine the UGB location, a local government must show that it considered and balanced all the factors.

(10) For purposes of this rule, the term "public facilities and services" in Goal 14, Boundary Location Factor 2 means water, sanitary sewer, and transportation facilities. In applying Goal 14, Boundary Location Factor 2, to evaluate alternative locations, the local government must compare relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services needed to urbanize alternative boundary locations. The local government must conduct this evaluation and comparison in coordination with service providers, including the Oregon Department of Transportation with regard to impacts on the state transportation system. "Coordination" includes timely notice to service providers and the consideration of evaluation methodologies recommended by service providers. The evaluation and comparison must include:

(a) The impacts to existing water, sanitary sewer, and transportation facilities that serve nearby areas already inside the UGB;

(b) The capacity of existing public facilities and services to serve areas already inside the UGB as well as areas proposed for addition to the UGB; and

(c) The need for new transportation facilities, such as highways and other roadways, interchanges, arterials and collectors, additional travel lanes, other major improvements on existing roadways and, for urban areas of 25,000 or more, the provision of public transit service.

660-024-0070
UGB Adjustments

(1) A local government may adjust the UGB at any time to better achieve the purposes of Goal 14 and this division. Such adjustment may occur by adding or removing land from the UGB, or by exchanging land inside the UGB for land outside the UGB. The requirements of section (2) of this rule apply when removing land from the UGB. The requirements of Goal 14, this division, and **applicable provisions of either** ORS 197.298 **or ORS 197A.320** apply when land is added to the UGB, including land added in exchange for land removed**, except as provided in applicable provisions of OAR chapter 660, division 38**. The requirements of ORS 197.296 may also apply when land is added to a UGB, as specified in that statute. If a local government exchanges land inside the UGB for land outside the UGB, the applicable local government must adopt appropriate rural zoning designations for the land removed from the UGB before the local government applies **applicable provisions of either** ORS 197.298 **or ORS 197A.320** and other UGB location requirements necessary for adding land to the UGB.

(2) **Except as provided in OAR chapter 660, division 38,** a local government may remove land from a UGB following the procedures and requirements of ORS 197.764. Alternatively, a local

government may remove land from the UGB following the procedures and requirements of 197.610 to 197.650, provided it determines:

(a) The removal of land would not violate applicable statewide planning goals;

(b) The UGB would provide a 20-year supply of land for estimated needs after the land is removed, taking into consideration land added to the UGB at the same time;

(c) Public facilities agreements adopted under ORS 195.020 do not provide for urban services on the subject land unless the public facilities provider agrees to removal of the land from the UGB;

(d) Removal of the land does not preclude the efficient provision of urban services to any other buildable land that remains inside the UGB; and

(e) The land removed from the UGB is planned and zoned for rural use consistent with all applicable laws.

(3) Notwithstanding sections (1) and (2) of this rule, a local government considering an exchange of land may rely on its acknowledged population forecast**, consistent with OAR chapter 660, division 32,** and land needs analysis, rather than adopt a new forecast and need analysis, provided:

(a) The amount of buildable land added to the UGB to meet a specific type of residential need is substantially equivalent to the amount of buildable land removed, or the amount of suitable and developed employment land added to the UGB to meet a specific type of employment need is substantially equivalent to the amount of suitable and developed employment land removed, and

(b) The local government applies the same comprehensive plan designations and, if applicable, the same urban zoning to the land added to the UGB such that the land added is designated for the same uses and at the same housing or employment density as the land removed from the UGB.

Proposed Amendments to Goal 14 (OAR 660-015-0000(14))

(date)

Oregon's Statewide Planning Goals & Guidelines
GOAL 14: URBANIZATION

OAR 660-015-0000(14)

To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities.

Urban Growth Boundaries

Urban growth boundaries shall be established and maintained by cities, counties and regional governments to provide land for urban development needs and to identify and separate urban and urbanizable land from rural land. Establishment and change of urban growth boundaries shall be a cooperative process among cities, counties and, where applicable, regional governments.

An urban growth boundary and amendments to the boundary shall be adopted by all cities within the boundary and by the county or counties within which the boundary is located, consistent with intergovernmental agreements, except for the Metro regional urban growth boundary established pursuant to ORS chapter 268, which shall be adopted or amended by the Metropolitan Service District.

Land Need

Establishment and change of urban growth boundaries shall be based on the following:

(1) Demonstrated need to accommodate long range urban population, consistent with a 20-year population forecast **issued by the Portland State University Population Research Center and** coordinated with affected local governments, **or for cities applying the simplified process under ORS 197A, a 14-year forecast**; and

(2) Demonstrated need for housing, employment opportunities, livability or uses such as public facilities, streets and roads, schools, parks or open space, or any combination of the need categories in this subsection (2). In determining need, local government may specify characteristics, such as parcel size, topography or proximity, necessary for land to be suitable for an identified need. Prior to expanding an urban growth boundary, local governments shall demonstrate that needs cannot reasonably be accommodated on land already inside the urban growth boundary.

Boundary Location

The location of the urban growth boundary and changes to the boundary shall be determined by evaluating alternative boundary locations consistent with **ORS 197A.320 or, for Metro,** ORS 197.298**,** and with consideration of the following factors:

(1) Efficient accommodation of identified land needs;

2) Orderly and economic provision of public facilities and services;

(3) Comparative environmental, energy, economic and social consequences; and

(4) Compatibility of the proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB.

Urbanizable Land
Land within urban growth boundaries shall be considered available for urban development consistent with plans for the provision of urban facilities and services. Comprehensive plans and implementing measures shall manage the use and division of urbanizable land to maintain its potential for planned urban development until appropriate public facilities and services are available or planned.

Unincorporated Communities
In unincorporated communities outside urban growth boundaries counties may approve uses, public facilities and services more intensive than allowed on rural lands by Goal 11 and 14, either by exception to those goals, or as provided by commission rules which ensure such uses do not adversely affect agricultural and forest operations and interfere with the efficient functioning of urban growth boundaries.

Single-Family Dwellings in Exception Areas
Notwithstanding the other provisions of this goal, the commission may by rule provide that this goal does not prohibit the development and use of one single-family dwelling on a lot or parcel that:
(a) Was lawfully created;
(b) Lies outside any acknowledged urban growth boundary or unincorporated community boundary;
(c) Is within an area for which an exception to Statewide Planning Goal 3 or 4 has been acknowledged; and
(d) Is planned and zoned primarily for residential use.

Rural Industrial Development
Notwithstanding other provisions of this goal restricting urban uses on rural land, a county may authorize industrial development, and accessory uses subordinate to the industrial development, in buildings of any size and type, on certain lands outside urban growth boundaries specified in ORS 197.713 and 197.714, consistent with the requirements of those statutes and any applicable administrative rules adopted by the Commission.

GUIDELINES
A. PLANNING

1. Plans should designate sufficient amounts of urbanizable land to accommodate the need for further urban expansion, taking into account (1) the growth policy of the area;(2) the needs of the forecast population; (3) the carrying capacity of the planning area; and (4) open space and recreational needs.
2. The size of the parcels of urbanizable land that are converted to urban land should be of adequate dimension so as to maximize the utility of the land resource and enable the logical and efficient extension of services to such parcels.
3. Plans providing for the transition from rural to urban land use should take into consideration as to a major determinant the carrying capacity of the air, land and water resources of the planning area. The land conservation and development actions provided for by such plans should not exceed the carrying capacity of such resources.
4. Comprehensive plans and implementing measures for land inside urban growth boundaries should encourage the efficient use of land and the development of livable communities.

B. IMPLEMENTATION
1. The type, location and phasing of public facilities and services are factors which should be utilized to direct urban expansion.
2. The type, design, phasing and location of major public transportation facilities (i.e., all modes: air, marine, rail, mass transit, highways, bicycle and pedestrian) and improvements thereto are factors which should be utilized to support urban expansion into urbanizable areas and restrict it from rural areas.
3. Financial incentives should be provided to assist in maintaining the use and character of lands adjacent to urbanizable areas.
4. Local land use controls and ordinances should be mutually supporting, adopted and enforced to integrate the type, timing and location of public facilities and services in a manner to accommodate increased public demands as urbanizable lands become more urbanized.
5. Additional methods and devices for guiding urban land use should include but not be limited to the following: (1) tax incentives and disincentives; (2) multiple use and joint development practices; (3) fee and less-than-fee acquisition techniques; and (4) capital improvement programming.
6. Plans should provide for a detailed management program to assign respective implementation roles and responsibilities to those governmental bodies operating in the planning area and having interests in carrying out the goal.

Chapter 197A —

Comprehensive Land Use Planning II

2013 EDITION

COMPREHENSIVE LAND USE PLANNING II

MISCELLANEOUS MATTERS

197A.300 Definitions for ORS 197A.300 to 197A.325

197A.302 Purposes; rules

197A.305 Amendment of urban growth boundaries outside Metro; rules

197A.310 Cities with population of less than 10,000; rules

197A.312 Cities with population of 10,000 or more; rules

197A.315 Expansion study areas; notice; urban services agreements

197A.320 Priority of land to be included within urban growth boundaries outside Metro; rules

197A.325 Review of final decision of city; rules

Note: Definitions in 197.015 apply to ORS chapter 197A.

197A.300 Definitions for ORS 197A.300 to 197A.325. As used in ORS 197A.300 to 197A.325:

(1) "Buildable lands" means land in urban or urbanizable areas that are suitable for urban uses.

(2) "Serviceable" means, with respect to land, that:

(a) Adequate sewer, water and transportation capacity for planned urban development is available or can be either provided or made subject to committed financing; or

(b) Committed financing can be in place to provide adequate sewer, water and transportation capacity for planned urban development. [2013 c.575 §1]

Note: 197A.300 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.302 Purposes; rules. The purpose of ORS 197A.300 to 197A.325 is to direct the Land Conservation and Development Commission to develop and adopt simplified methods for a city that is outside Metro to evaluate or amend the urban growth boundary of the city. The commission should design the methods to:

(1) Become, as a result of reduced costs, complexity and time, the methods that are used by most cities with growing populations to manage the urban growth boundaries of the cities;

(2) Encourage, to the extent practicable given market conditions, the development of urban areas in which individuals desire to live and work and that are increasingly efficient in terms of land uses and in terms of public facilities and services;

(3) Encourage the conservation of important farm and forest lands, particularly lands that are needed to sustain agricultural and forest products industries;

(4) Encourage cities to increase the development capacity within the urban growth boundaries of the cities;

(5) Encourage the provision of an adequate supply of serviceable land that is planned for needed urban residential and industrial development; and

(6) Assist residents in understanding the major local government decisions that are likely to determine the form of a city's growth. [2013 c.575 §2]

Note: 197A.302 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.305 Amendment of urban growth boundaries outside Metro; rules. (1) In addition to and not in lieu of the method prescribed in ORS 197.295 to 197.314 and the statewide land use planning goals, the Land Conservation and Development Commission shall adopt by rule methods by which a city that is outside Metro may evaluate or amend the urban growth boundary of the city.

(2) A city outside Metro may use the methods adopted pursuant to:

(a) ORS 197A.310 if the city has a population of less than 10,000.

(b) ORS 197A.312 if the city has a population of 10,000 or more.

(3) A city that elects to include land within the urban growth boundary of the city under a method established pursuant to ORS 197A.310 or 197A.312:

(a) May use the method again when:

(A) The population of the city has grown by at least 50 percent of the amount of growth forecast to occur in conjunction with the previous use of the method by the city; or

(B) At least one-half of the lands identified as buildable lands during the previous use of the method by the city have been developed.

(b) Shall evaluate whether the city needs to include within the urban growth boundary additional land for residential or employment uses before the population of the city has grown by 100 percent of the population growth forecast to occur in conjunction with the previous use of the method by the city.

(4) A city that elects to use a method established pursuant to ORS 197A.310 or 197A.312 shall notify the Department of Land Conservation and Development of the election in the manner required by ORS 197.610 for notice of a post-acknowledgment plan amendment. The city may revoke the election until the city makes a final decision whether to amend the urban growth boundary of the city. A city that has initiated, but not completed, an amendment of its urban growth boundary before January 1, 2014, may withdraw the proposed amendment and use a method established pursuant to ORS 197A.310 or 197A.312 by filing notice of the election with the department in the manner required by ORS 197.610 and 197.615 for notice of a post-acknowledgment plan amendment.

(5) Beginning on or before January 1, 2023, the commission shall:

(a) Evaluate, every five years, the impact of the implementation of ORS 197A.310 (2) and 197A.312 (2) on the population per square mile, livability in the area, the provision and cost of urban facilities and services, the rate of conversion of agriculture and forest lands and other considerations;

(b) Consider changes to the statewide land use planning goals or rules to address adverse outcomes; and

(c) Make recommendations to the Legislative Assembly, as necessary, for statutory changes. [2013 c.575 §3]

Note: 197A.305 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.310 Cities with population of less than 10,000; rules. (1) In addition to and not in lieu of the method prescribed in ORS 197.295 to 197.314 and the statewide land use planning goals, the Land Conservation and Development Commission shall adopt a method by which a city outside Metro that has a population of less than 10,000 may evaluate or amend its urban growth boundary.

(2) The commission shall design the method so that:

(a) A city using the method:

(A) Will have within its boundaries sufficient buildable lands and other development capacity, including land and capacity for needed housing and employment opportunities, to meet the growth in population and employment forecast to occur over a 14-year period.

(B) Will not become less efficient in its use of land as a result of a change to the urban growth boundary.

(b) The urban population per square mile will continue, subject to market conditions, to increase over time on a statewide basis and in major regions of the state, including that portion of the Willamette Valley outside of Metro.

(c) The rate of conversion of agricultural and forest lands to urban uses does not increase over time in any major region of the state.

(3) Under the method adopted by the commission:

(a) A city's determination of the amount of buildable lands needed for housing, employment and other urban uses must be based on the population and employment growth forecast to occur over a 14-year period.

(b) A city's determination of the supply and development capacity of lands within its urban growth boundary must be based on:

(A) A simple inventory of vacant and partially vacant buildable lands within the urban growth boundary;

(B) The comprehensive plan designation and the zoning of the portion of the buildable lands that is urban; and

(C) Simple factors established by the commission for forecasting:

(i) The development and redevelopment capacity of urbanizable lands within the urban growth boundary; and

(ii) The redevelopment capacity of developed urban lands within the urban growth boundary.

(c) A city's determination of the supply and development capacity of lands the city proposes to include within the urban growth boundary must be based on:

(A) A simple inventory of vacant and partially vacant lands; and

(B) Simple factors established by the commission for forecasting the development and redevelopment capacity of the lands.

(d) A city shall demonstrate that lands included within the urban growth boundary:

(A) Include sufficient serviceable land for at least a seven-year period.

(B) Can all be serviceable over a 14-year period.

(e) Lands included within the urban growth boundary:

(A) Must be planned and zoned for categories of land uses in amounts that are roughly proportional to the land need determined for each category of use;

(B) Must be planned and zoned for an intensity of use that is generally consistent with the estimates that were used to determine the amount of land needed;

(C) Must be planned and zoned to meet the requirements for needed housing, and those requirements must be specified by rule of the commission in a manner that is as objective as practicable; and

(D) May be either:

(i) Planned and zoned, or otherwise conditioned, to avoid significantly affecting a state highway, a state highway interchange or a freight route designated in the Oregon Highway Plan; or

(ii) Allowed to significantly affect a state highway, a state highway interchange or a freight route designated in the Oregon Highway Plan subject to mitigation, consistent with rules of the commission, if the lands are planned and zoned for compact urban development or industrial uses.

(4) For purposes of subsection (3)(a) of this section, population growth must be forecast as provided in ORS 195.033. Employment growth must be forecast based on the population growth forecast for the city or the employment growth forecast issued by the Employment Department for the county or region. The commission shall establish factors, by rule, for converting the forecasted population and employment growth into forecasts of land need for housing, employment and other categories of uses. The factors must:

(a) Be based on an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state;

(b) Reflect consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state;

(c) Be designed to encourage an increase in the land use efficiency of a city, subject to market conditions; and

(d) Provide a range of policy choices for a city about the form of its future growth.

(5) For purposes of subsection (3)(b) of this section, the commission shall establish factors for supply and development capacity that are:

(a) Based on an empirical evaluation of the population and employment growth that has occurred on similarly situated lands through development and redevelopment;

(b) Based on consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state;

(c) Designed to encourage an increase in the land use efficiency of the city, subject to market conditions; and

(d) Designed to provide a range of policy choices for a city about the form of its future growth.

(6) For purposes of subsection (3)(c) of this section, the commission shall establish factors that are:

(a) Based on an empirical evaluation of the population and employment growth that has occurred on similarly situated lands through development and redevelopment;

(b) Based on consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in each major region of the state;

(c) Designed to encourage an increase in the land use efficiency of the city, subject to market conditions; and

(d) Designed to provide a range of policy choices for a city about the form of its future growth.

(7) For lands that are included within an urban growth boundary pursuant to this section and not made serviceable within 20 years after the date of their inclusion, the commission may provide by rule that:

(a) The lands must be removed from within the urban growth boundary the next time the city evaluates the urban growth boundary; or

(b) The planned development capacity of the lands must be reduced if there are significant increases in the cost of making the lands serviceable.

(8) When lands included within the urban growth boundary pursuant to this section are planned and zoned for industrial or residential uses, the lands must remain planned and zoned for the use unless a rule of the commission allows a change in planning and zoning based on a significant change in circumstance. [2013 c.575 §4; 2013 c.575 §9]

Note: 197A.310 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.312 Cities with population of 10,000 or more; rules.

(1) In addition to and not in lieu of the method prescribed in ORS 197.295 to 197.314 and the statewide land use planning goals, the Land Conservation and Development Commission shall adopt a method by which a city outside Metro that has a population of 10,000 or more may evaluate or amend its urban growth boundary.

(2) The commission shall design the method so that:

(a) A city using the method:

(A) Will have within its boundaries sufficient buildable lands and other development capacity, including land and capacity for needed housing and employment opportunities, to meet the growth in population and employment forecast to occur over a 14-year period.

(B) Will not become less efficient in its use of land as a result of a change to the urban growth boundary.

(b) The urban population per square mile will continue to increase over time on a statewide basis and in major regions of the state, including that portion of the Willamette Valley outside of Metro.

(c) The rate of conversion of agricultural and forest lands to urban uses does not increase over time in any major region of the state.

(3) Under the method adopted by the commission:

(a) A city's determination of the amount of buildable lands needed for housing, employment and other urban uses must be based on the population and employment growth forecast to occur over a 14-year period.

(b) A city's determination of the supply and development capacity of lands within its urban growth boundary must be based on:

(A) An inventory of vacant and partially vacant buildable lands within the urban growth boundary;

(B) The comprehensive plan designation and the zoning of the portion of the buildable lands that is urban; and

(C) Factors established by the commission for forecasting:

(i) The development and redevelopment capacity of urbanizable lands within the urban growth boundary; and

(ii) The redevelopment capacity of developed urban lands within the urban growth boundary.

(c) A city's determination of the supply and development capacity of lands the city proposes to include within the urban growth boundary must be based on:

(A) An inventory of vacant and partially vacant lands; and

(B) Factors established by the commission for forecasting the development and redevelopment capacity of the lands.

[*(c)*]**(d)** A city shall consider a range or combination of measures identified by rule of the commission to accommodate future need for land within the urban growth boundary and implement at least one measure or satisfy an alternate performance standard established by the commission. The commission shall design the alternate performance standard so that the standard is satisfied when the city:

(A) Has a development code that contains specified provisions designed to encourage the development of needed housing; and

(B) Demonstrates that, during the preceding planning period, the city:

(i) If located in the Willamette Valley, exceeded the median rate of redevelopment and infill for cities with a population of 10,000 or more in the Willamette Valley that are outside of the boundaries of Metro by an amount set by commission rule; and

(ii) If located outside of the Willamette Valley, exceeded the median rate of redevelopment and infill for cities with a population of 10,000 or more that are outside the Willamette Valley by an amount set by commission rule.

[*(d)*]**(e)** A city shall demonstrate that lands included within the urban growth boundary:

(A) Include sufficient serviceable land for at least a seven-year period.

(B) Can all be serviceable over a 14-year period.

(e) Lands included within the urban growth boundary:

(A) Must be planned and zoned for categories of land uses in amounts that are roughly proportional to the land need determined for each category of use;

(B) Must be planned and zoned for an intensity of use that is generally consistent with the estimates that were used to determine the amount of land needed;

(C) Must be planned and zoned to meet the requirements for needed housing, and those requirements must be specified by rule of the commission in a manner that is as objective as practicable; and

(D) May be either:

(i) Planned and zoned, or otherwise conditioned, to avoid significantly affecting a state highway, a state highway interchange or a freight route designated in the Oregon Highway Plan; or

(ii) Allowed to significantly affect a state highway, a state highway interchange or a freight route designated in the Oregon Highway Plan subject to mitigation, consistent with rules of the commission, if the lands are planned and zoned for compact urban development or industrial uses.

(4) For purposes of subsection (3)(a) of this section, population growth must be forecast as provided in ORS 195.033. Employment growth must be forecast based on the population growth forecast for the city or the employment growth forecast issued by the Employment Department for the county or region. The commission shall establish factors, by rule, for converting the forecasted population and employment growth into forecasts of land need for housing, employment and other categories of uses. The factors must:

(a) Be based on an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state;

(b) Reflect consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state;

(c) Be designed to encourage an increase in the land use efficiency of a city, subject to market conditions; and

(d) Provide a range of policy choices for a city about the form of its future growth.

(5) For purposes of subsection (3)(b) of this section, the commission shall establish factors for supply and development capacity that are:

(a) Based on an empirical evaluation of the population and employment growth that has occurred on similarly situated lands through development and redevelopment;

(b) Based on consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state;

(c) Designed to encourage an increase in the land use efficiency of the city, subject to market conditions; and

(d) Designed to provide a range of policy choices for a city about the form of its future growth.

(6) For purposes of subsection (3)(c) of this section, the commission shall establish factors that are:

(a) Based on an empirical evaluation of the population and employment growth that has occurred on similarly situated lands through development and redevelopment;

(b) Based on consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in each major region of the state;

(c) Designed to encourage an increase in the land use efficiency of the city, subject to market conditions; and

(d) Designed to provide a range of policy choices for a city about the form of its future growth.

(7) For lands that are included within an urban growth boundary pursuant to this section and not made serviceable within 20 years after the date of their inclusion, the commission may provide by rule that:

(a) The lands must be removed from within the urban growth boundary the next time the city evaluates the urban growth boundary; or

(b) The planned development capacity of the lands must be reduced if there are significant increases in the cost of making the lands serviceable.

(8) When lands included within the urban growth boundary pursuant to this section are planned and zoned for industrial or residential uses, the lands must remain planned and zoned for the use unless a rule of the commission allows a change in planning and zoning based on a significant change in circumstance. [2013 c.575 §5; 2013 c.575 §10]

Note: 197A.312 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.315 Expansion study areas; notice; urban services agreements. (1) As used in this section, "district" means:

(a) A domestic water supply district organized under ORS chapter 264.

(b) A parks and recreation district organized under ORS chapter 266.

(c) A sanitary district organized under ORS 450.005 to 450.245.

(d) A rural fire protection district organized under ORS chapter 478.

(2) When a city evaluates or amends the urban growth boundary of the city under ORS 197A.312, the city shall notify:

(a) Each district that has territory within the study area established under ORS 197A.320.

(b) Each county that has land use jurisdiction over any portion of the study area.

(3) The notification must:

(a) Include a map showing the study area; and

(b) State that, in order to execute or amend an urban services agreement concerning the study area, the district shall respond to the notice within 60 days of the date the notice is mailed if the district enters into or amends an urban services agreement concerning the study area.

(4) An urban services agreement executed under this section must satisfy the requirements of ORS 195.065 (1)(a) to (f). When a city and a district execute an urban services agreement pursuant to this section, the city and the district are not required to participate in the negotiation of an urban service agreement under ORS 195.065 to 195.085.

(5) Before executing the urban service agreement, the city and the district shall consult with community planning organizations that are recognized by the governing body of the city and whose boundaries include territory in the study area that may be affected by the urban service agreement.

(6) If the special district chooses not to negotiate an urban service agreement or does not respond to the notice within 60 days, the city may withdraw from the service territory of the district any portion of the study area that is included within the urban growth boundary of the city and annexed to the city.

(7) If the district responds in writing to the notice within 60 days and requests to execute an urban service agreement for the study area with the city, the city and the district shall meet to develop the agreement within 60 days after the district responds.

(8) If the city and district are unable to develop the agreement within 180 days after the date of the first meeting, the city or the district may require mediation. If mediation is required, the city and the district shall each designate an individual to work with the city and the district to develop an agreement. The city and the district are each responsible for the costs of the mediator it selects.

(9) If the city and the district are unable to develop the agreement after an additional 180 days, the city or the district may require arbitration. The mediators selected under subsection (8) of this section shall jointly select a third individual, and the three individuals shall constitute an arbitration panel to develop the urban services agreement. If the mediators are unable to agree on the third individual, the Director of the Department of Land Conservation and Development shall select an individual from a list of qualified arbitrators provided by the Land Conservation and Development Commission. The city and the district shall bear the cost of the third individual equally. The arbitration panel:

(a) Shall consider the provisions of ORS 222.460, 222.465, 222.510 to 222.570, 222.575 and 222.580; and

(b) May not:

(A) Require the city or the district to pay the other party as part of the urban services agreement unless:

(i) The urban services agreement requires a transfer of physical assets, in which case the agreement may require the payment of fair market value for the assets; or

(ii) A party has offered a payment as part of prior negotiations and the arbitrators incorporate all or a portion of the negotiated payment in the agreement;

(B) Prevent a city from including land within the urban growth boundary of the city; or

(C) Prohibit a city from annexing territory that is within the urban growth boundary of the city.

(10) A city may not withdraw territory from the service territory of a district:

(a) Unless the district does not respond to the notice required by subsection (2) of this section; or

(b) Until the city and the district develop an urban services agreement under this section.

(11) Decisions related to the execution of an urban service agreement under this section are not land use decisions subject to the jurisdiction of the Land Use Board of Appeals. [2013 c.575 §6]

Note: 197A.315 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.320 Priority of land to be included within urban growth boundaries outside Metro; rules. (1) Notwithstanding the priority in ORS 197.298 for inclusion of land within an urban growth boundary, a city outside of Metro shall comply with this section when determining which lands to include within the urban growth boundary of the city pursuant to ORS 197.295 to 197.314, 197A.310 or 197A.312.

(2) The Land Conservation and Development Commission shall provide, by rule, that:

(a) When evaluating lands for inclusion within the urban growth boundary, the city shall establish a study area that includes all land that is contiguous to the urban growth boundary and within a distance specified by commission.

(b) The city shall evaluate all land in the study area for inclusion in the urban growth boundary as provided in subsection (4) of this section, except for land excluded from the study area because:

(A) It is impracticable, as provided in subsection (3) of this section, to provide necessary public facilities or services to the land.

(B) The land is subject to significant development hazards, including a risk of land slides, a risk of flooding because the land is within the 100-year floodplain or is subject to inundation during storm surges or tsunamis, and other risks determined by the commission.

(C) The long-term preservation of significant scenic, natural, cultural or recreational resources requires limiting or prohibiting urban development of the land that contains the resources.

(D) The land is owned by the federal government and managed primarily for rural uses.

(c) When evaluating the priority of land for inclusion under paragraph (b) of this subsection:

(A) The city shall evaluate the land within the study area that is designated as an urban reserve under ORS 195.145 in an acknowledged comprehensive plan, land that is subject to an acknowledged exception under ORS 197.732 or land that is nonresource land and select as much of the land as necessary to satisfy the need for land using criteria established by the commission and criteria in an acknowledged comprehensive plan and land use regulations.

(B) If the amount of land appropriate for selection under subparagraph (A) of this paragraph is not sufficient to satisfy the need for land, the city shall evaluate the land within the study area that is designated as marginal land under ORS 197.247 (1991 Edition) in the acknowledged comprehensive plan and select as much of the land as necessary to satisfy the need for land using criteria established by the commission and criteria in an acknowledged comprehensive plan and land use regulations.

(C) If the amount of land appropriate for selection under subparagraphs (A) and (B) of this paragraph is not sufficient to satisfy the amount of land needed, the city shall evaluate land within the study area that is designated for agriculture or forest uses in the acknowledged comprehensive plan that is not predominantly high-value farmland, as defined in ORS 195.300, or does not consist predominantly of prime or unique soils, as determined by the United States Department of Agriculture Natural Resources Conservation Service, and select as much of that land as necessary to satisfy the need for land:

(i) Using criteria established by the commission and criteria in an acknowledged comprehensive plan and land use regulations; and

(ii) Using the predominant capability classification system or the predominant cubic site class, as appropriate for the acknowledged comprehensive plan designation, to select lower capability or cubic site class lands first.

(D) If the amount of land appropriate for selection under subparagraphs (A) to (C) of this paragraph is not sufficient to satisfy the need for land, the city shall evaluate land within the study area that is designated as agricultural land in an acknowledged comprehensive plan and is predominantly high value farmland and select as much of that land as necessary to satisfy the need for land. A local government may not select land that is predominantly made up of prime or unique farm soils, as defined by the United States Department of Agriculture Natural Resources Conservation Service, unless there is an insufficient amount of other land to satisfy its land need.

(3) For purposes of subsection (2)(b)(A) of this section, the commission shall determine impracticability by rule, considering the likely amount of development that could occur on the lands within the planning period, the likely cost of facilities and services, physical, topographical or other impediments to service provision and whether urban development has occurred on similarly situated lands such that it is likely that the lands will be developed at an urban level during the planning period. When impracticability is primarily a result of existing development patterns, the rules of the commission shall require that the lands be included within the study area, but may allow the development capacity forecast for the lands to be specified at a lower

level over the planning period. The rules of the commission must be based on an evaluation of how similarly situated lands have, or have not, developed over time.

(4) For purposes of subsection (2)(b)(C) of this section, the commission by rule shall determine the circumstances in which and the resources to which this exclusion will apply.

(5) Notwithstanding subsection (2)(c)(D) of this section, the rules must allow land that would otherwise be excluded from an urban growth boundary to be included if:

(a) The land contains a small amount of resource land that is not important to the commercial agricultural enterprise in the area and the land must be included to connect a nearby and significantly larger area of land of higher priority for inclusion within the urban growth boundary; or

(b) The land contains a small amount of resource land that is not predominantly high-value farmland or predominantly made up of prime or unique farm soils and the land is completely surrounded by land of higher priority for inclusion into the urban growth boundary.

(6) When the primary purpose for expansion of the urban growth boundary is to accommodate a particular industry use that requires specific site characteristics, or to accommodate a public facility that requires specific site characteristics and the site characteristics may be found in only a small number of locations, the city may limit the study area to land that has, or could be improved to provide, the required site characteristics. Lands included within an urban growth boundary for a particular industrial use, or a particular public facility, must remain planned and zoned for the intended use:

(a) Except as allowed by rule of the commission that is based on a significant change in circumstance or the passage of time; or

(b) Unless the city removes the land from within the urban growth boundary.

(7) Notwithstanding any other provision of this section, the commission may adopt rules that specify circumstances under which a city may exchange land within the urban growth boundary of the city for land that is outside of the urban growth boundary and that is designed to avoid adverse effects of an exchange on agricultural or forest operations in the surrounding area. [2013 c.575 §7]

Note: 197A.320 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.325 Review of final decision of city; rules. (1) Notwithstanding ORS 197.626, when a city evaluates or amends the urban growth boundary of the city pursuant to ORS 197A.310 or 197A.312, the Land Use Board of Appeals has jurisdiction for review of a final decision of the city.

(2) The board shall review the final decision of the city under ORS 197A.300 to 197A.325 as provided in ORS 197.805 to 197.855, except that:

(a) In circumstances in which the Land Conservation and Development Commission has specified by rule a number or a range of numbers that the city may use:

(A) The city is not required to adopt findings to support the use of the number or a number within the range of numbers; and

(B) The board's review of the number may determine only that the city has used a number that is allowed by the rule.

(b) The board shall affirm an interpretation by a local government of its comprehensive plan or land use regulations unless that interpretation is clearly erroneous.

(3) Notwithstanding ORS 197.628 and 197.629, when a city evaluates or amends the urban growth boundary of the city pursuant to ORS 197A.310 or 197A.312, the city is not required to commence or complete periodic review. The commission shall, by rule, specify alternate means to ensure that the comprehensive plan and land use regulations of the city comply with the statewide land use planning goals and are updated over time to reflect changing conditions and needs. [2013 c.575 §8]

Note: 197A.325 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

Date: 25 May 2015
To: Bob Rindy, DLCD
From: Terry Moore
Subject: WHITE PAPER ON MARKET TRENDS [1]

House Bill 2254 requires the LCDC to establish new rules by which cities can determine and justify their needs for urban land, and for Urban Growth Boundary expansions that would provide that land. In establishing those rules, it must consider "significant changes occurring or expected to occur in the markets for urban land uses in … major region[s]of the state." DCLD staff believe this consideration of market changes should be supported by evidence. They commissioned this white paper to provide that evidence.

Conclusions with respect to the LCDC rule-making start on page 20. In summary, I find:

- Many types of changes in urban land markets are already considered by local jurisdictions and the LCDC as part of current UGB amendment procedures.
- In developing simplified amendment procedures. the Rules Advisory Committee (RAC) is considering, at some level, most these market changes.
- Thus, I do not find strong evidence to suggest that the LCDC would need to adjust the suggested rules from the RAC to further consider market changes.

1. Background

Both inside and outside Oregon the most notable feature of the statewide land-use program is the requirement that every city have an Urban Growth Boundary (UGB). The purpose of a UGB is to (1) protect resource lands outside the boundary, and (2) encourage more efficient development patterns inside the boundary.

A fundamental interpretation of the law has been that a UGB must have a supply of buildable land sufficient to accommodate approximately 20 years of development. But cities used differing techniques to forecast growth, development, and buildable land; had different local goals; and had different interpretations of the requirements during the 10 years after the program started, when almost all of the initial UGBs were established.

With UGBs established and almost no new cities being created,[2] UGB procedures and issues for the last 30 years have been exclusively about how to *amend* (expand) UGBs. The legislation that created the Oregon land use program and UGBs in 1973 listed seven principles[3] for establishing and justifying UGBs in less than 100 words. Today there are thousands of pages of court cases, guidebooks, statutes, and administrative rules that try to explain all the details that address

[1] The opinions in this white paper are those of the author and do not necessarily reflect those of the LCDC, DLCD staff, or the members of the UGB Rules Advisory Committee. Thanks to Ali Danko for help with the research

[2] Four in the 40-year history of the program: two were splits from existing UGBs (Keizer and Westfir) and two were in previously rural areas that had increased urbanization (Damascus and La Pine).

[3] Need to accommodate long-range urban population growth; need for housing, employment opportunities, and livability; efficient provision of public facilities and services; efficiency of land uses in and at the fringe of existing urban areas; consideration of environmental, energy, economic and social consequences; retention of agricultural land; and compatibility of the proposed urban uses with nearby agricultural activities.

issues that arose inevitably as the principles were implemented. My generalization of the process has parallels in many other areas of public policy:

- The State adopts statutes with broad statements of purpose and goals, and a little high-level guidance on procedures.
- Cities applying for UGB acknowledgment and DLCD staff reviewing the applications create ad hoc procedures to fill-in the blanks.
- People unhappy with outcomes appeal to the LCDC and, ultimately, the courts. Court decisions sometimes clarify and sometimes confuse the process, but they usually make it bigger and longer. Some boundary reviews take five or 10 years as the process of analysis, findings, review, and adjudication repeats itself.
- Occasionally the LCDC adopts administrative rules to try to consolidate and clarify court decisions into procedures that will avoid or reduce further litigation.[4]

The 2013 legislature enacted HB 2254 (codified at ORS 197A) to create simplified methods for growing cities *not in the Portland UGB*[5] to evaluate and justify additions to their UGBs. The law requires the LCDC to adopt rules to establish these methods before January 1, 2016. LCDC appointed a Rules Advisory Committee (RAC) to assist in development of these rules.

Among many other things, HB 2254 requires the LCDC to give guidance to cities on two aspects of their analysis of need for a UGB expansion: (1) converting forecasted population and employment growth into forecasts of land need for housing, employment, and other categories of uses, and (2) determining the supply and development capacity of lands already within an urban growth boundary (i.e., the Buildable Lands Inventory). In both cases, HB 2254 says that *the LCDC must establish factors by rule that "reflect consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state."* Though there are many references to "market conditions" throughout HB 2254, they all refer to these two issues.

DCLD staff believe this consideration of market changes "expected to occur" should be supported by evidence. It commissioned me (Terry Moore) to provide that evidence in this white paper. The white paper has three sections in addition to this introduction and some appendices:

> **Section 2, Framework.** What are land markets, how do they work, how do they fit in the context of the requirements of HB 2254.
>
> **Section 3, Land Markets: Conditions and Potential Changes.** Trends and expectations for factors relating to land markets (e.g., population and employment growth, demographics, income, public services).

---

[4] Recent changes to the legal process associated with UGBs (1) lowered the court's standards of review, and (2) eliminated requirement for LCDC review—all decisions go to LUBA, with the Court of Appeals required to respond to appeals of LUBA decisions in a timely way.

[5] The Portland region has its own process for amending the regional UGB.

Section 4, Implications. Comments about the implications of the information in Sections 2 and 3 for the two questions posed in HB 2554: (a) implications for converting population forecasts to land consumption (i.e., likely changes in density), and (b) implications for the supply and development capacity of lands already within an urban growth boundary (i.e., the Buildable Lands Inventory).

Appendices. My scope of work specifies a white paper of approximately 10 – 20 pages. I kept it to 25 pages only by summarizing from other research, and by putting detailed information in appendices. My assessment was that it would be useful to look at research at a national level regarding development trends (Appendix A), and also at research done for Oregon communities (Appendices B and C). Appendix D gives some recent information about development markets in Oregon, but I do not find it very useful for the purposes of HB 2254.

2. Framework

2.1 Land markets in general

UGBs define land that state policy requires and local policy will allow to be developed to urban densities. Land is, of course, essential to that development. It is a *factor of production* in any model of economic activity. It is the base on which all real estate products (houses, stores, factories, schools, etc.) are built. It is fundamental to basic theories of urban and regional economics, and to how urban real estate markets find prices to match supply to demand.

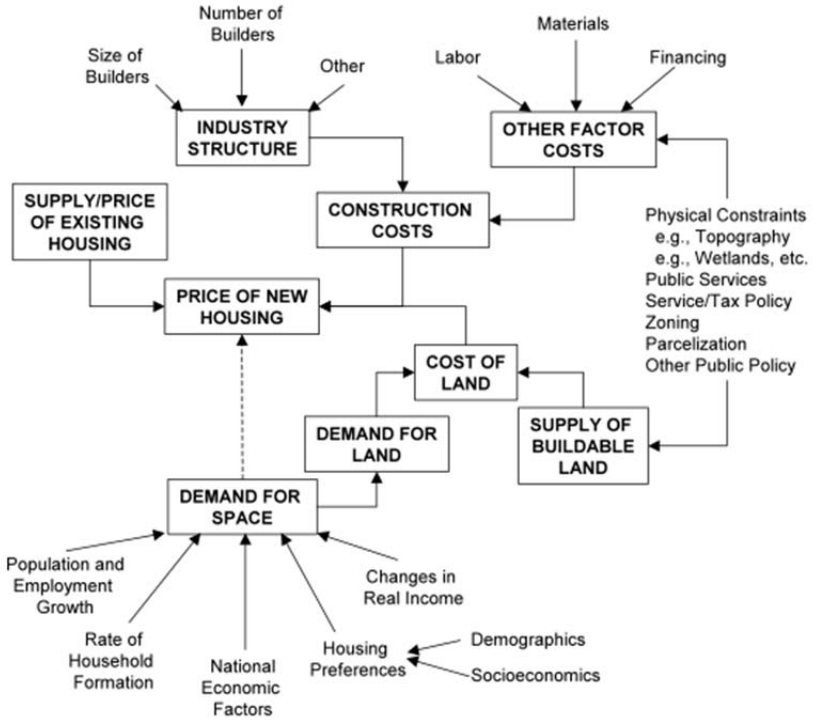
For some people land has intrinsic value. For the purposes of market analysis and this white paper, however, one can think of land as factor necessary for fulfilling broader demands: for residential, commercial, and industrial space; for recreation; for ecosystem services; and more. Economists use the term "bundle of goods" to reflect the idea that the value of land derives from all the goods and services it offers to fulfill those demands. Those demands are affected by many factors. In my prior work I have grouped these factors as "the six Ps" which I illustrate using residential demand:

- **Population.** Even if none of the subsequent factors changed, housing demand will change, all else being equal, if population (i.e., the *number of households*) changes. Population grows either when people move to a region (in-migration) or through natural increase (births minus deaths). The *demographic characteristics* (e.g., age) of new population affect housing demand.
- **Purchasing power.** Even without population growth, if an existing population were to suddenly get richer, it would spend more on housing—housing demand would increase. The amount that a household can spend on housing is predominantly dependent on household *income* and *wealth*.
- **Preferences.** Households have preferences about: (1) *types of housing* (e.g., single-family detached or apartments), (2) *size of house and lot*, (3) *housing amenities* (e.g., fireplaces or multiple-car garages), and (4) and *locational amenities* (e.g., distance from work, quality of schools, or access to shopping). Housing preferences are linked to demographic characteristics and purchasing power.

- **Prices (and costs) of housing.** Households have money to pay for housing, and preferences about the kind of housing they want to pay for. Prices tell them how much of what they want they can afford to get. If there are reasons to believe, for example, that the real price of residential land or housing construction will be rising, then one would expect housing developers and purchasers to begin to economize on lot size (land) or built space. *Development costs* describe the costs of building a house, including construction costs, land costs, and public services and infrastructure. Costs are strongly related to prices, but are not identical. For example, in a strong market with excess demand, a developer may be able to command a price that is in excess of development costs and a standard rate of return. In addition, certain advances in the technology of building housing or infrastructure may reduce costs. M*ortgage financing* also affects housing choice.
- **Prices of housing substitutes.** One important substitute for housing is *transportation*. For example, historical choices to purchase housing in suburban locations were influenced by the price of travel: if it had been very much higher, fewer households could have afforded to move to suburban locations. *Telecommunications* is a substitute for proximity and is a technology whose prices have dropped substantially in the last three decades.
- **Policy.** Governments affect the housing market through policies and actions that encourage or discourage development of certain types of housing in certain locations.

The relative importance of many of these factors to different households is different. Some like the excitement, diversity, and opportunities of an urban location; others like the quiet and feeling of security of a suburban cul-de-sac. Some may want a big yard; some want no maintenance responsibilities. Children and pets make a difference. Similar tradeoffs apply for own vs. rent; close-in vs. far out; amount of space vs. price; and quality vs. price.

Exhibit 1. Factors affecting the price of housing and residential land



Source: Terry Moore, ECONorthwest

Those are a lot of factors and sub-factors to consider just for residential real estate markets. Exhibit 1 illustrates the point.

To the previous points add these:

- Housing markets have several different product types (combinations of building type, size, density, lot size, and price).
- There are more uses for urban land than housing (office, retail, and industrial development; public facilities; open space).
- Land markets are not the same across regions or cities (by size or location) in Oregon.
- Land markets also have a temporal dimension: what they looked like in the past, look like now, and might look like in the future will be different.

Taken together, these points lead me to this conclusion: describing urban land markets in Oregon for all types of uses, by region, is beyond the scope of a 10-to-20-page white paper. The way I condense the paper is to focus on the two specific requirements of HB 2254 to consider market factors when making rules relating to (1) converting forecasted population and employment growth into forecasts of land need, and (2) determining the supply and development capacity of lands within UGBs.

2.2 Land markets in the context of HB 2254

The previous points are context and support for this one: the RAC, DLCD, and the LCDC have to make a decision about the scope of the HB 2254 requirement that the LCDC consider future market conditions as part of its rule-making. Such consideration could be a multi-year research effort, but it need not be. The fact that DLCD has asked me to write this white paper is evidence that the decision about scope has been made: this white paper, when reviewed and approved, will be the fact basis for "…consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in … major region[s] of the state."

The decision to have a white paper to meet the requirement does not, however, specify its content, length, or format. I had to make decisions about how to balance competing goals: longer, broader, and more detailed might be better for fully addressing the legal requirement and technical issues, but shorter and focused is likely to be more manageable and useful for the LCDC when it gets to rule-making. There is also a choice about whether this white paper is providing just the data for the LCDC to consider, or conclusions about those data. The advantage of the latter is that the white paper, by itself, becomes the DLCD / LCDC documentation that such consideration has occurred in establishing its rules.

Here is another important consideration. People familiar with the Oregon planning process in general and the UGB process in particular are used to thinking of market considerations as things that change over time. If a city does some planning and then updates its plan a few years later, it would be expected to update its market information. But for HB 2254, the LCDC is making a one-time effort related to setting the required rules. The implication is that this white paper has a one-time purpose, and that it can be written not as "data for your information" but as documentation for DLCD / RAC recommendations to the LCDC about how this review of market conditions should influence the LCDC rule-making in 2016.

Thus, this white paper is not a comprehensive description of all factors affecting all types of urban lands in all regions of Oregon. It focuses on information that I believe is most relevant to the LCDC's rule-making. I think the Commission's thinking should go something like this:

> Cities in Oregon have been doing Housing Needs Analyses, Economic Opportunity Analysis, and UGB amendments for decades. The Commission has clarified those processes with rules. State and local government planners have a lot of experience with the factors that go into estimating needs for residential and employment land: they have a lot of data and generally approved techniques and rules of thumb for converting forecasted population and employment growth into land need.
>
> Now the University of Oregon is providing new and detailed information about how land in cities has been developed. That information can help adjust the old methods to make better forecasts of land needs.
>
> The Commission will use all that historical information to support its decisions about how to meet the fundamental requirement of HB 2254: to simplify and, in doing so, to expedite the process by which cities outside the Portland region get UGB amendments approved by the Commission.
>
> But HB 2254 requires the Commission to also consider that the historical relationships that are the basis for some of the specifics in the new rules may change in response to future market conditions. The DLCD commissioned a white paper to address that point.

In other words, current rules, and almost certainly the new ones that the LCDC will adopt per HB 2254, *already require local governments to consider market forces when adopting UGBs.* Thus, I narrow the question for this white paper to this one:

> Is there evidence strongly suggesting that (1) historical trends (nationally, in Oregon, or in regions of the state) relating to the efficiency of land development (i.e., density)[6] will change in particular direction, (2) those changes cannot or are unlikely to be accounted for as Oregon cities make UGB amendments in the future, and (3) the change would be of a type and magnitude that it should affect the rules that the LCDC will adopt relating to (a) converting population and employment forecasts into "land needs" both for small cities (Section 4 below) and large cities (Section 5), and (b) determining the supply and development capacity of lands already within its urban growth boundary (i.e., the Buildable Lands Inventory)?

2.3 Methods for this white paper

In summary, I (1) searched of recent academic and popular literature relating to real estate development and trends, (2) reviewed Oregon studies (many of which I had available; some of which were sent to me at my request) that talk about potential changes in real estate market conditions, (3) assembled some information on recent development activity in Oregon, (4) reviewed recent work by the University of Oregon on historical trends in land absorption in

[6] Section 3.2, following, discusses the HB 2254 definition of "land use efficiency" and its problems.

Oregon, and (5) thought about the implications of that information for the requirements of HB 2254 that this white paper is supposed to address.

Because HB 2254 requires that "a city's determination of the amount of buildable lands needed for housing, employment and other urban uses must be based on the population and employment growth forecast to occur over a 14-year period," I did not go out farther into yet greater speculation about how markets might change in the longer run. Most of the literature on real estate market analysis is short run (two to five years). I looked at that literature and at planning literature that has a longer horizon (five to 20 years).

3. Land Markets: Conditions and Potential Changes

3.1 Introduction

Section 2 makes that points that (1) markets for urban land are composed of factors relating to supply and factors relating to demand, (2) these factors can change over time, and (3) the interaction of these factors results in market-clearing prices and absorption. My discussion of market conditions and potential changes follows that logic:

- Section 3.2. Supply: vacant and buildable land in Oregon UGBs
- Section 3.3. Demand for land: population and employment growth in Oregon
- Section 3.4. Possible changes in urban land markets
- Section 3.5. Recent land absorption in Oregon.

On the one hand, I acknowledge that (1) HB 2254 applies only outside Portland, (2) Portland has roughly half of the state's development, and thus (3) reporting state averages for market conditions will suggest faster and denser development for other parts of the state than is likely. On the other hand, (1) data at the regional level are harder to come by, (2) the amount of work in collecting, evaluating, (3) reporting them is beyond the scope of work for this white paper, and (4) the recent report from the University of Oregon suggests no strong correlation between urban density and region of the state. My compromise is to try to comment occasionally on the implications for different types of regions in the state.

3.2 Supply: vacant and buildable land in Oregon UGBs

The HB 2254 requirements regarding market conditions apply to only two decisions: (1) a demand-side consideration about converting official population and employment forecasts into an estimate of land needs, and (2) a supply-side consideration about the development capacity of lands already within UGBs. This section deals only with the second, supply-side consideration about "development capacity" (section 3.2 and 3.3 deal with demand-side considerations).

The issue for UGBs and HB 2254 is not *total* land in Oregon. The issue is land that is *buildable* and *within UGBs*.[7]

As a first approximation the land supply problems for local UGBs are what state policy intended. By that I mean though Oregon planning law restricts urban land supply within UGBs, it also requires that cities maintain a 20-year supply of buildable land inside UGBs.

Moreover, the current work for DLCD by the University of Oregon provides empirical evidence for the existence of vacant land. Exhibit 2 shows that for a sample of 120 cities in Oregon,[8] 28% of the land that is inside city limits *and* inside UGBs is vacant (unimproved), and most of that land is buildable (in the sense the it does not have "prohibitive constraints").

Exhibit 2: Residential acreage by improvement status by city size, Tier 3 Cities, 2012

		Residential (Class 1XX) Acres						
City Size	**Number of Cities**	**Total**	**Improved**		**Unimproved**		**Unimproved Unprohibitive**	
<1,000	20	2,053	1,272	62%	781	38%	761	37%
1,000-4,999	45	14,551	10,180	70%	4,371	30%	4,232	29%
5,000-9,999	27	21,988	14,956	68%	7,033	32%	6,843	31%
10,000-24,999	17	24,467	16,963	69%	7,504	31%	7,403	30%
25,000-49,999	4	10,037	8,410	84%	1,627	16%	1,592	16%
50,000 or more	7	51,358	38,336	75%	13,022	25%	12,603	25%
All Cities	**120**	**124,455**	**90,116**	**72%**	**34,338**	**28%**	**33,434**	**27%**

Source: From Rebecca Lewis, co-author of *Analysis of Land Use Efficiency in Oregon Cities: A Report to the HB 2254 Rulemaking Committee*. University of Oregon Community Service Center, final draft May 2015.

Note that Exhibit 2 understates, probably substantially, the total amount of vacant and buildable land in UGBs because it does not count some amount of land that is most likely to be vacant: land inside UGBs but *outside* city limits.

Exhibit 3 shows data for the same cities, but organized by region instead of by city size. On average, about 1/3 of the land inside city limits and inside UGBs in cities in every region except Central Oregon is vacant.

[7] I acknowledge that there is a supply of land outside UGBs that is used for residential purposes (in residential exception areas, which includes unincorporated communities; and on farm or forest land, since landowners and developers have found multiple ways to develop houses on resource land). This white paper does not address those markets.

[8] Tier 3 Cities are ones that have populations greater than 1,000, are growing, and have data adequate to support the kind of analysis the U of O is doing.

Exhibit 3: Residential acreage by improvement status by region, Tier 3 Cities, 2012

City Size	Number of Cities	Residential (Class 1XX) Acres: Total	Improved		Unimproved		Unimproved Unprohibitive	
Central Oregon	9	13,178	11,143	85%	2,035	15%	2,027	15%
North Coastal Oregon	12	7,262	4,540	63%	2,723	37%	2,656	37%
Northeast Oregon	12	7,525	4,860	65%	2,665	35%	2,635	35%
South Coastal Oregon	6	5,984	3,676	61%	2,308	39%	2,280	38%
Southeast Oregon	6	3,720	2,358	63%	1,362	37%	1,357	36%
Southern Oregon	17	22,776	16,373	72%	6,403	28%	6,229	27%
Willamette Valley	58	64,009	47,166	74%	16,842	26%	16,250	25%
All Cities	**120**	**124,455**	**90,116**	**72%**	**34,338**	**28%**	**33,434**	**27%**

Source: From Rebecca Lewis, co-author of *Analysis of Land Use Efficiency in Oregon Cities: A Report to the HB 2254 Rulemaking Committee*. University of Oregon Community Service Center, final draft May 2015.

The data suggest that there is no absolute shortage of vacant land in cities. Other research I have done suggests that the number of new residential building permits per year in moderately growing cities average around 1% of the existing housing stock. Recent U of O research demonstrates that new units are built at a higher average density than that of existing stock. That evidence, together with the high percentage of vacant land that is buildable (not prohibitively constrained), suggests that *the amount of potentially buildable land in UGBs is high relative to the annual conversion of vacant (unimproved) land to developed (improved) land.*

But critics of UGBs argue that UGBs do not provide *enough buildable land that is readily available at reasonable prices*. Supporters of UGBs argue that a 20-year supply of *vacant* land should provide enough *buildable, serviced, and marketed* land for at least a few years of demand, and that should be enough market choice to keep prices from rising (or from rising "too much").[9]

Definitions and threshold values of all of the underlined terms in the previous paragraph are at the heart of debates about UGB policy in Oregon. Moreover, data about some of these terms are scarce: without any systematic measurement of availability and price of parcels, it is hard to assess their readiness and reasonableness.

Basic principles of urban economics are (1) for a given level of demand, if land supply is more scarce, the price of land will increase (other things being equal); and (2) as the price of land increases it will make sense for developers to substitute capital for land: i.e., to build more

[9] Neither Oregon-based policy analysis nor the professional literature is definitive about what the proper amount of *buildable, serviced, and marketed* land (a subset of all vacant land that I will call *ready* land) is to allow a land market to function without big increases in price due to land scarcity. Everyone agrees that the supply of ready land should be greater than what is needed for one-year of development: if not, at the end of 9 months there is almost not choice left in the market and land owners can charge higher prices to ration short supply against constant or growing demand. At the low end, I have heard some land economist argue for a 2 – 3 year supply. I think most would agree that a five-year supply of ready land would be adequate to avoid monopsony power. I admit these are my impressions—I can find no literature to cite, and am aware of no studies in Oregon addressing this issue. Finally, even if a five-year supply of *ready* land were the right answer (approximately), no studies have addressed consolidated information about *buildable* land and *ready* land to make estimates of the relationship between the two (i.e., how many years of vacant does a city need to make sure that it has a five-year supply of ready land?), though there are some studies in Oregon (typically of industrial land) that may have the data to address this question.

intensively / densely (unless regulations or public objections prohibit or restrict it). Increasing density is the equivalent of increasing "development capacity;" it also seems to be consistent with the HB 2254 focus on increasing the efficiency of land use.[10]

Or is it? Back to economic principles: government can cause any good to be used "more efficiently" (less input per unit of output) by adopting policies that make it more scarce or its use more expensive. In cases where there are obvious and big external costs (e.g., water pollution), such regulation can improve efficiency in the way economists think about it: the *total* cost of producing a specific output is reduced (or the value of the output is increased for a given amount of cost).

But for economists, using less of something in a production process does not necessarily mean that the production process is more efficient. Efficiency is achieved by having prices right and then letting the market find an efficient (optimal) balance of factor inputs based on those prices. If such regulation provides small benefits but has big costs to development, however, then the cost increase to use an otherwise plentiful resource means, in economic terms, that the overall production function has become less efficient (as other factors get substituted for the now-more-expensive factor) and the use of that resource has become less efficient.

Economic efficiency in a market setting is unlikely to be achieved by setting regulatory limits on the use of certain factors of production. In a market economy, a better role of policy and regulation is usually to identify costs that are significant to society and that are not being counted by businesses in their production (i.e., *external costs* or *externalities*), and to set policies that compel businesses to include those costs. If the regulations are "efficient" they will cause prices of some factors of production to increase to reflect external social costs. Then it is up to businesses to look at these new prices and find an efficient mix of types and amounts of factors for their production functions.

That sounds theoretical because it is. But it has implications for the LCDC's rule-making because it raises the possibility that increased density is not necessarily the proper prescription for getting land use efficiency. There is an extensive literature on both sides of the issue about whether strong regulatory policy in land use increases the cost of housing. In my opinion, it almost certainly does: in attempting to internalize external costs it would be the rare regulation that made the internal costs cheaper.

But the real question—and the harder one to answer—is about whether the increased costs are worth it; about whether the regulation is efficient. That is not a question I risk answering here. I'm only noting that, just as when density gets very low it is easier to see that it is an inefficient

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[10] "Land use efficiency" is a term used frequently in HB 2254. It is not explicitly defined, but the connection to density is clearly implied. Section 4 (2) (b) says the commission shall design its methods so that "the urban population per square mile will continue, subject to market conditions, to increase over time on a statewide basis and in major regions of the state." The empirical work being done by the University of Oregon for DLCD on land use efficiency operationalizes the term as "density."

way to provide urban-level services, there can also be inefficiency when required density is much higher than what market conditions suggest real-estate users want.[11]

As often happens when one parses legislative language, ambiguities emerge. The development capacity of any particular parcel of land will tend to increase as supply is constrained (other things being equal). But if supply is constrained "too much" without "offsetting" benefits (the magnitudes of the italicized terms are uncertain and debated) then prices may rise to the point where development just does not happen on many parcels: the theoretical capacity may have increased, but the practical capacity (at least in the short run) has decreased.

Related to this point are ones about public policies regarding incentives and fees for infrastructure and development. Those incentives and fees affect the cost of buildable land, the cost affects price, and the price affects the intensity of development capacity and the feasibility of development. In other words, the development capacity of *buildable land* may be more sensitive to incentives, fees, and regulations than it is to the total supply of buildable land.

In summary, regarding the supply of vacant and buildable land in UGBs in Oregon:

- There is no absolute shortage of vacant land in Oregon cities, on average.
- The amount of potentially buildable land in UGBs in Oregon cities is high relative to the annual conversion of vacant (unimproved) land to developed (improved) land.
- More difficult to measure is whether UGBs provide enough buildable land that is readily available at reasonable prices. That depends on perceptions and predilections of property owners and developers and on public policy (especially regarding zoning, permitting, and infrastructure provision and pricing). I have assembled no evidence, but I would expect that at least some cities in Oregon have supplies of buildable land that are small relative to a five- or 10-year estimate of market demand.
- For the purposes of this requirement of HB 2254 to consider "any significant changes occurring or expected to occur in the markets for urban land uses," I conclude that there is nothing exceptional *on the supply side* of the market that is not already being considered through current UGB practices or through the simplified practices now being considered by DLCD and the RAC.

3.3 Demand for land: population and employment growth in Oregon

The need for and absorption of urban land result primarily from a demand for built space and public facilities. Both in theory and in planning practice, the demand for built space is assumed

[11] As is common with public policy in general and land-use policy in particular, more analysis can create less certainty rather than more. In *Zoned Out* (2006, RFF Press) professor Jonathan Levine argues, with supporting data, that local government regulation has been inefficient because it has *discouraged* density that the market would otherwise provide. Oregon can point to the Goal 10 and Metro housing rule as a regulation that tried to undo the inefficiency of local regulations that did not permit density. But finding just the right point of regulation is difficult: what if a government requires more density than the market wants to provide? Levine's answer, and that of many urban economists, is that "Use regulation to correct clear price distortions and control obvious externalities, and then let the market produce the development that makes sense given those (correct) prices and (efficient) regulations."

to be well correlated with the growth of population (households needing housing) and employment (as a proxy for economic activity). The correlation, though good, is not inevitable. On the housing side for example, changes in the rate of household formation, household size, and income can all change the demand for new housing even if there were no population growth. On the commercial and industrial side, changes in technology and labor force productivity, or in consumer income, can change the demand for space even without changes in economic output or employment.

Nonetheless, the evidence is that population and employment growth are correlated with urban land absorption, and they are measurable historically and typically the subject of official forecasts. Thus, they are a good place to start a discussion of demand for urban land.

Exhibit 4 shows *historical* **population** growth in Oregon. Different parts of the state have grown at different rates. Exhibit 5 shows the *forecasted* population growth. Key points:

- The Metro region accounted for **44%** of total population in Oregon in 2013, and for **44%** of total population growth in Oregon from 1940-2013. It is forecasted to account for **44%** of total Oregon population in 2035 and for **47%** of total population growth in Oregon from 2015-2035.
- The Valley region accounted for **48%** of the rest of Oregon's population (per HB 2254, the rest of the state does not include the Metro region), and accounted for **52%** of population growth in the rest of Oregon from 1940-2013. It is forecasted to account for **49%** of the rest of Oregon's population in 2035 and for **53%** of total population growth in the rest of Oregon from 2015 to 2035.

Exhibit 4: Historical population for Oregon by region, 1940-2013

						% of Population	Change	% of Change	AAGR		
Region	1940	1960	1980	2000	2013	2013	1940-2013	2013	1940-2013	1980-2013	2000-2013
Metro	451,423	728,088	1,050,418	1,444,219	1,709,394	43.50%	1,257,971	44.29%	1.84%	1.49%	1.31%
Rest of State (Per HB 2254)	638,261	1,040,653	1,582,738	1,977,180	2,220,671	100.00%	1,582,410	100.00%	1.72%	1.03%	0.90%
Valley	239,781	440,811	738,159	936,387	1,062,701	47.85%	822,920	52.00%	2.06%	1.11%	0.98%
Northwest	72,480	93,349	124,563	147,931	158,255	7.13%	85,775	5.42%	1.08%	0.73%	0.52%
Southwest	115,009	241,302	366,098	441,310	483,412	21.77%	368,403	23.28%	1.99%	0.85%	0.70%
Central	26,206	39,660	86,832	153,558	207,914	9.36%	181,708	11.48%	2.88%	2.68%	2.36%
East	184,785	225,531	267,086	297,994	308,389	13.89%	123,604	7.81%	0.70%	0.44%	0.26%
Oregon	1,089,684	1,768,741	2,633,156	3,421,399	3,930,065		2,840,381		1.77%	1.22%	1.07%

Source: Portland State University Population Research Center, United States Census. Retrieved February 22, 2015. Analysis by ECONorthwest.

Exhibit 5: Forecasted population for Oregon by Region, 2015-2035

Region	2015	2020	2025	2030	2035	% of Population 2035	Change 2015-2035	% of Change 2015-2035	AAGR 2015-2035
Metro	1,732,521	1,852,141	1,976,683	2,096,166	2,204,994	44.14%	472,473	47.55%	1.21%
Rest of State (per HB 2254)	2,269,078	2,399,959	2,539,518	2,671,835	2,790,208	100.00%	521,130	100.00%	1.04%
Valley	1,086,965	1,155,049	1,227,847	1,298,230	1,363,478	48.87%	276,513	53.06%	1.14%
Northwest	162,246	169,273	176,532	182,924	188,031	6.74%	25,786	4.95%	0.74%
Southwest	491,510	517,531	545,809	571,161	591,925	21.21%	100,415	19.27%	0.93%
Central	210,640	228,442	247,035	265,104	281,713	10.10%	71,073	13.64%	1.46%
East	317,718	329,664	342,296	354,415	365,061	13.08%	47,343	9.08%	0.70%
Oregon	4,001,600	4,252,100	4,516,200	4,768,000	4,995,203		993,603		1.12%

Source; State of Oregon Office of Economic Analysis.
http://www.oregon.gov/DAS/OEA/Pages/demographic.aspx#Long_Term_County_Forecast. Analysis by ECONorthwest. Retrieved February 22, 2015.

Exhibits 6, 7, and 8 show historical and forecasted **employment** in Oregon, by region. Key points:

- The Metro region accounted for **51%** of total employment in Oregon in 2013 and **89%** of total employment growth in Oregon from 2005-2014. It is forecasted to account for **51%** of total Oregon employment in 2022 and for **56%** of total employment growth in Oregon from 2012-2022.
- The Valley region accounted for **49%** of the rest of Oregon's total employment, and accounted for **64%** of employment growth in the rest of Oregon from 2005-2014. It is forecasted to account for **52%** of the rest of Oregon's employment in 2022 and for **56%** of total employment growth in the rest of Oregon from 2012-2022.

Exhibit 6: Historical employment for Oregon by Region, 2005-2014

	2005	2007	2009	2011	2013	2014, Q3	% of Employment 2014	Change 2005-2014	% of Change 2005-2014	AAGR 2005-2014
Metro	807,118	848,845	795,096	811,124	851,792	874,716	51.14%	67,598	88.87%	0.90%
Rest of State (per HB 2254)	827,100	858,787	793,305	785,736	806,943	835,565	100.00%	8,465	100.00%	0.11%
Valley	404,697	421,220	391,652	388,174	398,042	410,156	49.09%	5,459	64.49%	0.15%
Northwest	53,013	55,171	52,324	51,431	52,448	54,157	6.48%	1,144	13.51%	0.24%
Southwest	176,458	178,672	161,187	159,148	163,273	166,261	19.90%	-10,197	-120.46%	-0.66%
Central	76,321	82,837	71,481	70,622	75,291	80,783	9.67%	4,462	52.71%	0.63%
East	116,611	120,887	116,661	116,361	117,889	124,208	14.87%	7,597	89.75%	0.70%
Oregon	1,634,218	1,707,632	1,588,401	1,596,860	1,658,735	1,710,281		76,063		0.51%

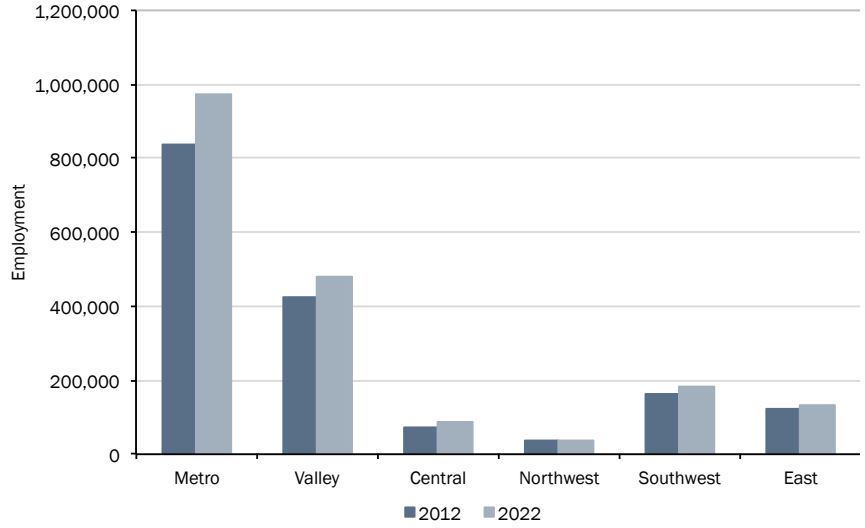
Source: State of Oregon Employment Department. Retrieved February 22, 2015. https://www.qualityinfo.org/ed-ewind/?at=1&t1=0~4101000000~00~5~0000~00~00000~2014~03.

Exhibit 7: Forecasted employment for Oregon by Region, 2012-2022

Region	2012	2022	% of Employment 2022	Change 2012-2022	% of Change 2012-2022	AAGR 2012-2022
Metro	837,290	974,410	51.38%	137,120	55.97%	1.53%
Rest of State (per HB 2254)	814,360	922,210	100.00%	107,850	100.00%	1.25%
Valley	422,470	481,440	52.21%	58,970	54.68%	1.32%
Northwest	35,100	39,210	4.25%	4,110	3.81%	1.11%
Southwest	162,150	181,990	19.73%	19,840	18.40%	1.16%
Central	73,620	85,760	9.30%	12,140	11.26%	1.54%
East	121,020	133,810	14.51%	12,790	11.86%	1.01%
Oregon	1,651,650	1,896,620		244,970		1.39%

Source: State of Oregon Employment Department.
https://www.qualityinfo.org/documents/10182/92203/Oregon+Employment+Projections+2012-2022?version=1.0.
Retrieved February 22, 2015.

Exhibit 8: Forecasted employment for Oregon by Region, 2012-2022



Source: State of Oregon Employment Department.
https://www.qualityinfo.org/documents/10182/92203/Oregon+Employment+Projections+2012-2022?version=1.0.
Retrieved February 22, 2015.

With respect to the requirements of HB 2254, there is nothing in these data about population or employment growth rates to suggest special adjustments for market conditions: the future is expected to closely follow past trends.

I noted in section 2.1 that it is not just *population* growth that drives demand for housing and retail space: the *purchasing power* and *preferences* of the population matter as well.

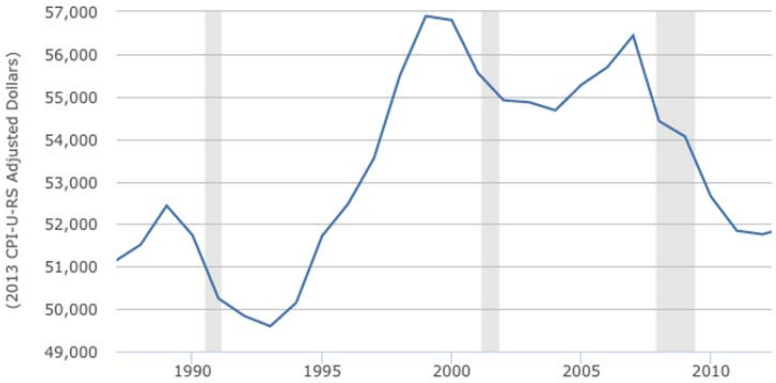
Regarding purchasing power (income), average real incomes (i.e., incomes adjusted for inflation with constant purchasing power) have not grown much nationally or in Oregon. The St. Louis Federal Reserve keeps data on hundreds of economic indicators. Exhibit 9 shows that income real median household income in the nation is about the same now as it was 20 years ago.

Data for Oregon (U.S. Census ACS 1-year survey) show all measures of real income (median household, median family, and per capita) essential flat since 2005, and below national averages (http://www.deptofnumbers.com/income/oregon/). Short-run (three year) forecasts by the State

Economist are for personal income to increase by around 5% per year (in nominal, not real, terms…that would mean a smaller annual growth [1 – 2%] of real income).

In short, there are no expectations of big gains or drops in purchasing power that would cause any significant shifts in consumer demand (for housing most importantly, and retail secondarily).

Exhibit 9: Real median household income in the US, 1993-2013



US. Bureau of the Census, Real Median Household Income in the United States[MEHOINUSA672N], retrieved from FRED, Federal Reserve Bank of St. Louis

One exception is that behind the averages (medians and means) is a different story. Incomes for the top 10% of households have been growing, while incomes for many other groups have been declining. Housing has historically been a good place for wealthy households to park increasing wealth. They get mortgage interest tax deductions, untaxed capital gains on appreciation, and the pleasure of enjoying more and higher-quality space. Combined with rising costs for and prices of new housing units, *these trends suggest increasing difficulties for building new housing affordable to middle-income households, and a continued demand for (1) new, high-end units, both single-family and condo, and (2) vacation homes*. In short, *the recent trends and current conditions are likely to continue: demand for smaller (less expensive units) and demand for larger, single-family units, with the share of single-family on smaller lots increasing.*

The topic of housing price and affordability is a central one to debates about Oregon's UGBs. Of the several indices, the Case-Shiller index is probably the one cited most my economists and market analysts. It typically works with data available in metropolitan areas and, thus, reports on affordability in larger cities. A recent version of the index shows Portland to be right at the average of a 20-city composite index, and Seattle at the same place, but large California cities (LA, SF, SD) much higher (less affordable).[12]

Additionally, the National Housing Conference's Center for Housing Policy completes a national Housing Landscape each year to assess housing affordability by state. The Housing Landscape reports the percentage of severely cost-burdened working households in each state (a cost-burdened household is one that spends more than half its income for housing costs). The 2014 Housing Landscape reported that 20 percent of Washington's, 25 percent of Oregon's, and 32 percent of California's working households were severely cost-burdened.[13]

To further compare housing affordability among regions in Oregon and among Oregon, Washington, and California, I created my own index. I used recent county and city level data to

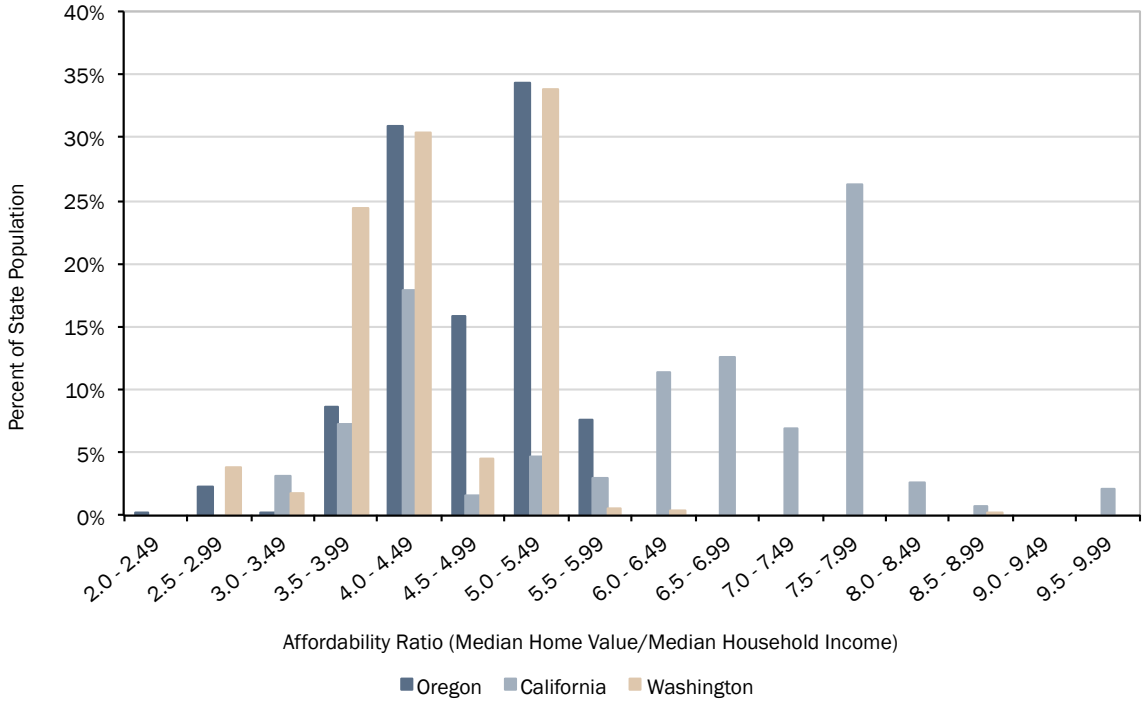
[12] S&P-Case-Shiller 20-City#CCE63D

[13] National Housing Conference, Center for Housing Policy. 2014 Housing Landscape. http://www.nhc.org/media/files/Landscape2014.pdf

divide median home value by median household income. showing housing affordability by county. The higher the number, the less affordable the housing.[14]

I used this ratio to address some common questions. Exhibit 10 addresses affordability in Oregon compared to other west coast states.[15] It shows the percent of the population in each state living in counties with different affordability ratios.

Exhibit 10: Distribution of affordability ratio by percent of state population for Oregon, California, and Washington



Source: 2013 5-Year American Community Survey, Analysis by ECONorthwest.

Exhibit 11 rolls up the data into statewide averages.

Exhibit 11: Weighted affordability ratio by population for Oregon, California, and Washington

State	Weighted Median Household Income	Weighted Median Home Value	Weighted Affordability Ratio
Oregon	$51,193	$238,797	4.67
California	$62,150	$390,373	6.15
Washington	$60,413	$272,508	4.45

Source: 2013 5-Year American Community Survey, Analysis by ECONorthwest.

My conclusions:

- California is clearly less affordable than Oregon or Washington on this measure.

[14] Data was obtained from American Community Survey 5-year data, 2009-2013. We use this estimate of median household income and median housing price as an approximate midpoint of the five years, 2011.

[15] The ratio is built from county-level data, by state, and weighted by population.

- Though Oregon and Washington look similar, Washington is more affordable because it has a larger percentage of people in the 3.5 to 3.99 category, and a smaller percentage in the 4.5 6to 4.99 category.
- My index ranks states consistently with the 2014 Housing Landscape reported above.

Exhibit 12 looks at affordability in more detail in Oregon.[16] The East is the most affordable region. The other regions are relatively clustered and I see little reason or practical way for the LCDC to include speculations about future housing affordability by region into adjustments to its new UGB rules.

Exhibit 12: Weighted affordability ratio by region in Oregon

Region	Median Household Income	Median Home Value	Affordability Ratio
Metro	$58,988	$281,711	4.81
Valley	$46,857	$210,424	4.51
Northwest	$47,059	$232,528	5.03
Southwest	$41,145	$206,307	5.02
Central	$48,311	$232,781	4.80
East	$43,482	$161,268	3.70

Source: 2013 5-Year American Community Survey, Analysis by ECONorthwest.

I looked at data on affordability because housing affordability is one of five to 10 issues that are almost always brought up in debates about Oregon UGBs. My conclusions:

- Given forecasted changes in the U.S. and Oregon economies in general, potential in-migration to the U.S. and Oregon, Oregon and local housing policies, and other factors, the problem of housing affordability is more likely to get worse than better.
- Goal 10 already requires cities to provide housing of all types for all income levels. In their UGB findings cities have to make the case that they are doing that.
- If my speculation that measures of housing affordability in Oregon may get worse in the future is correct (and it may not be), what does that mean about the LCDC rule-making for HB 2254? I can create several ad hoc arguments:
    - Contributing to the cost of housing is the cost of land and permitting. Simplifying the rules is likely to make housing more affordable.
    - A counterpoint: if simplification means that cities no longer have to be explicit about what they are going to do to provide affordable housing, then that could be bad for affordable housing.
    - Counterpoint to the counterpoint: what gets done directly for affordable housing through a UGB amendment process is modest. The main thing a state can do, which is important, is to put pressure on local governments to allow and provide land for multi-family housing. Multi-family housing of some types is more affordable, other things being equal, because it has less land and (usually) less built space. But multi-

[16] Each value was calculated by a weighted average of each county within the region by population. Larger counties within each region had a greater influence on the region's affordability ratio.

family housing can also be expensive (e.g., downtown or vacation condominiums). Oregon backed away from requirements for inclusionary zoning; other states (e.g., New Jersey) have not. Further, any new housing, without subsidy, is unlikely to be affordable to a large segment of the population with lower household incomes.

I think the market information about affordability can be used to make either of two opposite cases: (1) that the state should do less (simplify the rules), or (2) that the state should do more (e.g., more planning requirements for affordable housing; more state resources to subsidize affordable housing). *Regarding affordable housing, if there is an implication for the LCDC rule-making on HB 2254 it seems to be equivocal: the LCDC should decide how it wants to address affordable housing in its rule-making: the market data are open to different policy prescriptions.*

Regarding current regional variations in affordability by region in Oregon (Exhibit 12): (1) those are current conditions, not forecasts, and this part of HB 2254 is about forecasted market conditions; and (2) even if we forecasted current affordability by indices to remain relatively the same or to change, I don't see any clear recommendation for how that should influence DCLD's rule-making.

3.4 Possible changes in urban land markets

This section summarizes key information about possible changes in urban land markets contained in Appendices A, B, and C. To make this section a little more readable, I skip the citations: they can be found in the appendices. It addresses the three broad land use types that cover most of private, market-based land development: residential, commercial, and industrial.

In all cases I am talking about broad trends and general tendencies. Even if, for example, "Boomers are downsizing" or "Millennials prefer urban environments" in general, there will be hundreds of thousands of households in the U.S. for whom this will not be true. I think the correct interpretation is about the direction of change, not that there will be a quick and huge flip. Market prices and changes in public policy and investment will dampen the swings.

In this section I just summarize what my research found other researchers saying about future land markets. I discuss implications in Chapter 4.

3.4.1 Residential land markets

- **The Baby Boomers are aging.** Seniors (age 65 and over) made up between 20 and 25 percent of the U.S. population in 1970, and are expected to make up over 40 percent by 2040. The 78 million boomers, born between 1946 and 1964, are projected to account for about 20% of the U.S. population, up from 12% in 2000. While many Boomers will choose to remain in their houses as long as possible, many will seek to downsize to smaller single-family homes or multifamily homes, rent, or live in retirement communities or assisted living homes. One survey found 72 percent of Boomers would trade a large home for a shorter commute, and 51% prefer mixed-use walkable communities.
- **Generation X can't buy all the Boomers' homes.** Most of Generation X, a much smaller generation born between 1961 and 1981, have plateaued in their careers and were those who were hit the hardest during the recession. On average those between 45 to 54 years

old saw a decrease in their real median incomes of 6 percent over 10 years. This decline in household income contributes to declining household net worth which, along with having children, decreases available funds for down payments on the Boomers' single-family homes. Because Generation X is a smaller generation, this further decreases the demand for the Boomers' single-family houses. Some analysts predict the an excess of suburban single-family houses as Boomers choose or are compelled to downsize.

- **Millennials are entering their prime earning years.** Millennials (or the Echo Boomers, the majority of whom are born between 1982 and 1995) will all be older than 25 by 2030, with the majority being between 35 and 48 years old. Thus, the Millennial generation will enter their prime earning years in the next fifteen to twenty years, and would be the generation expected to purchase the Boomers' houses.
- **Millennials prefer urban environments (at least now).** The suburban lifestyle is less attractive to Millennials, whose preferred residential characteristics include multiple and high-quality transit options, walkability, parks, technology, excitement, and cool and fun factors. In one survey, fifty-four percent of Millennials stated they would give up a larger home for a shorter commute, 62% prefer mixed-use communities, and 52% prefer mixed-income communities. Since 2000, 37% more college-educated people age 25-34 are living within three miles of a city center, and 25% more live in major metropolitan areas. Urban characteristics will continue to draw people to urban areas. The big debate about Millennials is whether their choices are driven by underlying and lasting changes in values, or are a practical response to the fact that they have less income.
- **Millennials still want to own a house, eventually.** While Millennials are moving to urban areas, studies and surveys show that many Millennials are still likely to seek homeownership down the road. The delay is due to several factors including delays in marriage and starting families, student debt, the Great Recession. In a survey from the Demand Institute, 75% of Millennial respondents cited homeownership as a long term goal. Given their higher preference for urban areas (compared to the same age group 20 years ago) it is reasonable to expect that Millennials that do go to the suburbs will place more value on places that are walkable, have open space, and have gathering places.
- **The changing family and changing energy prices will decrease demand for single-family homes.** Many of the suburban single-family homes were built when the nuclear family was typical and energy prices were low. With increases in a family structure variety, race and ethnic diversity, and energy prices, the demand for large single-family houses is expected to decrease.
- **Continued increases in the immigrant population will increase demand for multifamily housing and eventually homeownership.** Recent immigrants are likely to choose more affordable multifamily housing initially. Homeownership increases, however, for second-generation immigrant households. The growth in the Hispanic population (resulting from immigration and natural increases) is projected to result in the country's Hispanic and Latino population increasing to 20% of the U.S. population by 2020, up from 13% in 2000.

3.4.2 Commercial land markets

Office Space

- **Telecommuting has become more accepted, and even encouraged, especially in large and congested metropolitan areas**. Remote work will continue to become a larger percentage of all office work.
- **More efficient use of office space is leading to downsized offices.** Traditionally, most employees have an assigned office or desk, leading to a 50 percent utilization rate. Now, companies are moving towards office-sharing, tolerating less underutilized or wasted space in the office. This shared office space has, in some cases, increased office utilization rates to 95%. With increased office utilization rates, companies are able to downsize their rented office space to decrease costs.
- **Increased efficiency and utilization has increased employment density**. About ten years ago, 250 square feet per office employee was the norm. Now, the average is closer to 195 square feet or less per office employee. Can that decrease in space per employee continue—can they be packed any tighter? The answer is that these averages are not based on the employment density of a typical day at the office, but are derived by dividing estimates of total office space by total employees. Shift work and telecommuting can allow that average space per employee to continue to drop.
- **Young employees are attracted to modern office space**. The same Millennials who seek an urban lifestyle are more attracted to newer and more modern office spaces with natural light, more technology, and an increased sense of collaboration.

Retail

- **As the Millennials replace the Boomers as shoppers, priorities will shift.** . Both luxury stores and value stores are expected to do well, but mid-priced stores will lose market share as consumers "trade up and down."
- **Continued increases in online sales will lead to increased mall and retail vacancy rates.** Long-term leases on large retail spaces will make it difficult for businesses to downsize when faced with decreased sales, forcing them to locate in less desirable areas, which will further increase online shopping. Hundreds of retail stores are closing around the country after facing decreased sales. In 2013, sales dropped over five percent, following a continued downward trend.
- **Some retail sectors will do better than others.** Sectors like health, beauty, and home are expected to be stronger than sectors like music, books, and video in the future, because personal interaction is more likely to be required before purchase.

3.4.3 Industrial land markets

- **Recent technological improvements in industrial robots and automation will affect manufacturing and industrial markets.** In previous years, robots have been used in the more dangerous or precise processes of manufacturing, but have been excluded from performing human tasks. New technologies have made it realistic for relatively

inexpensive robots (who do not require wages or healthcare) to perform those human tasks. The relative inexpensiveness of robots like this will reduce industry costs and continue to make manufacturing in the United States more economically feasible.

- **Additive technology has potential to reduce manufacturing costs.** 3D printing is highly customizable, so can reduce development costs, customize goods for specific consumers, reduce waste, and simplify manufacturing processes.
- **Outsourced production will begin to be brought back to the United States.** With increased technological innovation in the coming years that will reduce production costs and make domestic production economically feasible, re-shoring is expected to occur.

3.5 Recent land absorption in Oregon

One way to think about the future conversion of vacant land to developed land is to look at factors that create a demand for development, how they have changed in the past, and how they might change in the future. That is what I did in Sections 3.3 and 3.4. But another way to predict future land conversion is to look at past land conversion. In the absence of direct data about land conversion (such data exist for some cities, but they are not comprehensive and consistent), one can look at data that are indirect and partial: namely, at the construction / absorption of new housing units.

There are good reasons to be ambivalent about using recent absorption to forecast future absorption. On the negative side (1) short-run absorption may be low or high because of business cycles, and (2) even long-run trends can change in response to fundamental changes in economic, demographic, technological, and regulatory conditions. On the positive side, the trend of absorption can be very stable for jurisdictions over the long run, and all jurisdictions need some solid, empirical basis from which to start their thinking about future absorption.

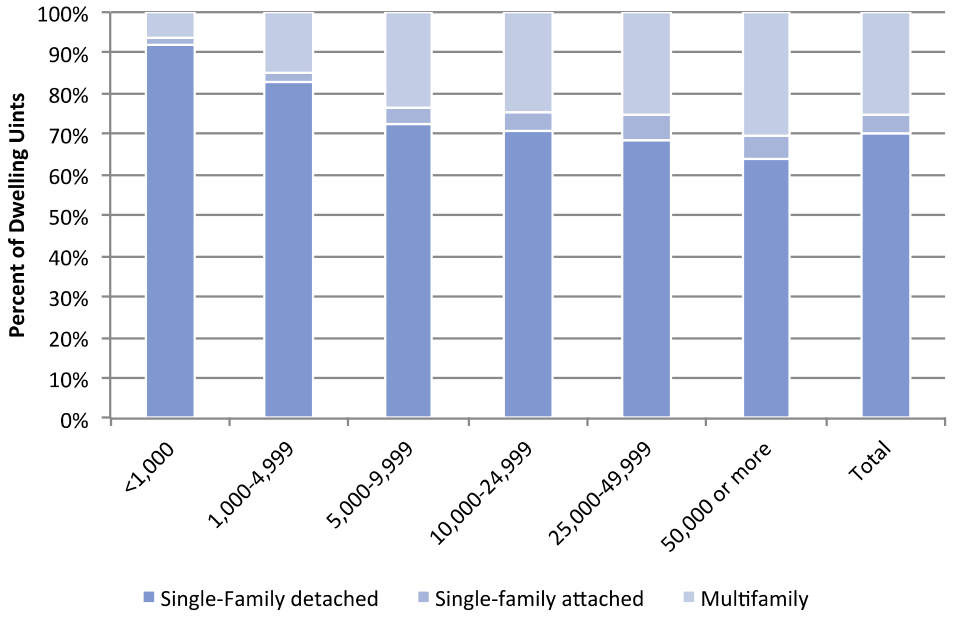
I provide some information about recent trends in Appendix D, but I do not find it of much use for this assignment. Short-run information available from standard real-estate sources tells the expected story that real-estate markets are better now than they were when the bursting real-estate bubble triggered a multi-year recession in 2008. It does not provide information about longer-run trends in product mix or density, and it is those longer-run trends that are more germane to the HB 2254 questions.

I did not assemble data on long-run trends in the absorption of employment land. To get a sense of the longer-run trends in residential product type and density in Oregon, I turned to the recent work by the University of Oregon done for DLCD.[17] Detail is available in the report.

Exhibits 13 shows the current housing mix for non-Metro cities in Oregon, and the expected correlation: the larger the city, the larger the percent of housing that is multifamily.

[17] Analysis of Land Use Efficiency in Oregon Cities: A Report to the HB 2254 Rulemaking Committee. University of Oregon Community Service Center, final draft May 2015.

Exhibit 13: Housing mix by city size, all non-Metro cities in Oregon, 2012

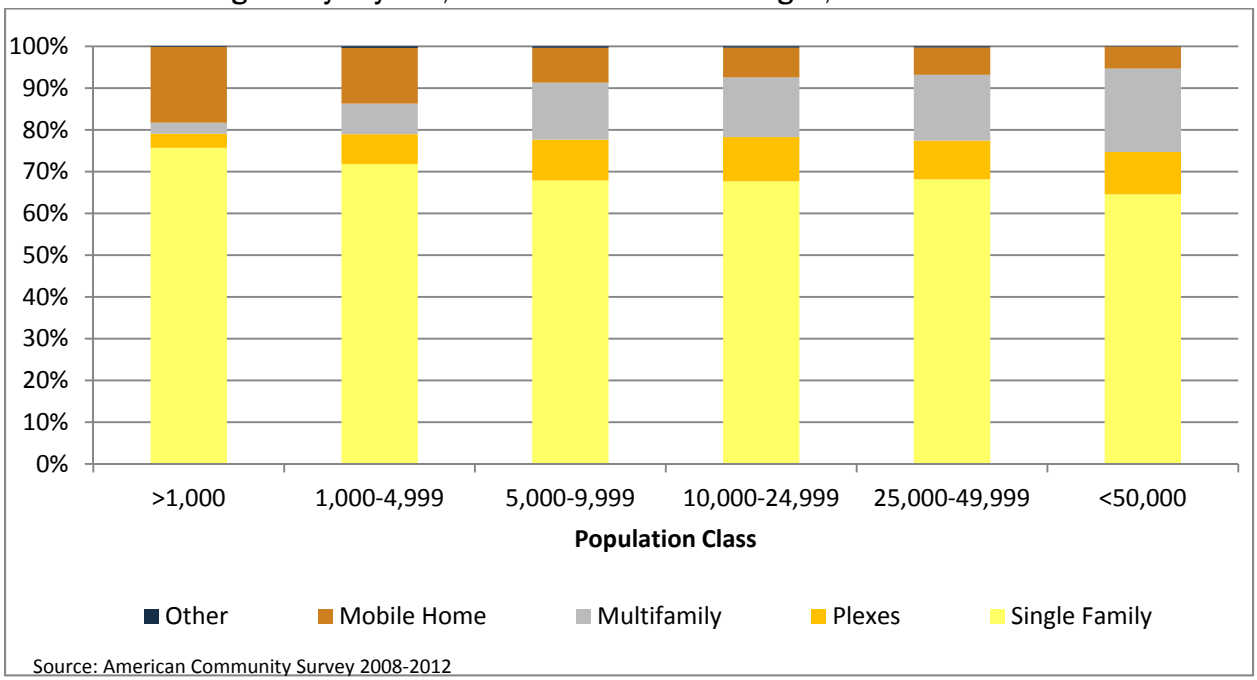


Source: From Rebecca Lewis, co-author of *Analysis of Land Use Efficiency in Oregon Cities: A Report to the HB 2254 Rulemaking Committee*. University of Oregon Community Service Center, final draft May 2015.

Exhibits 14 shows the recent trend in absorption, by housing type, for non-Metro cities in Oregon, and the expected correlations: the larger the city, the larger the percent of housing that is multifamily, and the smaller the percentage that is mobile home.

I discuss my ideas about the implications of these data for the LCDC's HB 2254 rule-making in the next section.

Exhibit 14: Housing mix by city size, all non-Metro cities in Oregon, 2008-2012



Source: From Rebecca Lewis, co-author of *Analysis of Land Use Efficiency in Oregon Cities: A Report to the HB 2254 Rulemaking Committee*. University of Oregon Community Service Center, final draft May 2015.

4. Implications

4.1 Regarding the logic of the requirement

A lot goes into writing rules. They are complicated. HB 2254 is about simplification and it is complicated. Inconsistencies and unintended consequences are inevitable. I would not want to be a rule writer.

I was on the DLCD committee that reviewed work in progress as the language that eventually became HB 2254 was being drafted. I don't remember a lot of discussion about the "changes in markets for urban land" section. It probably seemed logical to everyone: yes, the LCDC should have some flexibility to adjust its rules based on future changes to urban land markets.

The rule did not foresee this situation: I am writing a white paper about market forces that will go the RAC. The RAC and DLCDC staff might consider the evidence I have presented as it creates the rules it will recommend to the LCDC for consideration. In other words, it is possible (likely) that the rule that goes to the LCDC will already have considered much of what is important about market changes, and that additional adjustments made by the LCDC would be unnecessary and, perhaps, redundant.

I cannot know now the extent to which that hypothetical will prove true. I note it to remind DLCD staff to evaluate that point as it prepares it recommended rules for the LCDC.

4.2 Regarding supply and development capacity

What are the implications for the HB 2254 requirement that the LCDC consider urban land markets when determining the supply and development capacity of lands already within an urban growth boundary (i.e., the Buildable Lands Inventory)? My conclusions:

- There is no absolute shortage of vacant land in Oregon cities, on average.
- The amount of potentially buildable land in UGBs in Oregon cities is high relative to the annual conversion of vacant (unimproved) land to developed (improved) land .
- More difficult to measure is whether UGBs provide enough buildable land that is readily available at reasonable prices. That depends on perceptions and predilections of property owners and developers and on public policy (especially regarding zoning, permitting, and infrastructure provision and pricing).
- For the purposes of this requirement of HB 2254, I conclude that there is nothing exceptional *on the supply side* of the market that is not already being considered through current UGB practices or through the simplified practices now being considered by DLCD and the RAC.

4.3 Regarding forecasting land need

What are the implications for the HB 2254 requirement that the LCDC consider urban land markets when converting forecasted population and employment growth into forecasts of land need? My conclusions:

- Regarding population and employment forecasts, the primary drivers of demand for new development and the land to build it on, there is nothing in the data about historical or forecasted rates of population or employment to suggest a need for special adjustments for market conditions: the future is expected to closely follow past trends.
- Regarding housing cost, price, and preference, trends suggest increasing difficulties for building new housing affordable to middle-income households (much less low-income households). That problem suggests one solution: reducing cost by reducing floor space and lot size (i.e., increasing density). Recent trends are consistent with the speculation that national housing markets and Oregon land-use policy are shifting in the same direction: slowly toward an increased share of new housing that is multifamily and small-lot single family. But I expect a continued market demand for (1) new, high-end units, both single-family and condominium, and (2) vacation homes.
- I found no data to make a compelling argument for regional differences in policy based on market conditions, and certainly not for ones that go beyond whatever DLCD staff and the RAC are already considering.
- If the LCDC wants to address affordable housing in its rule-making, the market data are open to different policy prescriptions. I don't see any clear recommendation for how the evidence I presented should influence LCDC's rule-making.

4.4 Closing comments

In general, I expect that the work of DLCD staff and the RAC, as they work on drafting rules over the next six months for the LCDC to deliberate, will considered (explicitly or implicitly) all of the market factors I discuss in this white paper. In other words, the consideration of these factors that HB 2254 requires of the LCDC is likely to have been mainly done and incorporated into the draft rules that DLCD and the RAC forward too the LCDC.

If DLCD staff reject that version of my conclusions and believe that the LCDC will need to do more review , then I have presented evidence to limit that review.

- No market information I reviewed about the *amount of land* or the *amount of population and employment growth* make a compelling case the LCDC needs to make special adjustment to its rules. I do not expect DLCD staff and the RAC to get stuck on recommendations about rules of land supply (which is mainly factual and does not have to be forecasted), population growth (which now has PSU implementing a standardized procedures), or employment growth (staff at DLCD and the Oregon Employment Department are working out standard procedures now).
- The more likely area for difficulty is the conversion of expected (and agreed upon) population and employment growth into land need—in other words, the problem will be assumptions about future density.

The University of Oregon has done what its budget will allow regarding historical residential density. That provides a good base for discussion. But after that, one can make theoretical arguments on why future development might occur at densities different from those of current development. In theory, there are arguments for less density. But (1) the market arguments for greater average density are, in my opinion, stronger than those for less density, (2) HB 2254 implies, and all the RAC discussions have been explicit, that the idea of "land use efficiency" should mean that most cities in Oregon have to be, at least modestly, increasing their densities.

Thus, the RAC debate over the next few months will be about how to balance the goals of simplification and uptake (in other words, the goal is to have a rule that a lot of cities use—no matter how simple it is, if jurisdictions do not use it because they think it requires them to plan for unmarketable and unachievable densities, then simplification has no practical effect) against the goal of increasing density. Most RAC members, myself included, probably already have opinions about how far to push density, and we can probably find something in this white paper to support those opinions.

APPENDIX A: Review of the Literature on Factors Affecting Markets for Urban Development

To find a wide variety of sources, I conducted various internet searches, typically via Google. Keywords included "market demand forecasts and projections" for all three categories: residential, commercial, and industrial land markets. For each category, I moved into more targeted searches once general articles were found. Potential sources included news articles, academic journals, the Brookings Institute, and the Urban Land Institute. Many articles, especially from real estate agencies, provided forecasts for the coming year, but not 10 years out.

I report the literature in three categories: (1) residential land markets, (2) commercial land markets, and (3) industrial land markets. The bibliography at the end of the appendix is organized the same way.

Summary of the literature

Residential land markets

Reports from various news sources, publications, and journals discuss possible changes in future absorption in United States residential land markets. Over the next five to ten years, large changes could potentially occur in two generations: the Baby Boomers and the Millennials.

The Baby Boomers, comprised of 78 million Americans born between 1946 and 1964, have made a large impact on the development of American residential land markets (Greenblatt, 2011). Between 1990 and 2010, the Boomers were at the "peak of their family size and peak income," resulting in high demand for large-lot single-family suburban homes (Badger, 2013). However, as the aging Boomers continue to grow the senior population, from 2013-2020 the total senior population is expected to grow by 14.2 million (Pendall, et al. 2012). Seniors (age 65 and over) made up between 20 and 25 percent of the population in 1970, and are expected to make up over 40 percent of the total population by 2040 (Myers, 2015).

Although many seniors stay in single-family housing, studies show that seniors in general "release much more housing than they absorb," creating a net release of housing (Greenblatt, 2011). The Boomers will follow this trend and be looking to sell their single-family homes that they likely acquired in the 1980's and 1990's for several reasons. First, the retiring Boomers', with their children moved out, will begin to look to downsize (Leinberger 2011). Also, with age comes more difficulty in maintaining a home and living independently (Pendall, et al. 2012). Finally, for many Boomers, their house is their largest asset. Selling it and downsizing or renting will provide the necessary money that they lost during the recession or may not have saved during retirement (Meehan, 2014). A survey also showed that Boomers were looking to "age in place," corresponding to better transit, walkable communities, technology, and housing. As the total senior population is expected to increase, we can expect a net release of single-family housing at the end of the decade, known as the "Great Senior Sell-Off" (Eisenberg 2013).

As the Boomers look to sell their single-family homes, who will buy them in the next five to ten years? The consensus is not enough people, leading to an oversupply of suburban housing (Boyd 2010). Generation X, born between 1961 and 1981, won't likely fuel the demand. Many have plateaued in their careers, were hit hard by the recession, have children to care for, and seen declining household net worth. This all leads to limited funds to dedicate towards down payments on the Boomers' homes (Meehan 2014).

Like Generation X, the roughly 80 million Millennials (born between 1980 and the early 2000's) may not buy the Boomers' single-family homes. The suburban lifestyle is less attractive to Millennials. According to surveys, the preferred characteristics of a residence include multiple high-quality transit options, walkability, good schools, parks, technology, "cool," and fun (Flint, 2014 and Miller, 2014). In a study released by the Rockefeller Foundation and Transportation for America last year, 66 percent of surveyed Millennnials in ten cities cited high quality transportation access as one of the top three criteria in deciding where to live, and almost half would consider giving up their car if they had transportation options (Rockefeller Foundation 2014). Since 2000, 37 percent more college-educated people age 25-34 are living within three miles of a city center, and 25 percent more live in major metropolitan areas (Miller 2014). For now, the excitement and adventure paired with short commutes, transit, and walkability will continue to draw people to urban areas. As the only United States city rated on the Monocle's top 25 cities in their Quality of Life Survey in 2014 (which includes many livability factors including green space, transit, and culture), Portland surely will continue to attract Millennials from around the country (Monocle 2014).

While Millennials are generally not currently looking to own a single-family home, they will eventually desire them, showing that the younger generations make choices about housing throughout various life stages. Multiple studies have suggested that Millennials desire homeownership someday, especially after marriage and children. One reason for this delay in the desire for homeownership is the increased age of marriage (Davidson, 2014). In a survey of Millennial households (ages 18-29) in 2013, 74 percent planned to move in the next five years. The top reasons for this move were for a better living situation (71%), more privacy (59%), to establish one's own household (50%), and to own, not rent (48%). Seventy five percent of survey respondents cited homeownership as an important long-term goal. (Burbank and Keely, 2014). While 64% planned to be married in five years, we must also keep in mind that Millennial households may be older respondents, that is those already living in a household. Thus, high-school and college students may be underrepresented in the Millennial survey, However, Millennials will be more attracted to suburbs that have open space, are walkable, and have gathering spaces (Heckmann 2014).

Intergenerationally, the definition of an American family has and will continue to change. Over time and across generations, there has been an increase in single-parent families, and increased divorced rates. Thus, the need for large single-family homes will continue to decrease due to single-parent families but could increase with increased divorced rates (Bloomberg and Matthews 2014). Additionally, recent immigrants are likely to choose more affordable multifamily housing initially. Homeownership increases, however, for second-generation immigrant households. The growth in the Hispanic population (resulting from immigration and

natural increases) is projected to result in the country's Hispanic and Latino population increasing to almost 20% of the U.S. population by 2020, up from 13% in 2000 (Pendall et al. 2012 and US Census, 2012).

Commercial land markets

Commercial land markets can be split into two separate and very different classifications: office and retail. With increased technology come changes in office settings and demand around the country. Just as we saw book and video stores go out of business, we can expect to see changes in office spaces due to increased connectivity and digital technology.

Major trends in office work have and will affect the office market. While economic incentives caused downsizing, especially during the recession, technology is arguably a larger driving factor. First, we see that remote work is rapidly growing and will continue to become a larger percentage of all office work. Traditionally most employees had their own assigned office or desk, leading to a 50 percent utilization rate. As remote work and telecommuting have become more accepted, and even encouraged, companies have downsized offices and altered the layout of their office spaces.

Trends show that many companies have moved towards office-sharing as opposed to individual offices. Tolerating less underutilized or wasted space in the office, firms that have moved in this direction show higher (more efficient) utilization rates of up to 95 percent. (O'Connell, 2014). When space can be used more efficiently, companies are able to downsize their office and rent less office space. The increased efficiency and utilization has lead to increased employment density in office spaces. About ten years ago, 250 square feet per office employee was the norm. Now, the average is closer to 195 square feet or less per office employee (Heschmeyer 2013).

These new office spaces not only provide a more efficient use of desk space, but make the space more attractive to the next generation of employees: the same employees who are looking to live in walkable urban settings. The newer and more modern office spaces have more natural light, are more technology based, and promote a feeling of collaboration (Heschmeyer 2013). This new atmosphere is not only good for the employees, but for the companies themselves. By fostering creativity, community, collaboration, and innovation, companies see increased productivity and profitability in the healthier workspace (Donnaly 2014).

However, these changes in more efficient office space apply to larger publically traded corporations, and less to smaller office tenants (5,000 square feet or less) who still prefer private offices rather than shared office space. Additionally, uncertainty has caused a shift towards shorter office spaces leases (Heschmeyer 2013).

If forecasts for office markets do not incorporate and address changes in the office space trends themselves, the forecasts will not properly reflect the anticipated changes. If all else were held constant, including office space layout and technology, we could assume that an increase in new business and employment would yield a specific increase in office space demanded in the future. However, if we anticipate increasing employment density and remote work, the forecast becomes less clear.

While green office spaces are expected to do well, the office market will remain tough with decreased demand for office space. (See below).

Retail markets also continue to be affected by improving technology. With Y2K came increased anticipation of e-commerce, eventually leading to the formation and burst of the dotcom bubble. Still, the internet has continued to provide online shopping opportunities as an alternative to the traditional shopping experience in stores. Benefits of online shopping and online sales include ease of purchase, customization, availability, and low prices and shipment. Consequentially, traditional retailers are facing increasingly limited options to compete with online shopping (Kleinberger and Hendren 2012).

Expectations for retail in 2020 (in an white paper written by IBM and New York University) show major changes. First, there is an expected customer shift from Boomers to Millennials, who have different priorities. Both luxury stores and value stores are expected to do well, but mid-priced stores will lose market share as consumers "trade up and down" (Kleinberger and Hendren 2012).

Retail space in the United States was built faster than retail sales growth itself between 1980 and 2010. With an increase in online sales, the mall and retail vacancy rates are expected to continue to increase. Long-term leases on large retail spaces will make it more difficult for those "brick and mortar" retailers to downsize when faced with decreased sales. Thus, the locations will be in less-desirable areas, causing a greater shift to online shopping (Kleinberger and Hendren 2012).

Hundreds of retail stores are closing around the country, and there is no doubt why: offline sales are down. According to Business Insider, sales dropped over five percent in 2013, following a downward trend (Smith 2014).

Facing increased technology and online shopping, new retail models will provide "unique shopping experiences for their guests" (Dan 2014). It is expected that sectors like health, beauty, and home will be stronger than sectors like music, video, and books because of the often required personal interaction with the product before purchase (PwC 2014).

However, as online shopping increases and shipping time decreases, there will be an increased need for warehouses in the United States closer to the customers (PwC 2014).

Before the introduction of e-commerce, it was much simpler to calculate the necessary changes in retail space. In a given area, a household is assumed to have a given amount of disposable income, which provides them with purchasing power. What the household chooses not to save is then spent. Before internet and e-commerce, consumption was mainly local except for vacations. Local consumption included groceries and retail. Thus, in a city, we could calculate total consumer spending per square foot of retail space per year. We could use this relationship to calculate necessary future retail space increases due to forecasted population increase. Knowing how many employees were needed per square foot of retail space, we could then estimate the resulting increase in employment in the retail sector. Online shopping has changed

this somewhat simple methodology. Now, increases in population in a city may not significantly increase the need for retail space in that city, as consumption does not stay local.

Industrial land markets

Since 1990, employment in the manufacturing sector has dropped from 18 to 12 million. As a result, more people have entered the service industry (Wilson 2014). The future of manufacturing the United States will be dependent on whether the industries can adapt to and embrace available technologies. The country's technological innovation continues to be high, as the number of patents issued has "increased substantially since the 1970s" (Baily and Bosworth 2014, 19).

Recent technological improvements in industrial robots and automation will affect manufacturing and industrial markets. In previous years, robots have been used in the more dangerous or precise processes of manufacturing, but have been excluded from performing human tasks. However, new technologies have made it realistic for relatively inexpensive robots (who do not require wages or healthcare) to perform those human tasks (Baily and Bosworth 2014). The price of robots has decreased relative to the price of labor since 1990. For example, Baxter is a $22,000 robot manufactured by an American firm that is safe and easy to operate. The relative inexpensiveness of robots like this will reduce industry costs and continue to make manufacturing in the United States more economically feasible (Economist 2013).

In addition to robots, we are continuing to see advances in additive technology, like 3D printing. Additive technology has great potential to reduce manufacturing costs. Because production can be highly customizable, it can reduce development costs, customize goods for specific customers, reduce waste, and simplify manufacturing processes. Additionally, increased computer technology will allow for increased digital modeling, development, and testing. Internet connections also will also allow for remote management and smart motors, increasing efficiency (Baily and Bosworth 2014).

Companies originally outsourced production because it was less expensive to do so. With increased technological innovation in the coming years, it is expected that many companies will begin to bring production back to the United States if it is economically feasible to do so (Northam 2014).

While increased robotics in the manufacturing industry will replace part of the labor force, it could be compensated by the reshoring trend. Others suggest that increased manufacturing in the Untied States due to increased technology will broaden the supply create new demand for inputs (Economist 2013).

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APPENDIX B: Factors Affecting Residential Development

This appendix is abstracted from other reports ECONorthwest has done on residential land and development markets.[1] This summary focuses on Eugene as an example.

1. Factors affecting housing choice

In the context of housing markets, what one observes when looking at past and current housing conditions is *the intersection of the forces of housing supply and demand at a price of housing.* Analysts typically focus a description of housing demand on the characteristics of households that create or are correlated with *preferences* for different types of housing, and *the ability to pay* (the ability to exercise those preferences in a housing market by purchasing or renting housing; in other words, income or wealth).

One way to forecast housing demand is with detailed analysis of demographic and socioeconomic variables. If one could do the measurement fine enough, one might find that every household has a unique set of preferences for housing. But no city-wide housing analysis can expect to build from the preferences of individual households.[2] Most housing market analyses that get to this level of detail try to describe *categories* of households on the assumption that households in each category will share characteristics that will make their preferences similar.

The main demographic and socioeconomic variables that may affect housing choice include: age of householder, household composition (e.g., married couple with children or single-person household), size of household, ethnicity, race, household income, or accumulated wealth (e.g., real estate or stocks). The literature about housing markets identify the following household characteristics so those most strongly correlated with housing choice are: age of the householder, size of the household, and income. [3]

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[1] *Anchorage Housing Market Analysis* 2012; *Demographics and Their Affect on Housing Demand in Eugene*, 2010.

[2] Not only could one not measure the preferences of all existing households (now and in the future); one could not know what specific households would be migrating to the region.

[3] The research in this memorandum is based on numerous articles and sources of information about housing, including:

M. Dieleman. *Households and Housing*. New Brunswick, NJ: Center for Urban Policy Research. 1996.

The State of the Nation's Housing 2010. The Joint Center for Housing Studies of Harvard University. 2010.

The Case for Multifamily Housing. Urban Land Institute. 2003

E. Zietz. *Multifamily Housing: A Review of Theory and Evidence.* Journal of Real Estate Research, Volume 25, Number 2. 2003.

E. Birch. *Who Lives Downtown.* Brookings Institution. 2005.

C. Rombouts. *Changing Demographics of Homebuyers and Renters.* Multifamily Trends. Winter 2004.

J. McIlwain. *Housing in America: The New Decade.* Urban Land Institute. 2010.

M. Lerner. The New American Renters. Multifamily Trends. May/June 2006.

W. Hudnut III. Impact of Boomer Retirement on Sprawl. Urban Land, February 2005.

- **Age of householder** is the age of the person identified (in the Census) as the head of household. Households make different housing choices at different stages of life. For example, a person may choose to live in an apartment when they are just out of high school or college but if they have children, they may choose to live in a single-family detached house.
- **Size of household** is the number of people living in the household. Younger and older people are more likely to live in single-person households and people in their middle years are more likely to live in multiple person households (often with children).
- **Income** is the household income. Income is probably the most important determinant of housing choice. Income is strongly related to the type of housing a household chooses (e.g., single-family detached, duplex, or a building with more than five units) and to household tenure (e.g., rent or own). A review of census data that analyzes housing types by income in most cities will show that as income increases, households are more likely to choose single-family detached housing types. Consistent with the relationship between income and housing type, higher income households are also more likely to own than rent.

2. Factors affecting housing mix

The previous section described the three household characteristics that are most closely correlated with household choice. This section describes the demographic and socioeconomic trends in Eugene and Lane County related to these characteristics by describing the characteristics of households currently in Eugene. The majority of Eugene's population growth, however, is expected to be the result of in-migration.[4] It is difficult (if not impossible) to accurately project the characteristics of households that may move to Eugene over the next 20 years, beyond the projections for changes in population by age group. To some degree, projecting future housing preference relies on estimating the ways that the characteristics of new households in Eugene will be different and make different housing choices than existing households.

D. Myers and S. Ryu. Aging Baby Boomers and the Generational Housing Bubble. Journal of the American Planning Association. Winter 2008.

M. Riche. *The Implications of Changing U.S. Demographics for Housing Choice and Location in Cities.* The Brookings Institution Center on Urban and Metropolitan Policy. March 2001.

L. Lachman and D. Brett. *Generation Y: America's New Housing Wave.* Urban Land Institute. 2010.

AARP. *Home and Community Preferences of the 45+ Population*. 2010.

AARP. *Approaching 65: A Survey of Baby Boomers Turning 65 Years Old*. 2010.

U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin: 2000 to 2050. Bureau of the Census.

ECONorthwest's analysis of 2000 Census Public Use Microdata Sample (PUMS) data for Oregon and counties within Oregon.

U.S. Census data for 1990, 2000, and American Community Survey data.

[4] The Portland State University Population Research Center's annual estimate of population shows that about 75% of Lane County's population growth between 1990 and 2007 is the result of in-migration. We assume that in-migration will continue to account for the majority of growth in Lane County over the planning period.

The national demographic trends that will affect housing demand across the U.S., as well as Oregon and Eugene are:

- **Aging of the baby boomers.** By 2029, the youngest baby boomers will be 65 years old. By 2030, people 65 years and older are projected to account for about 20% of the U.S. population, up from about 12% of the population in 2000.
- **Growth in echo boomers.** Echo boomers are a large group of people born from the late-1970's to early 2000's, with the largest concentration born between 1982 and 1995. By 2030, echo boomers will all be older than 25 years old, with the majority between the ages of 35 to 48 years old. The echo boomers will form households and enter their prime earnings years during the 20 year planning period.
- **Growth of immigrants.** One of the fastest growing groups in the U.S. will be immigrants, with Hispanics the fastest growing groups. By 2030, Hispanics are projected account for about 20% of the U.S. population, an increase from about 13% of the U.S. population in 2000.
- **Increase in diversity.** One of the fastest growing ethnic groups in the U.S. are Hispanics and Latinos. By 2030, Hispanics and Latinos are projected account for about 20% of the U.S. population, an increase from about 13% of the U.S. population in 2000. Growth in Hispanics and Latinos will be the result of natural increase (more births than deaths) and immigration from other countries.
- **Other trends.** Eugene's housing market will be affected by other demographic trends, such as:
    - **Growing student population.** The University of Oregon projects growth of about 3,700 students over the 2009 to 2019 period (from 20,300 students in 2009)[5] and plans to build an additional approximately 1,500 bed spaces over the 2007 to 2017 period.[6]
    - **Change in household composition.** The composition of households is changing, in part as a result of the aging of the population, growth of immigrants, and increase in diversity. Traditional household composition (e.g., households with children and married couples) are becoming less common and non-traditional household composition (e.g., single-family households an non-family households) are becoming more common.

The following demographic and socioeconomic trends may affect housing choice in Eugene over the next 20 years:[7]

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[5] 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

[6] 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

[7] Table 1 discusses the characteristics of the householder. A householder is the head of household, as identified by the Census.

Table 1. Demographic trends and their affect on housing demand in Eugene

		Affect of trends on household choice			
	Demographic trends	**Age of household head**	**Household size and composition**	**Household income**	**Potential Affect on Housing Demand**

Baby boomers
Age in 2010
46 to 65 years old
Age in 20300
66 to 85 years old
	Baby boomers are the fastest growing segment of Lane County's population.
	• People over 65 years are forecast to grow from 13% of Lane County's population in 2000 to 21% in 2030.
	• Growth in people over 65 years old in Lane County will result in growth of nearly 47,000 people in this age group in Lane County or 44% of population growth over the 2000 to 2030 period.
		Eugene's older householders are more likely to be homeowners.
		• Homeownership peaks for householders 45 to 74. More than 70% of householders 45 to 74 in Eugene are homeowners
		• Homeownership begins to decrease for households over 75 years old. About 66% of householders over 75 in Eugene are homeowners.
		• About 67% of people over 65 years live in a single-family house (either detached or attached), with 54% of people over 75 years living in a single-family house.
		• About 20% of people over 65 live in a multifamily unit.
		• A majority of people over 45 years old express an interest in remaining in their home or in their community as long as possible.[7]
			Household size decreases with age after age 65 in Eugene.
			• About 56% of households 65 to 74 have two or more persons.
			• About 43% of households 75 years and older have two or more persons.
			• More than one-quarter of households 65 years and older are single-person households.
			• Growth in households 65 years and older will result in growth in single-person households.
				Eugene's household income peaks around age 55.
				• Household income decreases after age 65. About 60% of Eugene's households over 65 had income of less than $50,000, compared with 45% of households 45 to 64.
				• Households with householders over 65 years have a lower than average household income, at about 80% of Eugene's median household income.
				• Lower income does not necessarily result in greater problems with housing affordability or lower homeownership rates for people over 65 years because:
				  • Nearly three-quarters of the lowest income householders (making less than $20,000 in the year 2000) over 65 were homeowners.
				  • Some householders over 65 have paid off their mortgage. For households who have paid off their mortgage, lower income does not necessarily result in lower disposable income or affect their ability to continue to own their home.
				  • Older households may have more accumulated wealth, such as the value of their house or investments.
					The major impact of the aging of the baby boomers on demand for new housing will be through demand for housing types specific to seniors, such as assisted living facilities. Baby boomers will make a range of housing choices in Eugene:
					• Many will choose to remain in their houses as long as they are able.
					• As their health fails, some will choose to move to group housing, such as assisted living facilities or nursing homes.
					• Some may downsize to smaller single-family homes (detached and attached) or multifamily units. These will be a mixture of owner and renter units.[8]
					• Some may choose to move to retirement or age-restricted communities.

		Affect of trends on household choice			
	Demographic trends	**Age of household head**	**Household size and composition**	**Household income**	**Potential Affect on Housing Demand**
Echo boomers **Age in 2010** **15 to 28 years old** **Age in 2030** **35 to 48 years old**	Echo boomers are one of the fastest growing segments of Lane County's population • By 2030, the State projects that there will be nearly 140,000 people 25 to 49 years in Lane County, up from nearly 115,000 people in 2000. • Growth in people 25 to 49 years year old will result in growth of about 25,000 people in this age group or 24% of total population growth over the 2000 to 2030 period.	• About 95% of people under 25 years old and 71% of people 25 to 34 years old were renters. • Homeownership rates increase for householders 35 to 44 years old; 55% of these households are owners. • Nearly three-quarters of people 15 to 24 years live in a multifamily unit, compared with 44% of people 25 to 34 years or 25% of people 35 to 44 years.	Household size increases slightly until age 44. • More than 70% of households between age 15 and 44 years have two or more persons. • About 30% of households between 15 to 24 years are single-person households, compared with 22% of households 35 to 44 years. • Seventy-seven percent of households with two or more persons younger than age 34 are renters.	Younger households have lower income on average. • About two-thirds of households under 25 years (which includes college students) had income less than $25,000. About 56% of households between 25 and 44 had income of less than $50,000. • About 78% of householders under 25 years have an income of $25,000 or lower, in comparison 26% of all of Eugene's households have income of $25,000 or less. • Households between 25 and 44 years have higher than average income, at about 115% of Eugene's median household income. • Younger households generally have less accumulated wealth, such as housing equity. • More than 80% of younger households with income more than $45,000 (in 2000) were homeowners, with more than three-quarters owning single-family detached dwellings.	Growth in echo boomers will result in increased demand for all housing types in Eugene. Some recent research hypothesizes that echo boomers may make different housing choices than their parents as a result of the on-going recession and housing crisis. They suggest that echo boomers will prefer to rent and will prefer to live in multifamily housing, especially in large cities.[9] Other studies suggest that the majority of echo boomers' housing preference is to own a single-family home.'[10] Our conclusion based on review of recent research is that it seems unlikely that the majority of echo boomers will make fundamentally different housing choices than previous generations as they age and have families. • It seems likely that echo boomers are likely to choose to rent when they are under 30 years, most frequently a multifamily unit. This choice may be made from preference but is likely to be necessitated by lower income. • As they establish their careers, their income increase, and they form families, it seems likely that a large share of echo boomers in Eugene will choose to live in an owner-occupied single family house. Some echo boomers may prefer to rent or own a multifamily unit in or near Eugene's downtown. • Recent articles suggest that echo boomers who prefer single-family units may prefer (or only be able to afford) smaller single-family units. • Eugene is a suburban market, with urban amenities that may appeal to echo boomers who prefer not to live in a large city. Eugene itself does not have distant suburbs but nearby smaller cities have filled the role of distant suburbs for Eugene. Echo boomers may choose to live in Eugene's suburban neighborhoods, rather than in nearby smaller cities, if housing in Eugene is affordable.

[9] Examples of such research include *Housing in America: The New Decade* from the Urban Land Institute or *The Rise of the Non-Traditional Household* from Multifamily Trends.

[10] A national survey of Echo Boomers in 2010 shows that: two-thirds of Echo Boomers expect to own their home by 2015, that nearly two-thirds expect to live in a single-family home, one-quarter expects to live in an apartment or condominium. These results are from the Urban Land Institute study *Generation Y: America's New Housing Wave*.

		Affect of trends on household choice			
	Demographic trends	**Age of household head**	**Household size and composition**	**Household income**	**Potential Affect on Housing Demand**
Growth of immigrants and change in ethnic composition	Immigrants are a growing segment of Eugene's population. At the same time, Eugene is becoming more ethnically diverse, with growth in the Hispanic and Latino population (both from immigration and from current residents in Eugene). • About 73% of Lane County's population growth between 1990 and 2009 was the result of in-migration to the County. • Eugene became more ethnically diverse, with Hispanic and Latino population growing by more than 250% between 1990 and 2007, an addition of 7,900 Hispanic or Latino residents. • Eugene became more racially diverse between 1990 and 2007, with the doubling of the population of Asian and Pacific Islanders, from nearly 4,000 people in 1990 to more than 8,000 people in 2008.	Hispanic and Asian populations in Eugene have a different age structure than Eugene's overall population: • About 68% of Eugene's population is between age 18 to 64 years, with 18% younger than 18 years and 14% older than 65 years. • Asian residents of Eugene are less likely to be over 65 years. About 79% of Asians are 18 to 64 years, 14% are younger than 18 years and 7% are older than 65 years. • Hispanic residents of Eugene are more likely to be younger. About 57% of Hispanics are 18 to 64 years, 39% are younger than 18 years and 4% are older than 65 years. The following national housing trends are likely to apply to immigrant households in Eugene: • Immigrant households are generally younger than the household average in the U.S. • About 55% of immigrant households own their homes, compared with 76% of native-born households. Reasons for this include: (1) immigrants are younger than the average of the population, (2) some immigrants may expect their stay in the U.S. will be temporary, and (3) immigrant households are more likely to have a lower income and have no established credit record in the U.S.	Hispanic households in Eugene are more likely to have children and to have more persons per household and less likely to be homeowners. • Nearly half of Hispanic households in Eugene have children under 18 years, compared with about one-third of white non-Hispanic households • About 17% of Hispanic households had more than one occupant per room, compared with 2% of all households in Eugene. • Hispanic households in Eugene live in single-family houses (detached and attached) with about the same frequency as non-Hispanic households, with about two-thirds of households living in single-family dwellings. • About one-quarter of Hispanic households are owners, compared with an ownership rate of a little more than 50% for all households in Eugene.	Hispanic households in Eugene have lower than average income. • Immigrant households generally have lower income, in part as a result of their relatively young age and as result of generally lower educational achievement. • Hispanic households in Eugene have lower than average income, with household income at 97% of Eugene's median ($39,640) and family income at 94% of Eugene's median ($57,526)	Growth in immigrants may result in increased demand for multifamily housing in Eugene. • Housing affordability is a problem for many households in Eugene. Affordability is likely to be a more common problem for immigrants, especially recent immigrants, because immigrants have lower income on average. • Recent immigrants are likely to choose multifamily housing, in part because that is what they can afford. • Homeownership increases the longer immigrants stay in the U.S. Longer-term immigrants may become home owners, depending on their ability to afford homeownership. • Homeownerships increase for second-generation immigrant households. • Immigrants associated with the University of Oregon, either as students or faculty/staff, may choose to rent a home if they are in Eugene temporarily and may choose to purchase a home if they will be in Eugene over a long period of time.

APPENDIX C: Market Trends Affecting Housing Markets in Bend

The report that follows was prepared primarily by Leland Associates, under contract to the Angelo Planning Group, for the City of Bend and presented in a memorandum titled "Demographic Characteristics and Trends that will Affect Housing Demand in Bend for the 2008-2028 period" (July 2014). It is another example of an application of thinking about changing market conditions to decisions about UGBs in Oregon.

Memorandum

July 29, 2014

To:	Residential Lands Technical Advisory Committee
Cc:	Bend Staff
From:	APG Consulting Team
Re:	Demographic Characteristics and Trends that will Affect Housing Demand in Bend for the 2008-2028 period

This memorandum provides a summary of demographic characteristics and changes in Bend's population that will affect Bend's housing market over the 2008 to 2028 period. The questions addressed in this memorandum are:

- What are the key demographic changes and trends that may affect Bend's housing market over the 2008-2028 planning period?
- What are the implications of these demographic trends for Bend's housing market, including demand for types of housing, housing tenure, and location of housing in Bend?

The purpose of this analysis is to address issues in the remand related to Bend's proposed mix and density of new housing. These questions will be discussed at the first Residential Lands Technical Advisory Committee (TAC) meeting.

In the 2005 housing needs analysis, Bend proposed that 65% of new housing would be single-family detached housing types and 35% would be multifamily housing types. The remand required Bend to make stronger linkages between forecast growth, the demographic characteristics of current and new residents, the capacity of those residents/households to pay for housing at specific price and rent levels, and housing types that will meet that need.

This memorandum presents information about demographic and other trends to describe the linkages between forecast growth, the demographic and socioeconomic characteristics of Bend's households (current and future), and housing need. The memorandum is organized into the following sections:

- **Demographic and socioeconomic factors affecting housing choice** describes the broad, often national, trends that affect housing choice, presents information about these trends in Bend, and discusses the implications of these trends for housing demand and need in Bend. The information summarized in this section is presented in greater depth in

the full Housing Needs Analysis report, which will be available later in the project. The citations for the analysis in this section are presented as endnotes, at the very end of the memorandum.

- **Appendix A. Research about demographic changes and implication for future housing mix** presents information from the academic literature about demographic and socioeconomic trends that affect housing demand and need the implications of these trends on future housing demand. Appendix presents key findings from the literature, organized by key demographic trend, as well as links to key articles or reports available for optional additional reading.

DEMOGRAPHIC AND SOCIOECONOMIC FACTORS AFFECTING HOUSING CHOICE

In the context of housing markets, past and current housing conditions demonstrate *the intersection of the forces of housing supply and demand at a price of housing.* Housing demand is derived from the characteristics of households that create or are correlated with *preferences* for different types of housing, and *the ability to pay* (the ability to exercise those preferences in a housing market by purchasing or renting housing; in other words, income or wealth).

One way to forecast housing demand is with detailed analysis of demographic and socioeconomic variables. If one could measure housing demand for each household, one might find that every household has a unique set of preferences for housing. But no city-wide housing analysis can expect to build from the preferences of individual households. Most housing market analyses that get to this level of detail describe *categories* of households on the assumption that households in each category will share characteristics that will make their preferences similar.

The main demographic and socioeconomic variables that may affect housing choice include: age of householder, household composition (e.g., married couple with children or single-person household), size of household, ethnicity, race, household income, or accumulated wealth (e.g., real estate or stocks).

The research in this memorandum is based on numerous articles and sources of information about housing. Appendix A presents an analysis of our research of the academic literature about the relationship between demographics and housing demand. The literature about housing markets identify the following household characteristics as those most strongly correlated with housing choice: age of the householder, size of the household, and income:

- **Age of householder** is the age of the person identified (in the Census) as the head of household. Households make different housing choices at different stages of life. For example, a person may choose to live in an apartment when they are just out of high school or college but if they have children, they may choose to live in a single-family detached house.
- **Size of household** is the number of people living in the household. Household size is related to household composition, which describes the age and relationships of people living within the household. Younger and older people are more likely to live in single-person households and people in their middle years are more likely to live in multiple person households (often with children).
- **Income** is the income from all people in the household who have income. Income is probably the most important determinant of housing choice. Income is strongly related to the type of housing a household chooses (e.g., single-family detached, duplex, or a building with more than five units) and to household tenure (e.g., rent or own). A review of census data that analyzes housing types by income in most cities will show that as income increases, households are more likely to choose single-family detached housing types. Consistent with the relationship between income and housing type, higher income households are also more likely to own than rent.

Trends affecting housing choice in Bend

The national demographic trends that will affect housing demand across the U.S., as well as Oregon and Bend are:

- **Aging of the baby boomers.** By 2030, the youngest baby boomers will be over 65 years old. By 2030, people 65 years and older are projected to account for about 20% of the U.S. population, up from about 12% of the population in 2000.[1]
- **Growth in Echo Boomers.** Echo Boomers are a large group of people (Generation Y) born from the late-1970's to early 2000's, with the largest concentration born between 1982 and 1995. By 2030, Echo Boomers will all be older than 35 years old, with the oldest Echo Boomers over 50 years old. The Echo Boomers will form households and enter their prime earnings years during the 20-year planning period.[2]
- **Growth of Hispanic and Latino population.** One of the fastest growing groups in the U.S. will be the Hispanic and Latino population. By 2030, Hispanic and Latino population is projected to account for about 20% of the U.S. population, an increase from about 13% of the U.S. population in 2000. Growth in the Hispanic population will be the result of natural increase (more births than deaths) and immigration from other countries.[3]

Tables 1 through 3 describe the changes in these demographic and socioeconomic trends and their potential affect on housing choice in Bend over the 2008-2028 planning period. These tables discuss the characteristics of the householder, which is the person identified (by the household) as the head of household in the Census. Data in these tables is from the U.S. Census' 2007 American Community Survey, except where noted.

Table 1. Baby boomers (Age in 2008: 42 to 61 years old; Age in 2028: 62 to 81 years old)[4]

Demographic trends		Baby boomers are the fastest growing segment of Deschutes County's population. • People over 65 years are forecast to grow from 13% of Deschutes County's population in 2000 to 24% in 2030.[5] • Growth in people over 65 years old in Deschutes County will result in growth of nearly 40,000 people in this age group in Deschutes County or 35% of population growth over the 2000 to 2030 period.[6]
Effect of trends on household choice	**Age of household head**	Bend's older householders are more likely to own their home. • Homeownership peaks for householders 35 to 64. More than 50% of householders 35 to 64 in Bend are homeowners. • Homeownership begins to decrease for households over 65 years old. Twenty percent of householders over 75 in Bend are homeowners. National studies about the housing preferences of older residents show that the majority express an interest in remaining in their home or in their community as long as possible, a trend that increases with age.[7] • Between about 65% and 80% of people over 65 would like to stay in their homes as long as possible.[8] • The Baby Boomers who want to move generally want to live in a typical community setting, with a mixture of people of different ages, and in a setting where recreational amenities are available.[9] • Of people over 65 who expect to move in the next five years, a smaller proportion of these households expect to live in a single-family home and to be homeowners, compared with households of all ages who expect to move in the next 5 years.[10] • Seniors who moved recently were much more likely to have moved into a smaller home, compared to households of all ages who moved recently.[11]
	Household size and composition	Household size decreases with age after age 65 in Bend. • More than 6% of households 65 years and older were single-person households in Bend. • Growth in households 65 years and older will result in growth in single-person households.

	Household income	Bend's household income peaks around age 45.
		• Household income decreases after age 65. About 50% of Bend's households over 65 had income of less than $50,000, compared with 36% of households 45 to 64.
		• Households with householders over 65 years have a lower than average household income, at about 95% of Bend's median household income, compared with ages 45 to 64 years with 117% of Bend's median household income.
		• Lower income does not necessarily result in greater problems with housing affordability or lower homeownership rates for people over 65 years because:
		  • Some householders over 65 have paid off their mortgage. For households who have paid off their mortgage, lower income does not necessarily result in lower disposable income or affect their ability to continue to own their home.
		  • Older households may have more accumulated wealth, which could include assets like the value of their house or investments.

	Potential effect on housing demand	The major impact of the aging of the baby boomers on demand for new housing will be through demand for housing types specific to seniors, such as assisted living facilities. Baby boomers will make a range of housing choices in Bend: • Many will choose to remain in their houses as long as they are able. • Those that do move are more likely to move into smaller homes, attached homes, or apartments and are more likely to rent than other households headed by other generations. • Some may downsize to smaller single-family homes (detached and attached) or multifamily units. These will be a mixture of owner and renter units. Nationally, of the 20% Baby Boomers that expect to move, 11% plan to move to an apartment, 16% to attached housing, 65% to single family housing, and 6% to a mobile home.[12] • As their health fails, some will choose to move to group housing, such as assisted living facilities or nursing homes.

Table 2. Echo Boomers (Age in 2008: 11 to 24 years old; Age in 2030: 31 to 44 years old)[13]

Demographic trends		Echo Boomers are one of the fastest growing segments of Deschutes County's population • By 2030, the State projects that there will be nearly 70,000 people 25 to 49 years in Deschutes County, up from nearly 43,000 people in 2000.[14] • There will be an increase of about 27,000 people between the ages of 25 to 49 years. This group will account for 24% of total population growth over the 2000 to 2030 period.[15]
Effect of trends on household choice	**Age of household head**	Housing preferences shift for householders as they get older. • Under 25 years old: 94% were renters in Bend • 25 to 34 years old: 63% were renters in Bend • 35 to 44 years old: 43% were renters in Bend • 82% of single-family housing detached housing in Deschutes County was owner-occupied and 95% of multifamily dwellings were renter-occupied
	Household size and composition	Household size increases until age 44 in Bend. • Eighty-five percent of households in Bend between ages 15-34 years have two or more persons. • About 15% of Bend's households between 15 to 34 years are single-person households, compared with 26% of households 35 to 64 years. • Seventy-three percent of households with two or more persons younger than age 34 are renters in Bend.
	Household income	Younger households have lower income and homeownership rates on average. • About 40% of households under 25 years had an income of less than $25,000 in Bend. About 40% of households between 25 and 44 had income of less than $50,000. • Younger households generally had less accumulated wealth, such as housing equity. • Households between 25 and 44 years had higher than average income, at about 112% of Bend's median household income. • Higher incomes generally correlate with homeownership. The median income for homeowners in Bend was $72,800 (in 2007), compared with $43,200 for renters.
	Potential effect on housing demand	Growth in Echo Boomers will result in increased demand for all housing types in Bend. Recent research hypothesizes that Echo Boomers may make different housing choices than their parents as a result of the on-going recession and housing crisis. They suggest that Echo Boomers will prefer to rent and will prefer to live in multifamily housing, especially in large cities. Other studies suggest that the majority of Echo Boomers' housing preference is to own a single-family home. Our conclusion based on review of recent research is that it seems unlikely that the majority of Echo Boomers will make fundamentally different housing choices than previous generations as they age and have families, but their housing choices may be constrained by what they can afford due to student loan debt, and prolonged entry into higher paying positions due to the Baby Boomers putting off retirement. • Echo Boomers are more interested in living within a city (including in a downtown area) or a suburb closer to a city than prior generations.[16] • Echo Boomers are more willing than other age groups to choose to live in a community with a wider range of housing and denser housing, where it is easier to talk to work or nearby urban amenities, and where transportation by automobile is less common.[17] • Echo Boomers are likely to choose to rent and are more likely to rent a multifamily unit than older households. This choice may be made from preference but is likely to be necessitated by lower income. • Echo Boomers who prefer single-family units may prefer, or only be able to afford, smaller single-family units.[18] • As they establish their careers, their incomes increase, and they form families, it seems likely that a large share of Echo Boomers in Bend will choose to live in an owner-occupied single family house. Some Echo Boomers may prefer to rent or own a multifamily unit in or near Bend's downtown. • Bend is a suburban market, with urban amenities that may appeal to Echo Boomers who prefer to live in a smaller city but in an area with a wide range of access to outdoor recreational activities. Bend itself does not have distant suburbs but nearby smaller cities have filled the role of distant suburbs for Bend. Echo Boomers may choose to live in Bend's suburban neighborhoods, rather than in nearby smaller cities, if housing in Bend is affordable.

Table 3. Growth of Latino and Hispanic Population[19]

Demographic trends		Bend is becoming more ethnically diverse, with growth in the Hispanic and Latino population (both from immigration and from current residents in Bend). • Bend became more ethnically diverse, with Hispanic and Latino population growing by more than 100% between 2000 and 2007, an addition of 2,459 Hispanic or Latino residents. • Nationally, growth in Hispanics is driving population growth, both from immigration and from natural increase of Hispanics living in the U.S.[20]
Effect of trends on household choice	**Age of household head**	The Hispanic population in Bend has a different age structure than Bend's overall population. • In 2007, median age for Hispanics (29 years) was lower with the median age for the total population (35 years) in Bend. Nationally, growth in Hispanic population between 2005 and 2015 will help off-set decreases in white householders between the ages of 30 and 49.[21]
	Household size and composition	Nationally, Hispanics households with children grew at a faster rate than other minority populations between 1995 and 2005, resulting in increased demand for housing to accommodate families.[22] • In 1999, 51% of Hispanic households had children, compared with 33% of all households.[23] Hispanic households in Bend are more likely to be larger and less likely to be homeowners. • In 2000, the average size of Hispanic households in Bend was 3.4 persons per household, compared with an average of 2.4 persons per household for all households in Bend.[24] • Hispanic households in Bend live in single-family houses (detached and attached) less often than non-Hispanic households. About one-third of Hispanic households live in single-family dwellings, as compared to about 75% of non-Hispanic households. • About one-third of Hispanic households are homeowners, compared with an ownership rate of a little almost 60% for all households in Bend. In 2007, Oregon's Hispanic households were more likely to be younger homeowners. Seventy-two percent of Hispanic homeowners in Oregon were younger than 45 years old, compared with 38% of non-Hispanic householders[25].
	Household income	Hispanic households in Bend have lower than average income. • Hispanic households in Bend have lower than average income, with household income at 96% of Bend's median ($56,053) and family income at 79% of Bend's median ($66,740). Immigrants generally have lower income than U.S.-born workers but income increases for immigrants the longer they have been in the U.S. and through successive generations. • First generation immigrants may take several decades to earn sufficient incomes to become homeowners[26] and to have income comparable to a person born in the U.S., of a similar age and education. This is true of Hispanic immigrants.[27] • Income generally increases for second-generation immigrants, who have higher educational attainment.[28] This is true of recent Hispanic immigrants.[29] • In 2012, the national median household income for first generation Hispanic households was $34,600, compared to $48,400 for second-generation Hispanic households, compared with the U.S. average of $58,200.[30] Hispanic households suffered steeper drops in household wealth than non-Hispanic white households during the recession, which may affect their ability to own homes, although the desire for homeownership remains strong.[31]
	Potential effect on housing demand	Growth in Hispanic and Latino households may result in increased demand for multifamily and single-family housing in Bend. • Affordability is likely to be a more common problem for Hispanic and Latino households, especially recent immigrants, because they have lower income on average. • Homeownership increases the longer immigrants stay in the U.S. Longer-term first generation immigrants and second-generation immigrants may become home owners, depending on their ability to afford owning a home.[32] • Hispanic population with lower income is more likely to choose lower-cost housing, such as multifamily housing because that is what they can afford. • Hispanics are more likely to rent but when they are homeowners, they are more likely to live in a more urban area, compared with white households.[33] • Growth in Hispanics will increase demand for smaller "starter homes" and entry-level apartments.[34]

Conclusions about how demographic trends may affect housing choice

Identifying future housing need based on expected demographic changes requires making qualitative assessments of the future housing market. Demographic changes are likely to affect housing in Bend's housing market in the following ways over the next 20 years. The future housing mix will probably look different than the recent past. Based on the future demographic trends, the most pressing need is to increase the range (both in size and in pricing) of housing products in walkable neighborhoods.

- **Recession may have delayed some effects of demographic shifts.** The impacts of major demographics shifts are being delayed due to the financial effects of the recession, however, substantial housing demand shifts are underway that will change land use patterns. Baby Boomers are working longer and may not be moving because of a loss of home equity. Echo Boomers have taken on college debt, are having a hard time getting a foothold in the workforce, and are therefore delaying household formation. The extended effects of the recession will mean that more households are renting for an extended period of time before being able to make a home purchase, or will only be financially capable of purchasing a smaller less-expensive home. In summary, this delay means more near-term demand for rental housing or smaller less-expensive ownership housing.

- **Slower demand for large-lot single-family housing.** Gen X (the generation born after the Baby Boomers and before the Echo Boomers), is currently in its prime family raising years, and the demographic group most likely to need larger single-family homes. Gen X is much smaller than either the Baby Boomer or Echo Boomer generations. As the Baby Boomers move out of their existing single-family homes, there will be fewer households to take them over. In recent years, Bend has been attracting retirees who are purchasing (and, in some cases, renting) available single-family dwellings.

  In the future, growth of Echo Boomers and shrinking of the Baby Boomer generation, may slow demand for new large-lot single-family housing. The Echo Boomer's preferences are generally for more walkable communities and they are willing to accept smaller homes in closer proximity to amenities. In addition, Echo Boomer's have lower income and higher debt.

  However, much of Bend's growth results from in-migration of people from outside of Central Oregon, many of whom are attracted to Bend's access to outdoor amenities, open space, and rural quality of life that Bend offers. Interviews with Bend's development community noted that demand for single-family housing that offers ample parking and storage for outdoor equipment is strong. They also noted that incoming retirees are pricing out the second-home move-up market for existing families.

  All of these factors contribute to continued demand for large-lot single-family detached housing but suggest that demand for this type of housing is likely to slow between the 2008 to 2028 period.

- **Demand will increase for a wider range of housing types.** Most of the evidence suggests that the bulk of the change will be in the direction of smaller average house and lot sizes for single-family housing. An aging population, increasing housing costs, and other variables are factors that support the conclusion that the future housing supply will include smaller and less expensive units and a broader array of housing choices. A substantial portion of Bend's residents will live in attached housing, such as townhouses, cottage housing, duplexes, garden apartments, or urban apartments. While most households may prefer to own their home, a growing share of households will be renters, either from choice (e.g., Baby Boomers who prefer to rent smaller units) or by economic necessity. Demand for these uses will be particularly high in close-in areas near Bend's commercial and recreational amenities.

    - **Demand for a wider range of housing types by retirees.** Older households tend to move less frequently than younger households, and a large majority would like to age in place—a desire that grows stronger with age. Being near family, friends, and social organizations in walkable neighborhoods also becomes increasingly important with age. Of those that have moved recently, a third of Baby Boomers and half of the generation older than Baby Boomers have moved to smaller housing units. Those Baby Boomers who do move may be more likely to choose homes in locations with more amenities located near friends and family. Interviews with members of Bend's development community indicated that small lot, cluster, or cottage housing might be appropriate housing types to meet this need.

    - **Housing for families will be in demand.** The two largest growing parts of Bend's population are Echo Boomers and Hispanic households. Echo Boomers will be entering the phase of life when they form families and have children. In addition, Hispanic households have larger than average household size because they live in multi-generational households and have a larger number of children on average. Growth in households with families will drive need for housing with sufficient space for a family.

    - **Housing affordability will continue to be an issue.** More than one-third of Bend's households were cost burdened in 2007. A household is considered "cost-burdened" if they pay 30% or more of their gross household income on housing costs. Bend's rate of cost burden shows that a substantial proportion of Bend's households cannot afford housing in Bend. Interviews with members of Bend's development community suggest a shortage of homes priced for first-time homebuyers, many workers in Bend live in nearby communities because affordable housing is in short supply in Bend, and that the demand for small-lot housing with nearby amenities is increasing. The interviewees also indicate that, while there is demand for urban housing products (particularly rental apartments), the wages in Bend's service and tourism economy may not allow workers to afford rents sufficient to pay for development of these types of housing. For two of the fastest

growing demographics in Bend, the Echo Boomers and Hispanic and Latino population, affordability is more likely to be a barrier to homeownership or higher-cost rental housing.

- **Location of housing will be increasingly important.** The location of housing is becoming increasingly important, with increased demand for housing in walkable neighborhoods near retail and other amenities. Where they can afford it, the Echo Boomers generally prefer housing in walkable areas with retail and other amenities nearby, rather than housing in more suburban areas or in outlying cities. Some Baby Boomers who are downsizing are also choosing to live in similar walkable areas.

- **Design of housing and neighborhoods is important.** Well-designed multifamily and compact single-family located in a desirable neighborhood can provide opportunities for a wider range of housing options. Consumers are more likely to make the tradeoff of a smaller lot and home size when neighborhood parks, schools, and retail amenities are within walking distance. Therefore, there will be steady demand for multifamily housing in close-in locations proximate to Bend's downtown amenities and jobs.

APPENDIX A: RESEARCH ABOUT DEMOGRAPHIC CHANGES AND IMPLICATIONS FOR FUTURE HOUSING MIX

This section provides greater detail on the research conducted on the demographic trends that are summarized in the tables above. For further reading on a given topic, see the relevant report listed in the "Materials for Further Reading" section below.

Key Findings by Topic

Aging Boomers

Question: Are aging Baby Boomers downsizing or staying put?

- **Some are downsizing.** "Thirty-two percent of Americans have moved in the past five years. More than half of the gen Yers report moving, and 31 percent of gen Xers have moved. Baby boomers and the oldest Americans are the least likely to have moved…Baby boomers and war babies/members of the silent generation are the most likely to have downsized in their most recent move. In fact, 50 percent of the oldest Americans report that their new home is smaller than their old one. One-third of baby boomers report moving into a smaller home, and 44 percent say they have moved into a larger home."[1]

Table 1. Recent Movers Change in Home Size

	Recently moved?		Recent Change in Home Size			Expected Homeownership Status	
	Yes	No	Larger	Smaller	Same	Own	Rent
All Adults	32%	**67%**	**48%**	**27%**	**25%**	**73%**	**25%**
Gen Y	53%	47%	48%	25%	27%	69%	31%
Gen X	31%	69%	59%	20%	20%	81%	16%
Baby Boomers	20%	80%	44%	33%	22%	79%	20%
War babies/silent generation	19%	80%	24%	50%	25%	55%	36%

Source: ULI America in 2013, Leland Consulting Group

- **Preference for staying put increases with age.** The AARP conducted a housing preference survey of people age 45 or older and found that 73 percent of them strongly agreed with the statement, *"what I'd really like to do is stay in my current residence for as long as possible".* This preference increases with age. Seventy-eight percent of the respondents over 65 strongly agreed with the statement, whereas only 72 percent of those 50-64 and 60 percent of those age 45-49 strongly agreed with the statement.[2]

[1] *American in 2013 Focus on Housing and Community, Urban Land Institute*
[2] *"Home and Community Preferences of the 45+ Population" November 2010, AARP, Keenan Teresa A.*

"The aging of the population poses a different policy challenge. Most seniors prefer to age in place. While many of these households are currently well housed, their needs will change over time. Meeting those needs will require modifications to existing homes, the expansion of transportation networks and supportive services, and additions to the housing stock aimed specifically at the senior population. Many older Americans are also heading into their retirement years with little financial cushion and may find it difficult to find suitable housing that fits within their budgets. Expanding the range of housing options available to the country's growing senior population will require concerted efforts from both the public and private sectors."[3]

"Despite their shrinking households and declining labor force participation, Boomers do not appear to be altering their housing consumption by abandoning their detached single-family homes…In fact, contrary to the downsizing perception, the percent of Baby Boomers residing in single-family detached homes was at least as high in 2012 as at any time since the onset of the housing crisis. Even the oldest members of the Boomer generation, who have largely exited the childrearing stage and begun to retire in large numbers, show no major shift away from single-family residency….One likely mobility constraint is the substantial decline in Boomers' home values during the housing bust. Between 2006 and 2012, the average value of an owner-occupied single-family detached home with a Boomer householder declined by 13 percent."[4]

- **Being near friends, family, and social organizations grows increasingly important with age.** An AARP Housing Preference survey of householders 45 years and older, found that "Roughly two-thirds of respondents agreed that they want to stay in their home because *I like what my community has to offer me."* In contrast, roughly one-quarter agreed with the statement that they want to stay in their home because *"I cannot afford to move."…*When asked about seven different community aspects and the level of importance they have for them, two-thirds of respondents said that being near friends/and or family and being near where one wants to go (ie., grocery stores, doctor's offices, the library) is *extremely* or *very important* to them. Roughly half noted that being near church or social organizations or being somewhere where it's easy to walk are *extremely* or *very important* to them, while somewhat fewer said the same thing about being near good schools or being near work. Only about one-fifth of respondents report that being near transit (bus or rail) was *extremely* or *very important* to them."[5]

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[3] *Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013*
[4] *"Are Aging Baby Boomers Abandoning the Single-Family Nest?" June 12, 2014. Fannie Mae Housing Insights, Volume 4, Issue 3.*
[5] *"Home and Community Preferences of the 45+ Population," Keenan Teresa A. November 2010, AARP*

Table 2. Importance of Community Aspects for Staying in One's Community

Extremely or Very Important	Age		
	45-49	50-64	65+
Being near friends and/or family	60%	64%	71%
Being near where you want to go	68%	62%	70%
Being near church or social organizations	42%	43%	57%
It's easy to walk	46%	43%	51%
Being near good schools	64%	38%	31%
Being near work	43%	36%	21%
Being near transit	16%	22%	21%

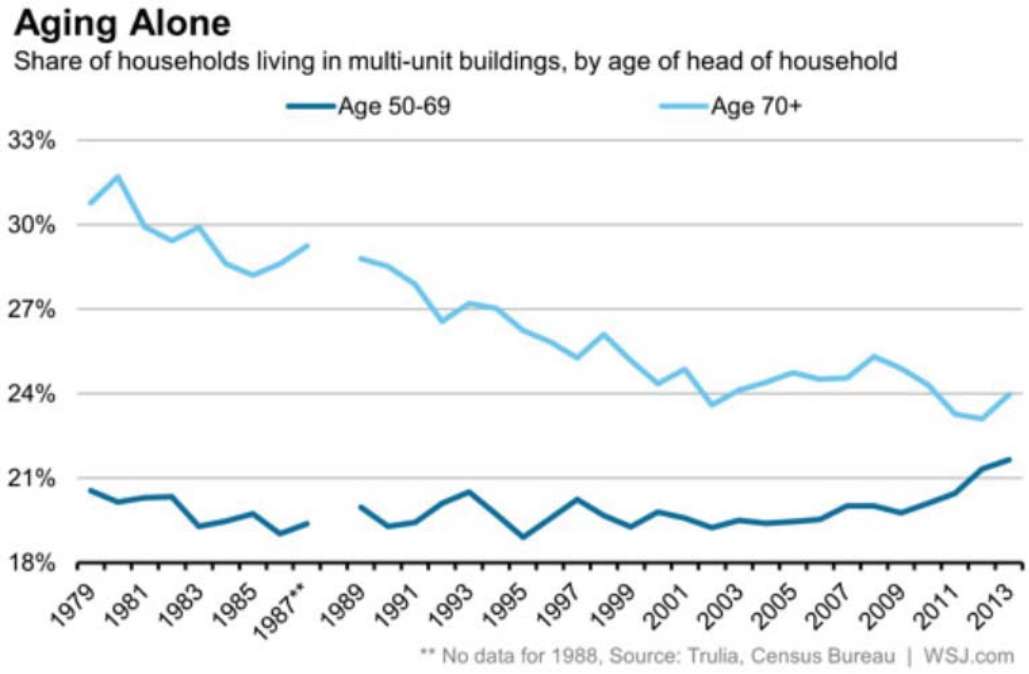
Source: AARP

- **Retiring later.** "To put these trends in perspective, incomes among households under age 35 are back to 1990s levels. The recession had an even bigger impact on households between the ages of 35 and 54, whose incomes are now lower than those of similarly aged households in 1971. Now in what are typically the peak earning years, 45–54 year-olds have instead seen their real median incomes fall 6.0 percent from what they made ten years earlier (when they were aged 35–44). Over the next ten years, these households will be approaching typical retirement age, but the loss of income at such a critical point in their careers will make it difficult for many to save enough to stop working."[6]
- **Affordability for seniors.** "Affordability is a serious problem for seniors, especially for renters. According to a U.S. Department of Housing and Urban Development (HUD) report to Congress earlier this year, 1.33 million elderly renters (where the householder or spouse is age 62 or over, with no children under 18 present) had "worst case" housing needs in 2009. This meant that they earned less than half their metropolitan area's median income, received no government housing assistance and either paid more than half their income for rent, lived in severely inadequate housing, or both. Compared to 2007, the number of older renters in this category had increased by 120,000 (10 percent) – a change that the HUD report attributes to fallout from the foreclosure crisis and recession, as shrinking incomes drove increased competition for already scarce affordable housing. Seventy percent of senior renters spend at least 30 percent of their income on housing costs. Senior homeowners are not immune from affordability problems either: about three in 10 senior homeowners spend at least 30 percent of their income on housing and 17 percent pay at least half their income. Even seniors who own their houses free and clear face rising energy costs and, in some locations, rising property taxes."[7]

[6] *Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013*
[7] *Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center*

- **Housing released by seniors.** "Some seniors occupy newly constructed housing (so the total release of housing exceeds the net release). In 2009, for example, housing built since 2000 accounted for about seven percent of owner-occupied dwellings occupied by seniors and 10 percent of rentals. Seniors' consumption of new housing may rise in the next two decades as Baby Boomers – whose wealth and income are higher than that of today's retirees and who are entering retirement in vastly larger numbers – seek new options to downsize, accommodate disabilities or live in different types of neighborhoods. Just as demand created by Baby Boomers spurred new apartment construction in the 1970s, the sheer size of the Baby Boom generation could cause a dramatic increase in the construction of senior-accessible housing over the coming decades. Baby Boomers' ability to move into new housing, however, will depend on where, when and for how much they will seek to sell their current residences…..Despite potential increases in new construction, most of the houses that seniors will release in coming years were built when energy was inexpensive, nuclear families were the rule, incomes were increasing for most Americans, and mortgages were generally predictable and easy to obtain. Most observers expect the next 20 to 30 years to depart from this historic picture, with more expensive energy, growing diversity in race, ethnicity and in household structure, and more intense international economic competition. All of these factors will likely reduce demand for large single-family homes on large lots far away from established centers of employment and entertainment."[8]
- **Fewer elderly living alone in multifamily buildings.** The percent of people 70 years or older that head households in multifamily buildings has been in decline since 1979.[9]

Table 3. Aging Alone



Source: The Wall Street Journal, Trulia, Census Bureau

[8] *Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center*
[9] *"Baby Boomers Aren't (Yet) Downsizing in Droves", Nick Timiraos, June 27, 2014, The Wall Street Journal*

Delayed Millennial Household Formation

Are Millennials putting off housing formation as a short-term response to the recession or are there other underlying factors that will impact their housing decisions much farther into the future?

- **Student debt.** "For today's younger households, student loan debt may make the transition to homeownership more difficult. According to the Federal Reserve Bank of New York, the number of young adults under age 30 with student loan debt outstanding increased by 39 percent between the start of 2005 and the end of 2012, with the average amount rising from $13,300 to $21,400. However, concerns over rising student loan debt often overlook the fact that the trend also affects older households. The increase was even larger among adults in their 30s, with the number of borrowers up 76 percent and average debt climbing from $20,000 to $29,400. Moreover, of the $600 billion increase in student loans outstanding in 2005–12, fully 38 percent was among households over age 40. Since many of these older households already own homes, the sharp rise in student loan debt could affect their ability to meet their mortgage obligations."[10]
- **Diversity and household formation.** "To estimate the magnitude of the demand that Echo Boomers may (or may not) bring to housing markets in the next 20 years, we developed three scenarios. We began with the 1990, 2000 and 2010 Census results and the Census Bureau's national population projections assuming a constant net rate of immigration at 975,000 people per year. Using the observed and projected population series, we computed national rates of household formation and homeownership for people grouped by age cohort (10-year groups starting at age 15) and by race/ethnicity (white non-Hispanic, black non-Hispanic, other non-Hispanic and Hispanic)…The range of estimates in these scenarios can be attributed to different rates of household formation for Echo Boomers. Under the low scenario, people between 15 and 34 years old in 2010 (a span that includes Echo Boomers plus five years of the Baby Bust generation) would form 15.6 million new households between 2010 and 2020. Other cohorts would account for the formation of an additional 5.4 million households over the same time period. The medium scenario would result in 17.1 million new Echo Boomer households and 6.1 million other households. The high scenario, finally, yields 18.8 million new Echo Boomer households and 6.7 million new households from other generations. Because changes in the number of older households are less sensitive to differences in economic assumptions, the decline in older households is more consistent across the three scenarios, ranging from 10.6 million fewer old households in the high scenario to 11.6 million fewer old households in the low scenario."[11]
- **Education.** "Compared to previous generations at the same age, Echo Boomers are more likely to have completed high school, and more than half (54 percent) have at least some college education, compared to 49 percent of people in the Baby Bust generation and 36 percent of Baby Boomers when they were 18 to 28 years old. In terms of educational

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[10] *Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013*
[11] *Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center*

achievement, women of the Echo Boom generation have vaulted far above women of previous generations; in fact, among Echo Boomers, more women than men and more women than in any previous generation have attained a college education…The growth in female educational attainment may also portend higher levels of household formation if it results in greater gender equity and gives women more financial independence. Other factors, however, could inhibit household formation and homeownership. Young adults carry high levels of credit card and student loan debt; even young people who already had formed households had higher debt loads in 2009 than people of the same age 10 years earlier.31 Rates of marriage declined in the 2000s from 8.2 per thousand to 6.8 per thousand.32 Finally, while all households lost wealth during the recession, average household wealth fell well below $10,000 for Hispanic and black households. Considering the diversity of the young population, this reduction in wealth among older adults will reduce the purchasing power of a significant fraction of young people who can no longer count on their parents' housing wealth."[12]

- **Household formation.** "At a basic level, changes in the number of adults and the rates at which adults head independent households determine household growth. On the plus side, the number of adults aged 18 and older rose by 18.1 million from 2005 to 2012 and fully 2.4 million in the past year alone. The echo-boom generation (born after 1985) fueled much of this growth, helping to boost the number of adults in their mid-20s—the group most likely to form new households. But while the young adult population has been growing, the rate at which members of this age group head their own households has declined. As a result, household growth has not kept pace with population growth. Going forward, though, even if today's low household formation rates persist, the aging of the large echo-boom cohort into their 30s will raise household headship rates because of lifecycle effects. Indeed, one out of every two 30–34 year-olds heads an independent household, compared with just one in four 20–24 year-olds. Since household headship rates continue to rise (albeit more slowly) through older adulthood, the rates for the echo boomers will likely increase for years to come."[13]
- **Mobility and homeownership.** "While mobility rates have fallen for nearly all household types, the decline was particularly steep for homeowners that have mortgages. Mobility rates for this group fell from 7.1 percent in 2007 to only 4.9 percent in 2011. The reasons for this short-term drop are numerous and include the lock-in effect of home price declines, falling incomes, fewer new employment opportunities, and tightened credit standards making it more difficult to qualify for a new mortgage Mobility rates are highest among renters and young adults. In 2011, fully 28.8 percent of renter households changed residences, compared with just 4.4 percent of homeowners. Young householders are also more mobile, with rates at 52.7 percent for those under age 25—significantly higher than the 19.7 percent for household heads in the next older age group…The oldest echo boomers are just beginning to swell the ranks of young adult movers. Having more young adults in the population may thus change the composition of housing demand in the coming years, given that younger households are more

[12] *Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center*
[13] *Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013*

likely than older households to move into rentals (82 percent vs. 67 percent) and less likely to move into single-family homes (42 percent vs. 50 percent)."[14]

- **Gen Y has more urban community characteristic preferences.** "Gen Y expresses preferences that differ from those of the other generations in interesting ways. Gen Y is the least likely to value neighborhood safety or space between neighbors, but the most likely to want high-quality public schools, a short distance to work or school, walkability, and proximity to amenities like shopping and transit…Among gen Yers, 54 percent—representing nearly 39 million people—would trade a larger home for a shorter commute. Among all generations, gen Y is the most attracted to living in a neighborhood close to a mix of shops, restaurants, and offices. Sixty-two percent of gen Yers (representing more than 44 million people) prefer this type of mixed-use community over one where shops, restaurants, and offices are farther away. Gen Y is also the only age cohort that shows a preference for living in a neighborhood where there is a mix of housing types. Fifty-nine percent of gen Yers—representing more than 42 million people—would like to live in a community where there is a range of housing. Similarly, 52 percent of gen Yers (representing more than 37 million people) would like to live in a community where there is a range of incomes."[15]

Table 4. Community Characteristics

Importance of Community Characteristics	Homeownership status		By Generation				
Percentage ranking each characteristic 6 or higher in importance on a scale of 1 to 10	Owners	Renters	All Adults	Gen Y	Gen X	Baby boomers	War babies/ silent generation
Neighborhood safety	94%	88%	**92%**	88%	97%	92%	92%
Quality of local public schools	77%	83%	**79%**	87%	82%	74%	68%
Space between neighborhs	75%	68%	**72%**	69%	79%	70%	70%
Short distance to work or school	66%	76%	**71%**	82%	71%	67%	57%
Distance to medical care	68%	65%	**71%**	73%	63%	72%	78%
Walkability	75%	79%	**70%**	76%	67%	67%	69%
Distance to shopping/entertainment	63%	71%	**66%**	71%	58%	67%	69%
Distance to family/friends	59%	70%	**63%**	69%	57%	60%	66%
Distance to parks/recreational areas	63%	64%	**64%**	68%	62%	63%	60%
Convenience of public transportation	44%	67%	**52%**	57%	45%	50%	56%

Source: Urban Land Institute

[14] *Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013*
[15] *American in 2013 Focus on Housing and Community, Urban Land Institute*

Housing choices of Hispanic and Latino households

Does the growing Hispanic population have different housing needs/preferences than the average household and how will this impact Bend's housing supply in the future?

- **Growth in home ownership.** "U.S. Census data over the past 12 years shows that despite suffering significant losses during the recent foreclosure crisis, Hispanics have achieved homeownership gains in all but two of those years. During the same 12-year period, the number of Hispanic homeowners grew from 4.24 million in 2000 to 6.69 million in 2012, a remarkable increase of 58 percent at a time when the rest of the U.S. population saw a net increase of only 5 percent. In 2012, home prices increased significantly in most markets across the country for the first time in half a decade. Hispanic household growth and home purchases were arguably the most important drivers of the housing recover."[16]
- **Recession and home value drop.** "Between 1995 and 2004, rates of homeownership among blacks rose by seven percentage points; among Hispanics, homeownership grew even more quickly – from about 40 percent in 1993 to 50 percent in 2005–2006. Between 2004–2006 and 2010, however, homeownership rates dropped sharply, and more so for Hispanic and black households than for white non-Hispanics. The overall homeownership rate of 65.1 percent in April 2010 was 1.1 percentage points lower than 10 years earlier. While the housing crisis has hurt people of all races and ethnicities, it has been devastating for many Hispanic and black families, reducing their median wealth by one half to two-thirds and significantly increasing the number of households with negative net worth."[17]

  "The recession-induced drop in home values has been especially damaging to minority and low-income households. On average, real home values for Hispanic owners plummeted nearly $100,000 (35 percent) between 2007 and 2010, while the decline for black owners was nearly $69,000 (31 percent). By comparison, average values for white homeowners fell just 15 percent over this period…Moreover, white homeowners still had $166,800 in home equity on average in 2010—about twice the amount that blacks and Hispanics held…Over the next decade, minorities will make up an increasing share of young households and represent an important source of demand for both rental housing and starter homes. While their housing aspirations are similar to those of whites, minorities face greater constraints in pursuing those goals because of their lower incomes and wealth."[18]
- **Hispanic population is younger.** "Hispanics are also a much younger demographic averaging a full 10 years younger than the overall population…Every month 50,000 young Hispanics reach the age of 18**…**With a median age of 27, the Hispanic population is 10 years younger than the total U.S. median age of 37 years. In particular, Hispanics are heavily represented in the 26 to 46 age range involved in most home sales."[19]

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17 Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center
18 Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013
19 State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

- **Hispanic households are larger.** Hispanic households are typically larger than the households of non-Hispanic Whites….Sixty-one percent of all Hispanic households consist of a married couple with children younger than 18."[20]
- **Hispanics believe that home ownership is a good investment.** "Despite being hit hard by the housing market downturn, three-in-four (75%) Latinos agree that buying a home is the best long-term investment a person can make in the U.S. This compares with 81% of the general population who say the same….Fully 83% of Latino homeowners say owing a home is the best long-term investment, while 70% of renters say the same. All of these demographic and cultural characteristics make Hispanics ideal homebuyers in the housing market. In fact, Hispanics are expected to comprise half of all new homebuyers by 2020"[21]
- **First-time homebuyers.** "Forward thinking companies are already changing their strategy to reflect this shift. Case in point: D.R. Horton, the nation's largest residential homebuilder, achieved huge profits in 2012 by constructing low-priced homes. Rather than focus on the move-up market, Horton cornered the entry-level market—the market most heavily represented by minority Hispanic and Asian first-time homebuyers…By virtue of their population growth, rate of household formation and purchasing power, Hispanics are expected to drive demand for small starter homes in vibrant, high-density communities."[22]
- **Multigenerational.** "Indeed, as the Hispanic share of the U.S. population continues to grow, a substantial increase in demand is being created for building new homes that meet the structural housing needs of large and multi-generational Hispanic families…Some builders are already creating products that meet the shifting demand and needs of these consumer segments who want home with enough space to accommodate parents, adult children or tenants. These new floor plans feature a second, self-contained unit with its own entrance, bathroom and kitchenette—a development that meets both the short- and long-term needs of many Hispanic households."[23]
- **Demand for smaller units.** "Hispanics, in particular, will stimulate demand for condominiums, smaller starter homes, first trade-up homes and the estimated 11 million housing units that will become available between 2010 and 2020 as baby boomers retire."[24]
- **Preference for walkable neighborhoods.** According to the Pew Research Center, Hispanics prefer to live in neighborhoods where houses are smaller and closer together, but schools/stores are within walking distance by 60 percent compared to 44 percent of non-Hispanic Whites.[25]

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20 State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

21 Pew Research Hispanic Trends Project, "III. Latinos and Homeownership", January 26, 2012.

[22] State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

[23] State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

[24] State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

[25] 2014 Political Polarization Survey, Table 3.1 Preferred Community, Pew Research Center for the People and the Press, June 12, 2014

Opportunities to provide housing development through infill and redevelopment

Are Bend residents really willing to trade single-family homes on larger lots for urban walkable neighborhoods?

- **Shorter commute for a smaller home.** According to the ULI, "among older Americans, many of whom have spent substantial time in the workforce and may continue working beyond the traditional retirement age, the preference for a shorter commute is very strong, even if it means living in a smaller home. Seventy-two percent of baby boomers, or nearly 53 million people, would make that tradeoff. Similarly, 65 percent of war babies and members of the silent generation—nearly 23 million people—would trade a larger home for a shorter commute. Almost 51 percent of these older Americans (representing 18 million people) also show a slight preference for living in areas close to a mix of shops, restaurants, and offices, reinforcing their preference, particularly as they age, for walkable communities near amenities."[26]

Table 5. Community Attribute Preferences

Community Attribute Preferences	Homeownership status		By Generation				
Percentage preferring listed attribute	Owners	Renters	All Adults	Gen Y	Gen X	Baby boomers	War babies/ silent generation
Shorter commute/smaller home	63%	56%	**61%**	54%	54%	72%	65%
Close to mix of shops, restaurants, and offices	49%	60%	**53%**	62%	50%	49%	51%
Mix of incomes	50%	53%	**52%**	52%	53%	53%	47%
Public transportation options	44%	62%	**51%**	55%	45%	52%	48%
Mix of homes	43%	57%	**48%**	59%	47%	42%	44%
Percentage choosing three or more of these compact development attributes	-	-	***54%***	*59%*	*49%*	*57%*	*51%*

Source: Urban Land Institute

- **Likelihood of moving and anticipated new housing.** "Many Americans report that they are likely to change homes during the next five years. *"America in 2013"* found that 42 percent of Americans—representing 98 million people—are likely movers. Making up that 42 percent are 25 percent who are very likely to move and 17 percent who are somewhat likely. Gen Yers are the most likely to move: 63 percent say they expect to move during the next five years. America's oldest generations are the least likely to move. Lower-income people are more likely to move than those with higher incomes. Fifty-one percent of the people making less than $25,000 report that they are likely to move in the next five years, compared with 43 percent of those making more than $75,000. Most movers—73 percent—believe they will own the primary

[26] *American in 2013 Focus on Housing and Community, Urban Land Institute*

residence they move into; one-quarter expect to rent. Gen Yers and the oldest Americans are the most likely to expect to rent their new home, and gen Xers are the least likely to expect to rent. Just 20 percent of the baby boomers expect to rent…Most movers in Generation X—87 percent—expect to live in a single-family home. For the oldest generations, 30 percent of movers expect to move to apartments or compact homes like townhouses or rowhouses."[27]

Table 6. Recently Moved and Change in Home Size

	Recently moved?		Recent Change in Home Size		
	Yes	No	Larger	Smaller	Same
All Adults	32%	**67%**	**48%**	**27%**	**25%**
Gen Y	53%	47%	48%	25%	27%
Gen X	31%	69%	59%	20%	20%
Baby Boomers	20%	80%	44%	33%	22%
War babies/silent generation	19%	80%	24%	50%	25%

Source: Urban Land Institute

Table 7. Likelihood of Moving and Expected Type of New Home

	Likely to Move		Expected Homeownership Status		Movers' Expected Type of Home			
	Likely to move	Not likely to move	Expect to own	Expect to rent	Single-family	Apartment	Duplex, townhouse, rowhouse	Manufactured/ mobile home
All Adults	42%	**57%**	**73%**	**25%**	**65%**	**15%**	**14%**	**2%**
Gen Y	63%	36%	69%	31%	60%	21%	17%	1%
Gen X	41%	59%	81%	16%	87%	6%	4%	1%
Baby Boomers	31%	68%	79%	20%	65%	11%	16%	6%
War babies/silent generation	22%	76%	55%	36%	58%	17%	13%	0%

Source: Urban Land Institute

[27] *American in 2013 Focus on Housing and Community, Urban Land Institute*

- **Community preference.** "Americans prefer walkable communities, but only to a point. In most comparisons tested, a majority prefers the community where it is easier to walk or the commute is shorter. But when comparing a detached single-family house to an apartment or townhouse, the detached home wins out—even with a longer commute and more driving.
    - A majority prefers houses with small yards and easy walks to schools, stores and restaurants over houses with large yards but where you have to drive to get to schools, stores and restaurants (55 percent to 40 percent).
    - An even larger majority prefers houses with smaller yards but a shorter commute to work over houses with larger yards but a longer commute to work (57 percent to 36 percent).
    - A neighborhood with a mix of houses, stores and businesses that are easy to walk to is preferred over a neighborhood with houses only that requires driving to stores and businesses (60 percent to 35 percent).
    - Nevertheless, when given a choice between a detached, single family house that requires driving to shops and a longer commute to work and an apartment or condominium with an easy walk to shops and a shorter commute to work, a strong majority prefers the single family home –even with the longer commute (57 percent to 39 percent)."[28]

Table 8. Current Community Versus Preferred Community

	Where You Live Now	Where you Prefer to Live
City -Near mix of offices, apartments, and shops	16%	15%
City - Mostly residential neighborhood	19%	13%
Suburban neighborhood with a mix of houses, shops, and businesses	27%	30%
Suburban neighborhood with houses only	15%	11%
Small Town	11%	14%
Rural Area	11%	16%

Source: National Association of Realtors, 2013 Survey

[28] *National Association of Realtors, National Community Preference Survey, 2013*

- **Housing demand will shift.** According to the Director of the Metropolitan Research Center at the University of Utah, Arthur Nelson, housing demand is shifting from large lot homes to small lot, townhomes and attached housing and the current supply of housing will not meet future needs.[29]

Table 9. US Housing Demand Shift 2010-2030

House Type	2010 Supply 2030 Demand	2030 Demand	Difference
Attached/Other	26%	34%	8%
Townhome	6%	18%	12%
Small Lot	11%	50%	39%
Large Lot	69%	34%	-35%

Source: Arthur C. Nelson, Presidential Professor & Director, Metropolitan Research Center, University of Utah

- **Political influence on housing preference.** "Given the choice, three-quarters (75%) of consistent conservatives say they would opt to live in a community where "the houses are larger and farther apart, but schools, stores and restaurants are several miles away," and just 22% say they'd choose to live where "the houses are smaller and closer to each other, but schools, stores and restaurants are within walking distance." The preferences of consistent liberals are almost the exact inverse, with 77% preferring the smaller house closer to amenities, and just 21% opting for more square footage farther away."[30]

- **Fewer households with children.** "Currently, only one third of U.S. households have children, and over the next two decades only 12% of new households being formed will have children. Childfree households are prime candidates for locating in denser areas of cities, within walking range of commercial services and entertainment. Households with two working parents are also increasingly seeking to live in urban areas to simplify their lives, taking advantage of child-care services and after-school educational opportunities available in urban areas."[31]

- **Recent movers prefer walkable communities.** "There is a wider divide among those who have moved in the last three years or are planning to move in the next three years. Recent movers prefer the walkable community by 20 points (58 to 38 percent), almost identical to the walkable community preference expressed by those who plan to move in the next three years (+18 points, 57 to 39 percent)."[32]

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[29] *"Reshaping America's Built Environment", Arthur C. Nelson*
[30] *Pew Research, Center for the People and the Press, Political Polarization in the American Public, Section 3: Political Polarization and Personal Life. June 12, 2014*
[31] *Business Performance in Walkable Shopping Areas, November 2013, Robert Wood Johnson Foundation.*
[32] *National Association of Realtors, National Community Preference Survey, 2013*

Materials for further reading

The following list provides examples of key articles used in the research for this memorandum, with web links where available, for further reading.

Joint Center for Housing Studies of Harvard University

State of the Nation's Housing
http://www.jchs.harvard.edu/research/state_nations_housing

http://www.jchs.harvard.edu/research/publications/state-nations-housing-2007

American Association of Retired Persons (AARP)

Home and Community Preferences of the 45+ Population
http://www.aarp.org/home-garden/livable-communities/info-11-2010/home-community-services-10.html

Approaching 65: A Survey of Baby Boomers Turning 65 Years Old
assets.aarp.org/rgcenter/general/approaching-65.pdf

Fixing to Stay: A National Survey of Housing and Home Modification Issues
http://www.aarp.org/home-garden/housing/info-2000/aresearch-import-783.html

Beyond 50: A Report to the Nation on Livable Communities: Creating Environments for Successful Aging
http://www.aarp.org/home-garden/livable-communities/info-2005/beyond_50_05_a_report_to_the_nation_on_livable_communities__creating_environments_for_successful_aging.html

Pew Research Center

Second-Generation Americans: A Portrait of the Adult Children of Immigrants
http://www.pewsocialtrends.org/2013/02/07/second-generation-americans/

Latinos and Homeownership
http://www.pewhispanic.org/2012/01/26/iii-latinos-and-homeownership/

The Brookings Institute

Who Lives Downtown
http://www.brookings.edu/research/reports/2005/11/downtownredevelopment-birch

The Implications of Changing U.S. Demographics for Housing Choice and Location in Cities
http://www.brookings.edu/research/reports/2001/03/demographics-riche

Urban Land Institute (ULI)

America in 2013 Focus on Housing and Community
http://uli.org/wp-content/uploads/ULI-Documents/America-in-2013-Compendium_web.pdf

Research by Other Organizations

Demographic Challenges and Opportunities for U.S. Housing Markets
http://www.urban.org/UploadedPDF/412520-Demographic-Challenges-and-Opportunities-for-US-Housing-Markets.pdf

State of Hispanic Homeownership Report
http://nahrep.org/downloads/state-of-homeownership.pdf

National Community Preference Survey
http://www.realtor.org/reports/nar-2013-community-preference-survey

Are Aging Baby Boomers Abandoning the Single-Family Nest?
http://www.fanniemae.com/resources/file/research/datanotes/pdf/housing-insights-061214.pdf

2004 National Community Preference Survey
http://www.smartgrowthamerica.org/2004/10/20/survey-finds-lengthening-commutes-are-driving-the-growing-demand-for-walkable-neighborhoods-near-cities/

Endnotes

[1] U.S. Census Bureau, *U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin*, Table 2a. Projected Population of the United States, by Age and Sex: 2000 to 2050. (2004).
[2] U.S. Census Bureau, *U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin*, Table 2a. Projected Population of the United States, by Age and Sex: 2000 to 2050. (2004); available from http://www.census.gov/population/projections/data/national/usinterimproj.html.
[3] U.S. Census Bureau, *U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin*, Table 2a. Projected Population of the United States, by Age and Sex: 2000 to 2050. (2004).
[4] Data in Table 1 is from the U.S. Census, 2007 American Community Survey, except where otherwise noted.
[5] Oregon Office of Economic Analysis, *Forecasts of Oregon's County Populations and Components of Change, 2000 – 2040*, [Excel Workbook] (April 2004); available from http://www.oregon.gov/DAS/oea/Pages/demographic.aspx#Long_Term_County_Forecast.
[6] Oregon Office of Economic Analysis, *Forecasts of Oregon's County Populations and Components of Change, 2000 – 2040*, [Excel Workbook] (April 2004.
[7] Ada-Helen Bayer, Ph.D. and Leon Harper, *Fixing to Stay: A National Survey of Housing and Home Modification Issues* (Washington, D.C.: AARP, 2000).
William H. Frey, *Mapping the Growth of Older America: Seniors and Boomers in the Early*

21st Century, (Conducted for the Metropolitan Policy Program at the Brookings Institution, May 2007).
Teresa A. Keenan, *Home and Community Preferences of the 45+ Population*, (Conducted for AARP, November 2010).
[8] Ada-Helen Bayer, Ph.D. and Leon Harper, *Fixing to Stay: A National Survey of Housing and Home Modification Issues* (Washington, D.C.: AARP, 2000).
Andrew Kochera, Audrey Straight, and Thomas Guterbock, *Beyond 50: A Report to the Nation on Livable Communities: Creating Environments for Successful Aging*, (Washington, D.C.: AARP, 2005).
Stephen Engblom, Greg Ault, and Lisa Fisher, *Boomer Residential Preferences*, (Conducted for the Urban Land Instutution, Multifamily Trends, May/June 2007).
Teresa A. Keenan, *Home and Community Preferences of the 45+ Population*, (Conducted for AARP, November 2010).
[9] Stephen Engblom, Greg Ault, and Lisa Fisher, *Boomer Residential Preferences*, (Conducted for the Urban Land Institution, Multifamily Trends, May/June 2007).
[10] Teresa A. Keenan, *Home and Community Preferences of the 45+ Population*, (Conducted for AARP, November 2010).
[11] Teresa A. Keenan, *Home and Community Preferences of the 45+ Population*, (Conducted for AARP, November 2010).
[12] Teresa A. Keenan, *Home and Community Preferences of the 45+ Population*, (Conducted for AARP, November 2010).
[13] Data in Table 2 is from the U.S. Census, 2007 American Community Survey, except where otherwise noted.
[14] Oregon Office of Economic Analysis, *Forecasts of Oregon's County Populations and Components of Change, 2000 – 2040*, [Excel Workbook] (April 2004.
[15] Oregon Office of Economic Analysis, *Forecasts of Oregon's County Populations and Components of Change, 2000 – 2040*, [Excel Workbook] (April 2004).
[16] *American in 2013 Focus on Housing and Community*, Urban Land Institute
Belden Russonello & Stewart Research and Communications, *2004 National Community Preference Survey*,(Conducted for Smart Growth America and National Association of Realtors, 2004).
Eugenia L. Birch, *Who Lives Downtown*, Living Cities Census Series(Washington, D.C.: The Brookings Institute, November 2005).
[17] *American in 2013 Focus on Housing and Community*, Urban Land Institute
Belden Russonello & Stewart Research and Communications, *2004 National Community Preference Survey*,(Conducted for Smart Growth America and National Association of Realtors, 2004).
[18] Joint Center for Housing Studies of Harvard University, *The State of the Nation's Housing*, 2013
[19] Data in Table 3 is from the U.S. Census, 2007 American Community Survey, except where otherwise noted.
[20] Joint Center For Housing Studies of Harvard University, *State of the Nation's Housing,* (Cambridge, MA: President and Fellows of Harvard College, 2007).

[21] Joint Center For Housing Studies of Harvard University, *State of the Nation's Housing,* (Cambridge, MA: President and Fellows of Harvard College, 2007).
[22] Joint Center For Housing Studies of Harvard University, *State of the Nation's Housing,* (Cambridge, MA: President and Fellows of Harvard College, 2007).
[23] Martha F. Riche, *The Implications of Changing U.S. Demographics for Housing Choice and Location in Cities*, (Washington, D.C.: The Brookings Institution Center on Urban and Metropolitan Policy, March 2001).
[24] U.S. Census, 2000 Decennial Census.
[25] U.S. Census, 2007 American Community Survey
[26] James P. Allen, *How Successful Are Recent Immigrants to the United States and Their Children? Presidential Address delivered to the Association of Pacific Coast Geographers, 68th annual meeting, Phoenix, Arizona, October 22, 2005* (Los Angeles: The Association of Pacific Coast Geographers, 2006)
[27] Pew Research Center report *Second-Generation Americans: A Portrait of the Adult Children of Immigrants*, 2013.
[28] Allen, James P. "How Successful Are Recent Immigrants to the United States and Their Children?" Presidential Address delivered to the Association of Pacific Coast Geographers, 68th annual meeting, Phoenix, Arizona, October 22, 2005.
[29] Pew Research Center report *Second-Generation Americans: A Portrait of the Adult Children of Immigrants*, 2013.
[30] Pew Research Center report *Second-Generation Americans: A Portrait of the Adult Children of Immigrants*, 2013.
[31] Joint Center for Housing Studies of Harvard University, *The State of the Nation's Housing*, 2013.
[32] Gregory Rodriguez, *Immigrants Today: Where they Come From, Where They Live in the US*, Emergences, Volume 9, Number 2 (Washington, D.C.: Taylor & Francis Ltd 1999).
[33] Martha F. Riche, *The Implications of Changing U.S. Demographics for Housing Choice and Location in Cities*, (Washington, D.C.: The Brookings Institution Center on Urban and Metropolitan Policy, March 2001).
[34] Joint Center For Housing Studies of Harvard University, *State of the Nation's Housing,* (Cambridge, MA: President and Fellows of Harvard College, 2007).

APPENDIX D: Recent Trends in Absorption in Oregon

Literature on recent trends in absorption in Oregon was scarce. The best sources I found in my research were reports from the Portland State University Center for Real Estate Quarterly, which provides a "snapshot of the commercial real estate and housing markets in the region." The following information is from the Center for Real Estate Quarterly.

I report the literature in three categories: (1) residential land markets, (2) commercial land markets, and (3) industrial land markets.

Summary of the literature

Residential land markets

According to Portland State University's Center for Real Estate Quarterly, residential real estate markets are strengthening in Oregon. There were 2,469 residential unit building permits (for new private housing) issued in Oregon in the third quarter of 2014, which is an increase since 2009 but a decrease from the 3,781 units of the third quarter of 2013 (Holden 2014a).

In the Portland Metro area, existing home transactions was 7,179, "showing the best quarter since the second quarter of 2013," with a median sales price reaching $290,000. (Holden 2014a, 37). The marketing time was 43 days, with sellers getting 99 percent of the listed price. Additionally, there were 603 construction transactions of new, detached homes, with a median price of $359,000 for new homes (Holden 2014a).

In Central Oregon, Bend's growth has again spilled over to Redmond. Bend saw 668 transactions (under one acre) in the third quarter of 2014, which increased from 624 in the second quarter of 2014, with a median sales price of $289,100. Transactions have increased in Bend since 2008, where there were only a few over 200 transactions. Over the past 10 years, median sales price for transactions under one acre peaked in 2007 at around $350,000, and reached it lowest price in 2011 at about $175,000. Redmond saw a rise in median price to $197,000, with 253 transactions under one acre. Similar to Bend over the past ten years, median sales price in Redmond peaked in 2007 at a little over $250,000, and reached its lowest price in 2011, at a little over $100,000 (Holden 2014a).

Most of the Willamette Valley's residential real estate market has shown recent improvement from the second quarter of 2014 but remained similar to the third quarter of 2013. Median sales price has increased in all five counties since their lows in 2011 and 2012, but are not back from their pre-recession median existing detached home sales price (Holden 2014a). Over the last 10 years, Salem's peak number of transactions for existing homes was in 2005 and reached its low in 2009. Transactions are the highest they have been since 2009 at 600 transactions, and have reached a level to match 2006. The median price for existing homes in the third quarter in 2014 for Salem was $186,500, with a 100-day average marketing time. Median sales prices reached their peak in 2008 at over $200,000, and reached their low in 2012, below $150,000 (Holden 2014). Eugene/Springfield's residential housing market showed slower recovery, with a median sales price of $217,000, 739 sales, and an average of 59 days on the market in the third quarter of

2014, which is slightly lower than 2013 but still improvement since the recession (Holden 2014a).

In Southern Oregon, Josephine County saw a 4.2 percent increase in sales price, at $173,450 up from $166,500 in 2013, but an increase in average number of days on the market (64 in 2013 to 67 in 2014).

In the multifamily housing market, transactions "continue to be strong" in the Portland area, driven by larger institutions (Holden 2014b, 58). Sales, mainly by these institutions, was estimated to be about 248 for 2014. Before the recession, 2004 showed the highest number of Portland Metro area multifamily transactions, 274, and the lowest in 2009, dipping to 81. Sales volume peaked in 2008 at $889 million, and dropped to its lowest in 2009 at $282 million. The 2014 sales volume was expected to be $1.309 billion, its highest volume over the last 11 years (Holden 2014b). Multifamily building permits showed a 25 percent increase in Washington County and a 26% increase in the City of Portland. Portland's pre-recession building permits peaked in 2007, issuing 2,802. It dipped to its lowest in 2009, issuing only 572. Portland surpassed its pre-recession peak building permit issuance in 2013, and was expected to issue 3,733 permits in 2014. Washington County's pre-recession peak occurred in 2006, issuing 1,364, dropping to its lowest in 2010 with 212 permits. Washington County also surpassed its pre-recession peak building permit issuance in 2014, and was expected to issue 1,942 permits in 2014 (Holden 2014b).

The housing mix in Oregon cities follows the pattern of more people, more multifamily housing. In cities of less than 1,000 people, single-family detached housing made up over 90 percent of the housing mix, with multi-family comprising less than ten percent. The percent of multifamily housing increases as cities increase, comprising over 30 percent of the housing mix in cities with a population of 50,000 or more in non-metro cities (HB 2254, 2014, pg. 19).

Commercial land markets

RETAIL

In the third quarter of 2014, retail vacancy in Portland was 5.0 percent, identical to the second quarter's 5.0 percent and similar to the first quarter's 5.2 percent. Average rental rate, according to Colliers, is $16.67 per square foot for all property types, compared to $16.03 in the third quarter of 2013. Since 2007, average retail market quoted rates were lowest in 2012 (at below $16.00) and highest in 2008 (over $18.00). Since 2012, rates have slowly but consistently increased (Harrison 2014b).

Since 2007, net retail absorption peaked in Portland in the third quarter of 2007 (over 800,000 square feet) and reached its lowest in the fourth quarter of 2009 (less than negative 400,000 square feet). Net absorption in the third quarter of 2014 was 602,690 square feet, which is a significant increase from the second quarter (138,588 square feet) and first quarter (negative 218,546 square feet) (Harrison 2014b).

OFFICE

In the Metro area, the average office vacancy rate for the third quarter of 2014 was 8.6 percent, a decrease from 8.9 percent in the second quarter and 9.5 percent in the third quarter of 2013.

Since 2007, the peak vacancy rate occurred in 2010, reaching almost 12 percent. The lowest vacancy rate occurred in 2008, at a little over 8 percent. Since 2010, vacancy rates have slowly declined.

Rental rates at the end of the third quarter of 2014 were $20.66 per square foot for office space, increasing from $20.55 in the second quarter and $19.66 in the third quarter of 2013.

In the third quarter of 2014, there was a positive net absorption of office space in Portland of 154,715 square feet, a decrease from 187,810 square feet in the second quarter. However, this is an increase from the negative absorption of 109,335 in the third quarter of 2013. Since 2007, net absorption peaked in the fourth quarter of 2007 (over 600,000 square feet) and reached its lowest absorption in the first quarter of 2009 (almost negative 600,000 square feet). Since the second quarter of 2010, Portland office net absorption has been positive with the exception of the third quarter of 2013, where net absorption was almost negative 200,000 square feet (Harrison 2014c).

Industrial land markets

In Portland, industrial vacancy estimates for third quarter of 2014 ranged from 5.6 (Costar and CBRE) to 5.8 percent (Capacity Commercial Group). Both estimates are down from previous estimates in 2013, suggesting decreasing vacancy rates and continuing the downward trend for vacancy rates that has occurred since the peak in second quarter of 2010 (8.7 percent). Over the last 10 years, vacancy rates dropped below lowest pre-recession vacancy rates of 2007 in 2014 (Harrison, 2014a). According to CoStar, flex space had an 11.9 percent vacancy rate, higher than the first quarter of 2014 (10.9 percent) and the fourth quarter of 2013 (11.0 percent). Warehouse projects experienced a 4.9 percent vacancy rate in the third quarter of 2014, down from the 6 percent vacancy rate during the third quarter of 2013 (Harrison 2014a).

In Portland, overall positive net absorption for industrial was 805,585 square feet during the third quarter of 2014, significantly higher than the negative net absorption of 29,368 square feet in the first quarter. The flex market again experienced negative net absorption (65,568 square feet), which is less than the 2013 fourth quarter positive absorption (379, 489). From the first quarter of 2007 through the third quarter of 2008, Portland experienced positive net absorption in the industrial market. Beginning the fourth quarter of 2008 through the second quarter of 2010, Portland experienced negative net absorption, reaching its lowest net absorption in the second quarter of 2009 (over negative 1.5 million square feet). Since the third quarter of 2010, net absorption in the industrial market has been mainly positive, but has not reached pre-recession positive net absorption of over 2 million square feet (Harrison, 2014a).

From 2003 to 2008, Bend experienced positive industrial absorption, with the highest absorption rate in 2005 of just under 300,000 square feet. In 2009 and 2010, Bend experienced negative absorption, before experiencing positive absorption from 2011 forward, with a large increase in 2012 at 278,477 square feet. As of 2013, it was predicted that available industrial space would only last 17 months. Redmond's industrial market also experienced positive absorption in 2012 (36,489) after two years of negative absorption. It was predicted that given current rates, Redmond's supply of industrial space would last 10 years (Ross, 2013).

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Analysis of Mixed-Use Development and Redevelopment in Oregon Cities

A Report to the HB 2254 Rules Advisory Committee

September 2015

Final Report

Prepared for:

HB 2254 Rules Advisory Committee

Department of Land Conservation & Development

Prepared by:

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EXECUTIVE SUMMARY

This report presents analysis of mixed-use development and redevelopment in Oregon cities outside the Portland Metropolitan region to support development of a simplified land need methodology for use in urban growth boundary (UGB) review.

This study addresses the issues of mixed-use development and redevelopment in Oregon cities outside the Portland Metro UGB. The UO research team's charge was to gather data on actual rates of (1) mixed-use residential/commercial development in commercial areas that have occurred in Oregon cities over approximately the past two decades (two subcategories: residential development and employment land development), and (2) the amount of redevelopment that has occurred. In summary, the analysis focused on three issues:

1. Amount of mixed-use residential development in commercial areas
2. Amount of employment redevelopment to more intense employment uses on developed employment parcels
3. Amount of residential redevelopment to more intense residential uses on developed residential parcels.

Findings

Following are the key findings from our research. We want to be clear about the limitations of this analysis: in our considerable experience working with Oregon cities on Goal 9 and 10 studies, developing accurate estimates of historical rates of mixed-use development and redevelopment has consistently been a challenge because cities do not collect reliable information on redevelopment rates. Our research results are consistent with our experience—few cities conduct detailed monitoring of redevelopment.

Literature review

- **No definitive academic research exists on methods to predict the rate of mixed-use development and redevelopment.** Few academic studies exist on methods to forecast mixed-use development and redevelopment. Estimating future mixed-use development and redevelopment rates is complicated and current models are only marginally better than planning staff estimates. More research exists on drivers of mixed-use development and redevelopment and how to predict where it will occur.

- **There is a significant difference in factors that drive decisions for redevelopment in an urban context versus a suburban context**. Regardless of urban or suburban context, empirical evidence exists that an initial development site serves as a catalyst for further development in the area. The main driver of suburban redevelopment is the expected *increase* in property value, not the current higher property value (i.e. rent gap).

- **The growth, and success, of mixed-use development is based more on a neighborhood scale than a parcel level scale.** Literature suggests that it is the collective character of a neighborhood which makes mixed-use development successful, not one single project. Further, older buildings were found to be more successful at attracting businesses, and initially, it's more important to have mixed-use buildings concentrated on one block as opposed to spread out.

Mixed-use development

Mixed-use development can be defined as multiple uses (typically housing and employment) on the same site. Mixed-use development can be vertically integrated (e.g., housing over commercial), or horizontally (e.g., housing and employment in separate buildings on the same taxlot). This analysis attempted to answer questions about the rate and density of mixed-use development that has occurred in the past five years outside the Portland Metro UGB. For the purpose of this study, the UO research team defined mixed-use as follows:

> "individual structures (e.g. vertical mixed-use) or a single development (e.g., horizontal mixed-use) that contain a mixture of housing and employment uses."

Our research suggests that most cities do not collect reliable empirical data on redevelopment of residential and commercial lands. Following are key findings from our research.

- **Most cities have zones that allow mixed-use development as an outright use**. Of the 109 cities that responded to our survey, the majority (71%) allowed mixed-use regardless of size, but all cities over 10,000 had zones allowing mixed-use development outright. Fifty-six percent of cities reported they have zones that allow mixed use as a conditional use.

- **Most cities do not collect data on mixed-use development**. The majority of cities (83%) indicated that they do not collect data on mixed-use development. Only 10% of cities that answered the question stated they collect data on mixed-use development.

- **A small minority of cities reported that they had experienced mixed-use development in the past five years**. Twenty-one percent of cities reported they had experienced mixed-use development consistent with the definition in the past five years.

- **City size is a better predictor of whether mixed-use development occurred than region**. All cities with populations over 25,000 reported they had mixed use development. The percentage of cities under 25,000 that reported mixed use development declines as city size decreases. While there was a very strong trend towards larger cities experiencing more mixed-use development, no consistent patterns emerge by region.

- **Cities reported a modest amount of mixed-use development**. Twelve of the 21 cities that reported they experienced mixed-use development provided data on those developments. The developments included 21

buildings on about 29 acres. The developments represented 221 dwelling units and about 120,000 square feet of commercial space.

Redevelopment

A key issue that local governments struggle with in determining land need is redevelopment. Statewide Planning Goals 9 and 10 have different standards for consideration of redevelopment.

Cities have addressed redevelopment both from the supply side (e.g., evaluating land and assessing its redevelopment potential) and the demand side (e.g., assuming that some percentage of future development will occur on land that is already considered developed). Both of these approaches have problems due to data limitations.

Following are key findings from our research on redevelopment.

- **Most cities do not monitor redevelopment activity**. Most cities surveyed (62%) indicated that they did not monitor redevelopment. Those that did tended to be smaller cities; no cities over 25,000 reported that they systematically monitor redevelopment activity.
- **Cities use a range of strategies to encourage redevelopment**. Urban renewal was the most frequently listed strategy (51%). About 39% of the responding cities indicated they use public/private partnerships. Thirty-seven percent indicated they use "other" strategies. Among the specific approaches mentioned in the others category Accessory Dwelling Units (ADU's) were mentioned multiple times.
- **Less than one-third of cities reported they experienced residential redevelopment activity in the past five years**. About 31% of cities indicated they experienced redevelopment on residential land.
- **A higher percentage of larger cities reported residential redevelopment activity than smaller cities**. Not surprisingly, a higher percentage of larger cities (100% of cities over 25,000 and 73% over 10,000) reported redevelopment on residential land in the past five years than smaller cities (8% of cities under 1,000 reported experiencing redevelopment on residential land).
- **Eight percent of responding cities reported redevelopment on employment lands in the past five years**. Few cities (8 of 95) indicated that they had experienced redevelopment on employment lands. Notably, no cities in the 10,000-49,999 population range reported experiencing redevelopment on employment lands.

Case study findings

- **Local policy matters**. Consistent with the survey results, all of the case study cities employ local strategies to encourage mixed-use development and redevelopment. This includes removing zoning barriers, and financial incentives—which are often used in various combinations

- **City size does not predict the number of developments**. The city with the largest number of reported developments had second lowest population of the cities studied.

- **Market forces are location specific**. Some markets have focused on specialized development. For housing redevelopment, a city study found that there has not been significant activity except for special markets like student housing or development that is supported by incentives like tax exemptions or affordable housing funding.

- **Smaller cities tended to have more positive community attitudes about mixed-use and redevelopment**. The specific factors that contribute to more positive attitudes are difficult to isolate; however, the modest scale of mixed-use development and redevelopment may be easier for residents of smaller communities to support and the longer term benefits easier to grasp.

Implications

The results of this research do not point to a specific methodology to predict the amount and rate of mixed-use development and redevelopment, nor do they provide an empirical foundation for developing a set of assumptions that might be employed in a simplified model. That said, the results do have important implications for a simplified model that the Rules Advisory Committee (RAC) should consider as it deliberates and settles on a preferred approach.

- **Results point to relatively small rate assumptions pertaining to mixed-use development and redevelopment.** Seventy-nine percent of cities that responded to our survey indicated they had not experienced mixed-use development in the past five years; 69% of cities reported they have not experienced redevelopment activity.

- **City size is related to mixed-use development activity**. All cities over 25,000 reported experiencing mixed-use development in the past five years; 64% between 10,000 and 24,999 reported experiencing mixed-use development. Nineteen percent of cities under 10,000 population reported experiencing mixed-use development, while 4% under 1,000 reported mixed-use development. The implications are that a simplified methodology might require cities over 10,000 assume some amount of mixed-use development and smaller cities may not be required to assume mixed-use development.

- **City size is related to redevelopment activity.** Eighty-one percent of cities less than 10,000 population reported they had no residential redevelopment activity and 78% had no redevelopment on employment land. A majority of cities over 10,000 population reported redevelopment on residential and employment lands. The implications are that a simplified methodology might require cities over 10,000 assume some amount of redevelopment and smaller cities may not be required to assume redevelopment.

- **Most cities allow mixed-use development outright in one or more zones.** This suggests that market conditions dictate mixed-use development in most cities. Beyond removing zoning barriers, cities can provide financial incentives to encourage mixed-use development. Consideration of local policy choices such as financial incentives to determine land needs seems challenging to incorporate into a simplified methodology.
- **Most cities with redevelopment activity provided some type of financial incentive.** This is a local policy choice with respect to achieving community development objectives. Many cities do not have the financial capacity to incentivize redevelopment. It is unclear how a simplified land need methodology would incentivize cities to adopt policies and financial incentives to encourage redevelopment.

CHAPTER 1: INTRODUCTION

This report presents analysis of historic land use efficiency in Oregon cities to support development of a simplified land need methodology for use in urban growth boundary (UGB) review. The analysis is intended to address parts of the research requirements stated in House Bill 2254 (codified as ORS 197A) relating to historic land use efficiency.[1]

Background

HB 2254 requires the Land Conservation and Development Commission (LCDC) produce an administrative rule that implements the legislation. As part of the rulemaking process, the bill requires the LCDC establish factors for converting forecasted population and employment growth into estimates of land need for housing, employment and other categories of uses. The bill requires the factors:

- Be based on an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state;
- Reflect consideration by the Commission of any significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state;
- Be designed to encourage an increase in the land use efficiency of a city, subject to market conditions; and
- Provide a range of policy choices for a city about the form of its future growth.

The bill also requires "an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state. Reflect significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state." Based on this requirement, DLCD staff identified the following research objectives for the first phase of the rulemaking project:

1. Determine the historical rate of "land efficiency" and land consumption (per person/acre).
2. Determine past employment growth rates/trends of land utilization.
3. Determine significant changes "occurring or expected to occur" in markets for urban land uses.

As part of this process, the DLCD contracted with the UO to analyze "land use efficiency." Our research focused on land use efficiency of residential and employment growth in Oregon cities outside the Metro UGB and is presented in

[1] https://www.oregonlegislature.gov/bills_laws/lawsstatutes/2013ors197A.html

the report titled *Analysis of Land Use Efficiency in Oregon Cities: A Report to the HB 2254 Rulemaking Committee*.

Because they were not included in the initial scope of work, the *Land Use Efficiency* report did not address two important elements needed to inform the rule making process: (1) analysis the rate and density of mixed-use development, and (2) analysis of the rate and density of redevelopment.

Purpose and Methods

This study addresses the issues of mixed-use development and redevelopment in Oregon cities outside the Portland Metropolitan UGB. The UO research team's charge was to gather data on actual rates of (1) mixed-use residential/commercial development in commercial areas that have occurred in Oregon cities over approximately the past two decades (two subcategories: residential development and employment land development), and (2) the amount of redevelopment that has occurred. In summary, the analysis focused on three issues:

1. Amount of mixed-use residential development in commercial areas
2. Amount of employment redevelopment to more intense employment uses on developed employment parcels
3. Amount of residential redevelopment to more intense residential uses on developed residential parcels.

Following is a description of the core elements of our work program.

Literature Review

The UO research team conducted a literature review of academic and professional papers that focus mixed-use development and on the rate and intensity of redevelopment. The purpose of this task was to better understand the dynamics of mixed-use development and redevelopment and identify if any innovative methods exist to support this research.

Survey of Municipalities

Administer an online survey of planning directors with assistance the Oregon Planning Directors Association and the League of Oregon Cities. The purpose of the survey was to gather information from municipalities about (1) how much mixed use development has occurred in their city, (2) the rate and type of mixed-use development, (3) how much redevelopment has occurred in their city, and (4) the rate and type of redevelopment.

The UO team surveyed all 216 incorporated cities outside the Portland Metropolitan UGB and received 111 valid responses—a 51% response rate. Table 1-1 shows survey response numbers and rates by city size. The rates range from a high of 71% for cities between over 25,000 to a low of 38% for cities less than 1,000.

Table 1-1. Survey response by city size

City Size	Number of Cities	Number of Responses	Response Rate
<1,000	81	31	38%
1,000-4,999	79	46	58%
5,000-9,999	28	16	57%
10,000-24,999	17	11	65%
25,000-49,999	4	2	50%
50,000 or more	7	5	71%
Total	**216**	**111**	**51%**

Table 1-2 shows survey response rates by region. The rates range from a high of 62% for the South Coastal Region to a low of 39% for the Northeast Oregon region.

Table 1-2. Survey response by region

Region	Number of Cities	Number of Responses	Response Rate
Central Oregon	15	8	53%
North Coastal Oregon	19	11	58%
Northeast Oregon	56	22	39%
South Coastal Oregon	13	8	62%
Southeast Oregon	14	8	57%
Southern Oregon	24	14	58%
Willamette Valley	75	40	53%
Total	**216**	**111**	**51%**

Case Studies

The UO research team conducted eight mixed-use development and redevelopment case studies. The purpose of the case studies was to obtain (1) empirical data about case study mixed-use development and redevelopment, (2) to understand local perceptions of market factors that contribute to mixed-use development and redevelopment, and (3) to document policies and other strategies the case study cities use to promote mixed-use development and redevelopment.

Case study cities included:

- Bend
- Corvallis
- Eugene
- McMinnville
- Monmouth
- Ontario
- Pendleton
- Salem

CHAPTER 2: LITERATURE REVIEW

As part of our research efforts, the UO team conducted a literature review of academic and professional papers focused on mixed-use development and redevelopment. Specifically, the team wanted to understand if any innovative methods exist to identify the rate and intensity of mixed-use development and redevelopment in suburban areas. Following is a short description of the methods used, and a summary of findings from the literature review as well as implications for the HB 2254 rulemaking process. Appendix A includes an annotated bibliography of sources.

Methods

As a first step, the UO research team queried both the University of Oregon Library's online journal database and Google Scholar for applicable articles. While many articles were found on residential redevelopment, or the impacts of mixed-use development, little was found on the actual rate of redevelopment or methods used to analyze the rate of redevelopment.

The UO research team expanded the search to include articles available from the Urban Land Institute, as well as the Brookings Institute. This effort yielded nothing more specific or useful. As such, articles were found for residential redevelopment rates, commercial redevelopment, and the benefits of mixed used development, which are summarized below.

This literature is supplemented by studies Metro conducted on the refill rate of mixed-use development within their region. Metro uses a robust model to predict what they call "refill" which is a combination of redevelopment and infill. The research team concluded that the Metro approach is of limited use for cities outside the Metro UGB.

Findings

The literature review yielded the following findings related to mixed-use redevelopment, and redevelopment in general:

- There is very little peer-reviewed literature on mixed-use development or redevelopment rates.
- School district choice appears to drive suburban residential redevelopment, to some degree.
- Regardless of urban or suburban context, empirical evidence exists that an initial development site serves as a catalyst for further development in the area.
- The main driver of suburban redevelopment is the expected *increase* in property value, not the current higher property value (i.e. rent gap).
- Estimating future mixed-use development and redevelopment rates is complicated and current models are only marginally better than planning

staff estimates. This leads one to question whether quantitative indicators are the most appropriate predictors of future mixed-use development and redevelopment.

Implications

The following implications are based on the findings observed from the literature. They involve some judgment by the authors, and suggest opportunities for further research.

While the rate at which mixed-use development will occur is hard to predict, there is substantive evidence on what drives mixed-use development and how to predict *where* it will occur

While more research is needed to explore the specific drivers, Suzanne Charles states with some authority "forces above and beyond market forces contribute to teardowns (i.e. redevelopment). Her research, as well as research from Florida indicates that development has a contagion effect, in that once an initial site is redeveloped, it becomes a catalyst for additional redevelopment in the area, specifically in a suburban context. This notion is contrasted by Metro's methodology which holds that infill and redevelopment rates can be attributed to quantitative indicators and a model can easily be developed to predict future development rates, based on the historical rates.

There is a significance difference in decisions to redevelopment in an urban context versus a suburban context

Argued by Suzanne Charles, and supported by Munneke, evidence states there is a critical difference in redevelopment decisions in an urban versus suburban context. In an urban context, and previously thought applicable in other built environments, investors were thought to only choose to redevelop a site if the potential value was higher than the current value of the property. However, Charles found in a suburban context, the future increase of that property value is what drove redevelopment decisions. For example, knowing that a current neighborhood was becoming more popular in a couple years drove redevelopment more than the current value of the property.

The growth, and success, of mixed-use development is based more on a neighborhood scale than a parcel level scale

Literature from the U.S. Environmental Protection Agency and the Urban Land Institute article present successful case studies of mixed-use neighborhoods. Throughout they say it is the collective character of a neighborhood which makes mixed-use development successful, not one single project. Further, older buildings were found to be more successful at attracting businesses, and initially, it's more important to have mixed-use buildings concentrated on one block as opposed to spread out. This creates policy implications for governing agencies as both articles also state the low desire of banks to lend, and developers to build, multi-use buildings that are less common around the country. Furthermore, for public-private partnerships to be successful, there must be a focus on letting neighborhood level change happen, not focusing on one individual site and letting the rest follow.

CHAPTER 3: MIXED-USE DEVELOPMENT

Mixed-use development can be defined as multiple uses (typically housing and employment) on the same site. Mixed-use development can be vertically integrated (e.g., housing over commercial), or horizontally integrated (e.g., housing and employment in separate buildings). The UO research team's work on land use efficiency used property classifications to sort land uses and analyze density by type of land use. A key limitation to that methodology is that no Department of Revenue property classifications identify mixed-use development. Moreover, most cities do not collect reliable empirical data on mixed-use development that occurs on redevelopment or greenfield sites. We note that mixed-use development can occur on both greenfield sites (e.g., vacant land) and on redevelopment sites.

Yet, the question still remains: how should a simplified land need methodology account for mixed-use development? That question is the work of the Rules Advisory Committee. This analysis attempts to answer questions about the rate and density of mixed-use development that has occurred in the past five years outside the Portland Metro UGB. For the purpose of this study, the UO research team defined mixed-use as follows:

> "Individual structures (e.g. vertical mixed-use) or a single development (e.g., horizontal mixed-use) that contain a mixture of housing and employment uses."

This chapter presents survey and case study findings related to mixed-use development.

Survey of Oregon Planning Directors

The UO research team developed and administered online survey to planners and city administrators for all 216 cities outside the Portland Metro UGB. We received 111 valid responses—a 51% response rate. The purpose of the survey was to gather information from municipalities about (1) how much mixed-use development has occurred in their city, and (2) the rate and type of mixed-use development. Each question includes the number of responding cities; not all cities responded to all of the questions.

Policies related to mixed use

The first part of the survey got at how cities regulate mixed-use development. We asked two questions related to managing mixed-use development:

- Does your city have zones that allow mixed-use development as an outright use?
- Does your city have zones that allow mixed-use development as a conditional use?

When cities with zones allowing mixed-use development outright are compared by city size (Table 3-1), there is a clear difference between cities over 10,000 and those under. Of the responding cities, the majority (71%) allowed mixed-use

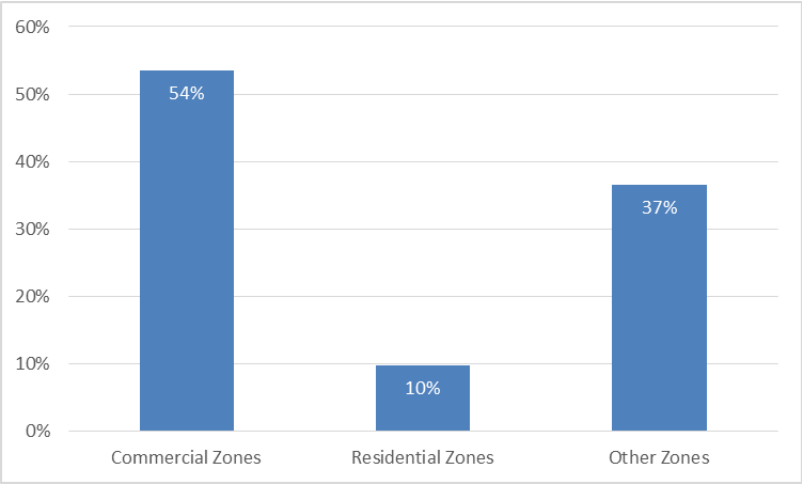
regardless of size, but all cities over 10,000 had zones allowing such development outright.

Table 3-1. Cities that have zones that outright allow mixed-use development by city size

City Size	Yes	No	Don't Know	N
<1,000	15	10	4	29
1,000-4,999	32	14		45
5,000-9,999	13	4		17
10,000-24,999	11			11
25,000-49,999	2			2
50,000 or more	4			4
Total	**77**	**28**	**4**	**108**
Percent of Total	**71%**	**26%**	**4%**	**100%**

Respondents were asked to provide a list of zones in which mixed-use development is allowed, whether as an outright or conditional use. Of the 183 different zones listed, 54% were commercial zones. Ten percent were residential zones, while other zones accounted for 37%. Other zones included industrial zones, and overlay districts.

Figure 3-1: Percent of mixed-use zones by major land use



More cities surveyed allowed mixed-use development outright (70%) than as a conditional use (56%), although the majority of cities had zones that allowed it in both capacities.

Table 3-2. Cities that have zones that allow mixed-use development as a conditional use by city size

City Size	Yes	No	Don't Know	N
<1,000	61%	21%	18%	28
1,000-4,999	50%	43%	7%	42
5,000-9,999	44%	56%	0%	16
10,000-24,999	82%	18%	0%	11
25,000-49,999	0%	100%	0%	1
50,000 or more	100%	0%	0%	3
Total	**57**	**36**	**8**	**101**
Total	**56%**	**36%**	**8%**	**100%**

Table 3-3 shows that the majority of cities (83%) indicate that they do not collect data on mixed-use development. Only 10% of cities that answered the question stated they collect data on mixed-use development, while the remaining 7% do not know if their city collected data. More cities reported that they monitor mixed-use development (10%) than collect data mixed use development (33%). This may be because respondents define monitoring as a more qualitative endeavor than collecting data. Eight percent of the 66 cities that reported they did not monitor mixed-use development reported planning to monitor mixed-use development in the future.

Table 3-3. Cities that collect data on mixed-use development

Category	Yes	No	Don't Know	n
Collect data on mixed-use development	10%	83%	7%	107
Monitor mixed-use development	33%	62%	6%	107
Plan to monitor mixed-use development	8%	79%	13%	100

Most cities surveyed indicated that they did not monitor redevelopment (Table 3-4). Those that did tended to be smaller cities. The survey did not inquire as to the method of monitoring, so the level of detail is unknown.

Table 3-4. Cities that Monitor Redevelopment, 2015

City Size	Yes	No	Don't Know	N
<1,000	31%	54%	15%	26
1,000-4,999	43%	55%	2%	42
5,000-9,999	35%	65%	0%	17
10,000-24,999	9%	91%	0%	11
25,000-49,999	0%	100%	0%	1
50,000 or more	0%	100%	0%	3
Total	**33**	**62**	**5**	**100**
Total	**33%**	**62%**	**5%**	**100%**

Twenty-one percent of cities reported they had experienced mixed-use development consistent with the definition in the past five years (Table 3-5). All cities with populations over 25,000 reported they had mixed use development. The percentage of cities under 25,000 that reported mixed use development declines as city size decreases.

Table 3-5. Cities Reporting Mixed-use Development by Size, 2010-2015

City Size	Yes	No	Don't Know	N
<1,000	4%	86%	11%	28
1,000-4,999	14%	83%	2%	42
5,000-9,999	35%	53%	12%	17
10,000-24,999	36%	64%	0%	11
25,000-49,999	100%	0%	0%	1
50,000 or more	100%	0%	0%	3
Total	**21**	**75**	**6**	**102**
Total	**21%**	**74%**	**6%**	**100%**

Table 3-6 shows cities whether cities experienced mixed-use development over the past five years by region. While there was a very strong trend towards larger cities experiencing more mixed-use development, no consistent patterns emerge by region. The Willamette Valley had the most cities with mixed-use development in the past five years, though it did not have the highest percentage given the number of respondents from that region. Central and Southern Oregon had the next highest number of cities with recent mixed-use development, followed by South Coastal and North Coastal regions. The eastern portion of the state notably did not report any recent mixed-use development.

Table 3-6. Cities with Mixed-use Development by Region, 2010-2015

Region	Yes	No	Don't Know	N
Central Oregon	63%	38%	0%	8
North Coastal Oregon	18%	82%	0%	11
Northeast Oregon	0%	90%	10%	21
South Coastal Oregon	43%	57%	0%	7
Southeast Oregon	0%	88%	13%	8
Southern Oregon	36%	55%	9%	11
Willamette Valley	19%	75%	6%	36
Total	**21**	**75**	**6**	**102**
Percent of Total	**21%**	**74%**	**6%**	**100%**

The research team asked cities that indicated they had experienced mixed-use development in the past five years to report how much mixed-use development had occurred. Table 3-7 shows that 12 of the 21 cities that reported they experienced mixed use development provided data on those developments. The developments included 21 buildings on about 29 acres. The developments represented 251 dwelling units and about 120,000 square feet of commercial space.

Table 3-7. Amount of Mixed-use Development Reported by Responding Cities, 2010-2015

City Size	Total responding cities	Cities that indicated they experienced mixed-use development	Cities that reported the amount of mixed-use development	Total Developments	Total Buildings	Approximate Acreage	Number of Residential Units	Commercial Space (sq ft)
<1,000	31	1	1	1	1	0.5	1	600
1,000-4,999	46	6	3	5	7	1.5	9	6,400
5,000-9,999	16	6	5	7	7	20.7	17	73,812
10,000-24,999	11	4	1	1	1	0.2	3	-
25,000-49,999	2	1	–	–	–	–	–	–
50,000 or more	5	3	2	3	5	6.4	221	40,000
Grand Total	**111**	**21**	**12**	**17**	**21**	**29.3**	**251**	**120,812**

The development data are interesting in the sense that cities in every size class reported experiencing mixed-use development and that smaller cities provided data on the developments more frequently. We speculate that is a function of the number and complexity of the developments—smaller cities with few developments make monitoring easier.

CHAPTER 4: REDEVELOPMENT ACTIVITY

A key issue that local governments struggle with in determining land need is redevelopment. Statewide Planning Goals 9 and 10 have slightly different standards for consideration of redevelopment, with Goal 10 having a higher standard or burden of proof. OAR 660-008-0005(7) defines redevelopable land as follows:

> "Redevelopable Land" means 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.

Goal 9 uses a different definition as stated in OAR 660-009-0005(1):

> (1) "Developed Land" means non-vacant land that is likely to be redeveloped during the planning period.

Thus, the Goal 9 rule defines developed land as land that is likely to be redeveloped. For the purpose of our survey, the UO research team defined redevelopment as follows:

> Redevelopment is development that occurs on a tax lot that creates more dwelling units or employment space than the current use, and thus an increase in density on the tax lot. Development that occurs through subdivisions or partitions is not considered redevelopment in this context.

Cities have addressed redevelopment both from the supply side (e.g., evaluating land and assessing its redevelopment potential) and the demand side (e.g., assuming that some percentage of future development will occur on land that is already considered developed). Both of these approaches have problems due to data limitations.

Most cities have addressed the Goal 9 and 10 redevelopment requirements from the demand side by analyzing how much redevelopment has occurred and then making assumptions about how much will occur in the future. The problem with this approach is that most jurisdictions do not systematically monitor redevelopment. Nonetheless, cities have generally agreed that some new development will not require vacant land—e.g., that developed land will redevelop.

This task researched the rate of redevelopment using (1) a survey of planning directors (combined with the mixed-use analysis survey), and (2) analyzing case study cities to provide more detail.

We want to be clear about the limitations of this analysis: in our considerable experience working with Oregon cities on Goal 9 and 10 studies, redevelopment has consistently been a challenge because cities do not collect reliable information on redevelopment rates. Our survey results are consistent with our experience—few cities conduct detailed monitoring of redevelopment.

Survey of Oregon Cities

The UO research team developed and administered online survey to planners and city administrators for all 216 cities outside the Portland Metro UGB. We received 111 valid responses—a 51% response rate. The purpose of the survey was to gather information from municipalities about (1) how much redevelopment has occurred in their city, and (2) the rate and type of redevelopment. Each question includes the number of responding cities; not all cities responded to all of the questions.

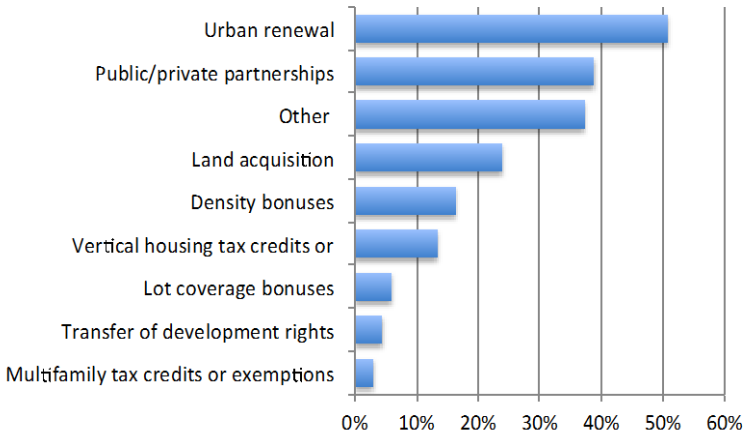
Most cities surveyed (62%) indicated that they did not monitor redevelopment (Table 4-1). Those that did tended to be smaller cities. The survey did not inquire as to the method of monitoring, so the level of detail is unknown.

Table 4-1. Cities that reported whether they monitor redevelopment by city size

City Size	Yes	No	Don't Know	N
<1,000	31%	54%	15%	26
1,000-4,999	43%	55%	2%	42
5,000-9,999	35%	65%	0%	17
10,000-24,999	9%	91%	0%	11
25,000-49,999	0%	100%	0%	1
50,000 or more	0%	100%	0%	3
Total	**33**	**62**	**5**	**100**
Total	**33%**	**62%**	**5%**	**100%**

Figure 4-1 shows that responding cities used a range of strategies to encourage redevelopment. Urban renewal was the most frequently listed strategy (51%). About 39% of the responding cities indicated they use public/private partnerships. Thirty-seven percent indicated they use "other" strategies. Among the specific approaches mentioned in the others category Accessory Dwelling Units (ADU's) were mentioned multiple times.

Figure 4-1. Strategies used to encourage redevelopment



We next asked respondents to indicate whether they had experienced redevelopment on residential land in the past five years consistent with the definition included on the survey. About 31% of cities indicated they experienced

redevelopment on residential land and 26% indicated they experienced redevelopment on employment land.

As with mixed-use development, there was a strong trend towards larger cities having recent residential redevelopment (Table 4-2). The majority of cities, however, had not experienced residential redevelopment in the past five years—a similar pattern to that observed for mixed-use development. Not surprisingly, a higher percentage of larger cities (100% of cities over 25,000 and 73% over 10,000) reported redevelopment on residential land in the past five years than smaller cities (8% of cities under 1,000 reported experiencing redevelopment on residential land).

Table 4-2. Cities Reporting Redevelopment on Residential Land by City Size, 2010-2015

City Size	Yes	No	Don't Know	N
<1,000	8%	85%	8%	26
1,000-4,999	15%	78%	7%	41
5,000-9,999	47%	47%	6%	17
10,000-24,999	73%	27%	0%	11
25,000-49,999	100%	0%	0%	1
50,000 or more	100%	0%	0%	3
Total	**28**	**65**	**6**	**99**
Total	**28%**	**66%**	**6%**	**100%**

The Willamette Valley had dramatically more cities with recent residential redevelopment, though as a percentage of reporting cities, it was in the middle range (Table 4-3). Southern Oregon had the highest share of cities reporting redevelopment on residential land at 40 percent. The only region with no recent residential redevelopment was Southeast Oregon, and only one city on the South Coast reported residential redevelopment.

Table 4-3. Cities Reporting Redevelopment on Residential Land by Region, 2010-2015

Region	Yes	No	Don't Know	N
Central Oregon	38%	63%	0%	8
North Coastal Oregon	36%	64%	0%	11
Northeast Oregon	20%	65%	15%	20
South Coastal Oregon	14%	86%	0%	7
Southeast Oregon	0%	100%	0%	8
Southern Oregon	40%	60%	0%	10
Willamette Valley	34%	57%	9%	35
Total	**28**	**65**	**6**	**99**
Total	**28%**	**66%**	**6%**	**100%**

For respondents that indicated they had experienced redevelopment, we asked them to provide the following data on residential developments: total new dwelling units (% single-family, % single-family attached, % multifamily), % of all new dwellings in the last five years, and total acres redeveloped. Table 4-4 shows the

results. Note that the data presented in Table 4-7 is not a statistically valid sample and cannot be inferred to represent all cities.

Of the ten cities reporting data on recent residential redevelopment, none had populations fewer than 1,000. Most reporting cities were in the 5,000 to 9,999 range. The majority of units (88%) that resulted from redevelopment were reported in cities larger than 50,000. Cities reported different mixes of units; overall the mix was about 50% single-family detached and 50% multifamily types. Cities provided limited data regarding percent of new dwellings that qualified as redevelopment and the number of acres developed.

Table 4-4. Average Activity of Cities with Residential Redevelopment by Size, 2010-2015

					Average % of New Dwelling Units by Type				
City Size	Total responding cities	Cities that indicated they experienced residential redevelopment	Cities that reported the amount of residential development	Total New Dwelling Units	% Single-Family	% Single-Family Attached	% Multi-Family	% of All New Dwellings in Last Five Years	Total Acres Redeveloped
<1,000	31	2	0	na	na	na	na	na	na
1,000-4,999	46	6	1	41	100%	0%	0%	3%	1.1
5,000-9,999	16	8	5	161	42%	26%	32%	38%	6.0
10,000-24,999	11	8	2	194	0%	0%	100%		11.8
25,000-49,999	2	1	0	na	na	na	na	na	na
50,000 or more	5	3	2	2,956	38%	3%	59%		na
Total	**111**	**28**	**10**	**3,352**	**48%**	**17%**	**35%**	**41%**	**18.9**

Note: The data in Table is not a representative sample of cities and cannot be inferred to all cities.

We next asked respondents "In the context of the definition of redevelopment, has your city experienced redevelopment on employment land in the past five years?" Few cities (8 of 95) indicated that they had experienced redevelopment on employment lands (Table 4-5). Notably, no cities in the 10,000-49,999 population range reported experiencing redevelopment on employment lands. Difficulty in tracking employment redevelopment was apparent from the number of cities that answered "don't know."

Table 4-5. Cities that reported redevelopment on employment lands (e.g., commercial and industrial lands) by city size

City Size	Yes	No	Don't Know	N
<1,000	4%	80%	16%	25
1,000-4,999	10%	79%	10%	39
5,000-9,999	13%	81%	6%	16
10,000-24,999	0%	82%	18%	11
25,000-49,999	0%	100%	0%	1
50,000 or more	33%	33%	33%	3
Total	**8**	**75**	**12**	**95**
Total	**8%**	**79%**	**13%**	**100%**

Geographically, the only region that reported more than one city with employment redevelopment was the Willamette Valley (Table 4-6).

Table 4-6. Cities that reported redevelopment on employment lands (e.g., commercial and industrial lands) by region

Region	Yes	No	Don't Know	N
Central Oregon	14%	86%	0%	7
North Coastal Oregon	11%	78%	11%	9
Northeast Oregon	0%	72%	28%	18
South Coastal Oregon	14%	71%	14%	7
Southeast Oregon	0%	88%	13%	8
Southern Oregon	0%	100%	0%	11
Willamette Valley	15%	74%	12%	34
Total	**8**	**75**	**12**	**95**
Total	**8%**	**79%**	**13%**	**100%**

For respondents that reported having redevelopment on employment lands, we asked them to provide the following data on employment redevelopment: new built space (sq ft), land (acres), % of land industrial, % of land commercial/other.

Of the eight cities that reported details regarding employment redevelopment, all were under 25,000 in population (Table 4-7). Cities reported a total of 125,806 square feet of new space on 654 acres (one city reported over 600 acres redeveloped). Average development size tended to be around 20,000 square feet, though average acreage was extremely variable. Redevelopment by industrial or commercial/other use was also variable, and did not seem to follow patterns by city size.

Table 4-7. Total redevelopment activities in cities with employment redevelopment, 2010-2015

Redevelopment Metric	Amount
New Space Built (sq ft)	125,806
Land (acres)	654
% of land industrial	35%
% of land commerical/other	65%

CHAPTER 5: CASE STUDIES

To better understand the factors that lead to mixed-use development and redevelopment, the UO research team conducted a set of case studies. The purpose of the case studies was to (1) obtain empirical data about case study mixed-use development and redevelopment, (2) to understand local perceptions of market factors that contribute to mixed-use development and redevelopment, and (3) to document policies and other strategies the case study cities use to promote mixed-use development and redevelopment.

The research team selected the case study cities to include different population classes and regions. Case study cities included:

- Bend
- Corvallis
- Eugene
- McMinnville
- Monmouth
- Ontario
- Pendleton
- Salem

The research team conducted interviews with planners or city administrators from each of the case study communities. We requested that representatives from the case study communities identify mixed-use development and redevelopment activity using a Google map. We requested specific data about each development – the address, the type of development, and the number of dwelling units and/or employment space included with each development. We also asked city staff tell us about policies their city has adopted to encourage mixed-use development and redevelopment, their perceptions of market conditions for this type of development, and community attitudes toward this type of development. Summaries of each case study are included in Appendix B.

Findings

Following is a summary of the key findings and themes identified through the case studies.

- **Local policy matters**. Consistent with the survey results, all of the case study cities employ local strategies to encourage mixed-use development and redevelopment. This includes removing zoning barriers, and financial incentives—which are often used in various combinations

- **City size does not predict number of developments**. The city with the largest number of reported developments had second lowest population of the case study cities.

- **Market forces are location specific**. Some markets have focused on specialized development. For housing redevelopment, a city study found

that there has not been significant activity except for special markets like student housing or development that is supported by incentives like tax exemptions or affordable housing funding.

- **Achievable rents are the best indication of market success**. Based on key observations from a pro forma based analysis for estimating market driven redevelopment, redevelopment is highly sensitive to rent rates, construction cost and buyer behavior. Housing rental rates are a function of income; cities with low average incomes should not expect to see significant activity without public support. While achievable rent is the strongest predictor of redevelopment potential, it is very difficult to forecast achievable rents.

- **Smaller cities tended to have more positive community attitudes about mixed-use and redevelopment**. The specific factors that contribute to more positive attitudes are difficult to isolate; however, the modest scale of mixed-use development and redevelopment may be easier for residents of smaller communities to support and the longer term benefits easier to grasp.

- **Redevelopment is more controversial than mixed-use development.** Community misgivings about developments tended to center on redevelopment much more than mixed-use projects. Moreover, the scale of the project is critical—large projects typically have bigger impacts and are more likely to create controversy.

- **Student housing projects can create controversy**. Cities with large universities (e.g., Corvallis and Eugene) reported more community concern about residential redevelopment. One small city with a university indicated that it did not experience such concerns, and that the student population was well integrated into the community.

- **Financial incentives are key**. The three cities that did not directly support mixed-use or redevelopment experienced very little. What was developed was half mixed-use and half employment redevelopment, with no documented residential redevelopment other than that contained in the mixed-use developments.

- **Definitions are tricky**. The definitions occasionally created challenges, such as group quarters (is it mixed-use? Is every bed a residential unit?) and redevelopment that shifted from residential to employment use (does it count as employment redevelopment?).

Appendix A: Annotated Bibliography

The following section contains a synopsis of the literature, organized by topic. The citation for the article is given in bold, followed by a short description of the main points.

Portland Metro Region Studies

Oregon Metro. *Non-residential Refill Rate Study*. Economic and Land Use Forecasting Measurement Program, October 2011.

The second such study done by Metro, the authors reviewed building permit data from 2001 to 2007 to measure non-residential, infill, redevelopment. Refill rates are defined as the percent of all commercial and industrial space constructed on already developed sites, compared with the overall increase in space in the same time period. Redevelopment was categorized by an increase in square footage. Throughout the study, rates are broken out into two categories: percent of space and permit value, which is quite different than percent of land area. Of 3,363 permits issued, 1,742 (52%) added new capacity. Of those permits, the refill rate for commercial property was 59% and for industrial property 22%, when measured by square feet of capacity. When measured by value, a rate of 70% was found for commercial, and 35% for industrial. In addition, the authors found there was twice as much commercial development on refill land as there was on vacant land, by number of permits. Additionally, the median square footage of development on vacant land was higher than refill by ~35%.

Oregon Metro. *Refill Report—Measuring Past Refill Rates and Forecasting Future Refill*. Economic and Land Use Forecasting Measurement Program, December 2011.

Initially, the authors outline the importance of refill rates on urban growth, and how it relates to developing estimates for future land supply. Metro is unique in that these rates are legally required to be measured, and subsequently incorporated into their long range comprehensive plan. Briefly they mention from 2001-2006, refill accounted for 35-45% of residential development, and between 2001 and 2007, refill accounted for 60-70% of commercial development. Between 1996 and 2006, residential refill rates in the Metro area ranged between 18% and 42%, with an average of 31.6%. Commercial refill rates are aggregated over time, and are equivalent with the *Non Residential Refill Rate Study* discussed above—from 2001-2007, the refill rate for commercial property was 59% when measured by square footage, and 70% when measured by permit value.

The authors then attempt to develop a model to estimate future infill rates. Their methodology is hard to understand, but they state assessor data is one of the most important pieces of base information when attempting estimates. The authors close with "In short, refill is not a determined quantity as theory would have it; rather it appears to be a statistical quantity requiring calibration and verification against actual refill events."

E.D. Hovee & Company, LLC. City of Portland Economic Opportunities Analysis: Section 1. Trends, Opportunities & Market Forces. Prepared for: City of Portland Bureau of Planning and Sustainability. Adopted by Ordinance No. 185657. 3 Oct 2012.

This economic opportunities analysis (EOA) was done to examine the 20-year supply and demand for employment development and land in the city. While the analysis does not directly address how to predict rate of development or redevelopment of mixed-use, the analysis discusses mixed-use development and redevelopment as an important element in rising trends, opportunities, and market factors. The analysis identifies some important emerging trends within the study: First, the rise of more mixed-use development and high densities along major transit streets in neighborhood commercial corridors. Secondly, "expected space needs are relatively diverse, and there seem to be growing opportunities for more mixed-use and denser commercial space versus more traditional manufacturing and distribution activity" (v). Thirdly, while opinions of focus group members regarding greater density uses and redevelopment varied, focus groups discussed means by which to grow up rather than out.

Mixed-Use Development

Childs, Paul D., Riddiough, Timothy J., Triantis, Alexander J.."Mixed Uses and the Redevelopment Option." Real Estate Economics. Fall 1996. V24 3: pp. 317-339.

The primary purpose of this paper is to evaluate the potential for mixed-use development and redevelopment on property value, however the article also explores how the option and ability to implement mixed-use development and redevelopment affects the timing of initial land development. The authors found mixed-use development and redevelopment add to the value of the built property or under-developed land when the costs remain low. From this they conclude that there will be an increase in mixed-use development in soft and over-supplied markets. The authors argue that the "rate of development is faster… when costs to redevelopment are relatively low" (319).

Residential Redevelopment

Aichele, S., Andresen, J. *Spatial and Temporal Variations in Land Development and Impervious Surface Creation in Oakland County, Michigan, 1945-2005*. Journal of Hydrology, Issue 485, 2013.

While the authors are focused on the rate of change in impervious surfaces, their independent variable is the rate of residential development over time. The county in the study maintains a parcel specific GIS dataset, of which 356,000 of the 540,000 parcels are residential. The dataset includes the year the structure was built, or redeveloped—however the authors say most redevelopment is attributed to seasonal lakeside cottages becoming year round residences, and is not typical of the entire dataset. The authors found that residential lot size increased over time. Prior to the 1960s, most residential development was on parcels less than 8,000 square feet. However, starting in the 1970's, lot size began to increase, and by the 1980s and 1990s, lot sizes of over 1 acre were not only common, but smaller lot sizes were no longer being built. The authors conclude "significant variability exists

in the form of suburban residential construction, depending on both lot size and date of construction."

Charles, Suzanne. *Understanding the Determinants of Single Family Residential Redevelopment in the Inner-ring Suburbs of Chicago*. Urban Studies, Volume 50, Issue 8, June 2013.

The author analyzed parcel specific data of 128 neighborhoods in Chicago in an effort to find the determinants for redevelopment. She discusses the trigger for redevelopment in suburban residential areas as when a developer can justify a higher economic return on a more profitable use than what currently exists (i.e. single family home). Using demolition permits matched with property tax data between 2000 and 2009, the author used the following explanatory variables: housing characteristics (age, amenities, etc.), location relative to central business district, neighborhood socio-economics, and school district. The author found "properties with smaller houses, lower floor-area to lot-size ratios, and lower ratios of their value to that of their neighbourhood, as well as properties located in high-quality school districts, are more likely to be redeveloped. The median property value of a neighbour-hood does not have a large effect on whether a property is redeveloped, but neighbourhoods with higher proportions of Black and Hispanic residents were significantly less likely to experience redevelopment."

Charles, Suzanne. *The Spatio-temporal pattern of housing redevelopment in Suburban Chicago, 2000-2010*. Urban Studies, Volume 51, Issue 12, 2014.

The author used the same dataset as above to analyze where and at what speed suburban residential redevelopment occurs. She found "Findings confirm that teardown redevelopment is spatially clustered; forces above and beyond market forces contribute to teardowns, leading to a contagion effect." The most common factor was found to be school district, and that redevelopment initially started in places with highest incomes and then spread to less affluent, surrounding neighborhoods. Additionally the author found suburban redevelopment has one major difference than urban redevelopment—the potential increase of property value over time drove redevelopment, as opposed to redeveloping solely for a higher current property value.

Skidmore, M., Peddle, M. *Do Development Impact Fees Reduce the Rate of Residential Development?* Growth and Change, Volume 29, Fall 1998

The authors examined the relationship between development fees and residential redevelopment in DuPage County, Illinois (located 30 miles from Chicago), between 1977 and 1992, during which it was the fastest growing county in the state in terms of absolute population growth. Comparing the date of adoption for impact fees, and development rates before and after adoption, the authors found they have a negative impact on redevelopment, reducing it by up to 25%. A case is made that impact fees can serve as a growth management tool, but can also discourage refurbishing of the current housing stock.

Wilson, B., Song, Y. *Do Large Residential Subdivisions Induce Further Development?* Journal of the American Planning Association, Volume 77, Issue 1, October 2010

Utilizing counties in Florida as a case study, the authors use empirical data and regression modeling to determine if large subdivisions spur the development of additional subdivisions. Analyzing parcel changes, they identify factors to predict which parcels will subsequently be redeveloped, based on a radius of ¼ mile, ½ mile, and 1 mile. The authors found a positive correlation between the proximity to a large subdivision, and the likelihood that a neighboring parcel would subsequently be developed. In an attempt to explain the phenomenon, they state "Large subdivision projects send at least two clear signals to other members of the development community: that residential development in the area is profitable, and that development proposals in this location are likely to be approved, or at least have a reasonable chance of being approved, by local government."

Commercial Redevelopment

Munneke, H. *Redevelopment Decisions for Commercial and Industrial Properties.* Journal of Urban Economics, Issue 39, 1996

Munneke strived to provide empirical evidence for redevelopment decisions, namely that an investor would only choose to redevelop a site if the redeveloped value is higher than the value of the current property use. Using data from Chicago between 1987 and 1990 and looking at demolition permits and sale prices, Munneke found his hypothesis to be true. His evidence supports commercial and industrial sites will only be redeveloped when the value of the redeveloped parcel is higher than the current value of the parcel plus demolition costs.

Klebba, Jennifer R., Mindee D. Garrett, Autumn L. Radle, and Bryan T. Downes. "Downtown Redevelopment in Selected Oregon Coastal Communities: Some Lessons from Practice." Downtowns: Revitalizing the Centers of Small Urban Communities. New York, NY: Routledge, 2001. Print.

This chapter consists of five case studies of Oregon coastal cities in their efforts to redevelop downtown. The study covers the financial, physical, function, and political strategies used to encourage downtown redevelopment, as well as the primary obstacles each of the cities face. These challenges and obstacles include: absentee property owners, lack of public participation and stakeholder involvement/leadership, outside (state) agency hindrances, and land use decisions that have hindered the downtown economy.

Additional Articles

United States Environmental Protection Agency. *Attracting Infill Development in Distressed Communities: 30 Strategies.* EPA 230-R-15-001, May 2015.

McMahon, Edward T. *In Building Size and Age, Variety Yield Vibrancy*. UrbanLand: The Magazine of the Urban Land Institute. August 7, 2014

APPENDIX B: CASE STUDIES

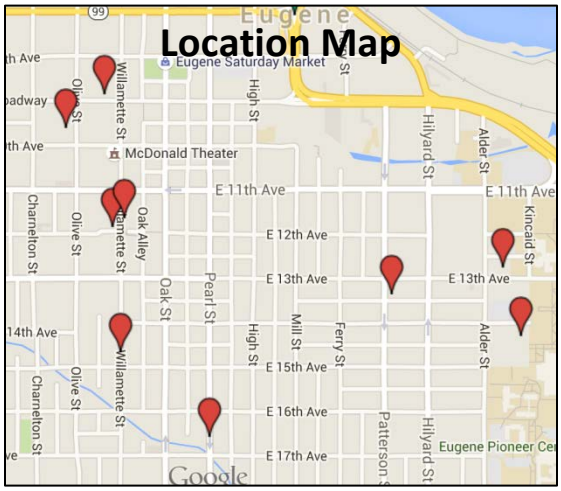
Appendix B presents detailed information for the mixed-use development and redevelopment case study communities. The research team conducted case studies of the following cities:

- Bend
- Corvallis
- Eugene
- McMinnville
- Monmouth
- Ontario
- Pendleton
- Salem

The research team conducted interviews with planners or city administrators from each of the case study communities. We requested that representatives from the case study communities identify mixed-use development and redevelopment activity using a Google map. We requested specific data about each development – the address, the type of development, and the number of dwelling units and/or employment space included with each development. We also asked city staff tell us about policies their city has adopted to encourage mixed-use development and redevelopment, their perceptions of market conditions for this type of development, and community attitudes toward this type of development. Summaries of each case study are included in Appendix B.

Eugene

Mixed-Use and Redevelopment Case Study



Summary Data

- City Population: **158,335**
- Total Developments: **9**
- Number of Buildings: **12**
- Approx. acreage: **Unknown**
- Number of Residential Units: **634**
- Employment square footage: **192,540 ft^2 documented**

Development Narrative

	Type	Style	Details
1661 Pearl St.	Mixed-use Development	Mixed-Use Apartment	This building included 100 residential units and 4,250 ft^2 of commercial space and an enclosed parking garage.
101 W. 10th Ave.	Mixed-use Development	Community College Downtown Center	This development included 255 dormitory style bedrooms in 178,140 total ft^2 of combined residential, academic and office space.
45 W Broadway	Mixed-use Redevelopment	Remodel	This redevelopment added 16 residential units, and reduced the amount of commercial space.
1180 Willamette St	Mixed-use Development	New Construction	This 3-building development included 110 residential units and undocumented square footage of commercial space.
1331 Patterson St.	Mixed-use Development	Demolition and Rebuild	This apartment complex includes 100 dwelling units and undocumented square footage of commercial space.
1414 Kincaid St.	Mixed-use Development	Student Housing	This development includes 45 residential units, undocumented square footage of commercial space, and a parking garage.
839 E. 13th Ave	Mixed-use Development	New Construction	This development consists of 3,297 ft2 of ground floor commercial and 2 second-floor dwelling units.
1167 Willamette St.	Mixed-use Development	Fire Replacement	This development includes 3 residential units over 4,250 ft^2 of first floor commercial.
1460 Willamette St.	Mixed-use Development	New Construction	This 2-building development consists of 3 residential units over a garage and 2,603 ft^2 of commercial space.

Community Context: Eugene

City Policies

Eugene has previously used Urban Renewal and Multi-Unit Property Tax Exemption (MUPTE) to facilitate redevelopment in certain areas of the city. Redevelopment in the form of affordable housing has also been supported through the Low Income Rental Housing Property Tax Exemption (LIRPTE) and federal funds. The City has amended zoning code standards in some areas that make it easier to mix office and industrial uses (though that is not included in "mixed use" for the purpose of this DLCD study), to mix general employment and residential in employment zones, and to make it easier to develop housing in downtown (a mixed-use zoning district).

Market Forces

For housing redevelopment, a city study found that there has not been significant activity except for special markets like student housing or development that is supported by incentives like tax exemptions or affordable housing funding. Based on key observations from a pro forma based analysis for estimating market driven redevelopment, redevelopment is highly sensitive to rent rates, construction cost and buyer behavior. In Eugene, rent rates have been flat for many years, yet construction costs have continued to rise. Low average wages in the community contribute to low rent and lease rates. As a result, market conditions are difficult for redevelopment in Eugene and very little market-driven redevelopment is expected to happen over the next 20 years. In many employment-related redevelopment cases, the redevelopment expected would not meet the definition of this study as it would replace one lower density use with another and not actually adding more employment square footage.

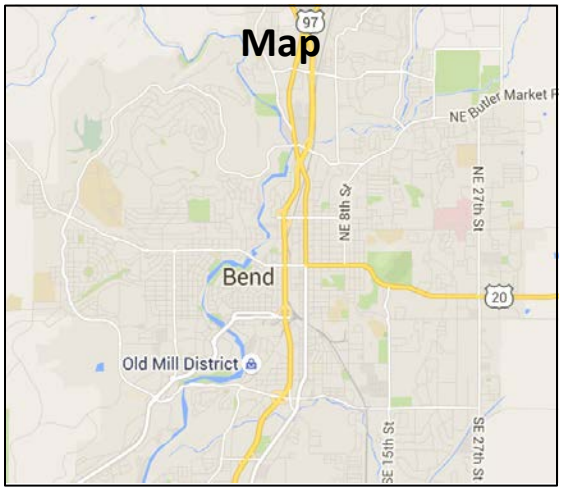
Attitudes Towards Development

Community – Envision Eugene, the community vision for the next 20 years of growth, includes the facilitation of residential redevelopment including mixed-use development along key corridors as a primary growth strategy. Mixed use is generally conceived of horizontally, rather than only vertically in the same building. The community has been very supportive of the code amendments described above that allow mixed use. All of the significant residential redevelopment of the past five years has been in the form of student housing, and the city has heard concerns about neighborhood character, regardless of whether it is in the form of redevelopment or greenfield development. Attitudes towards financial tools that support redevelopment are mixed in the community.

Bend

Mixed-Use and Redevelopment Case Study

Map



Summary Data

2012 Population: **77,455**

Total Developments: **0**

Number of Buildings: **0**

Approx. acreage: **0**

Number of Residential Units: **0**

Employment square footage: **0**

Development Narrative

No developments fit the criteria for mixed-use or redevelopment from the past five years. Some properties have been rezoned in such a way to support future mixed-use or redevelopment, but no actual construction has occurred outside of greenfield development in the past five years. The vast majority of recent development has been in the form of single-family detached housing. The city has areas of mixed-use development (e.g. Mill district), but those are generally a mix of uses within an area, rather than a mix on a single tax lot.

Community Context: Bend

City Policies

The city does not have any policies to specifically encourage redevelopment or mixed-use currently. Some special planned areas such as the Mill District, Northwest Crossing, and Murphy Crossing encourage mixed-use in the zoning, but not through policies or programs. These areas promote a mix of housing types and employment. The Central Oregon Community College also has a master plan with a mix of uses, which it is in the process of developing. The City does have a track record of working with developers who want mixed-use or redevelopment to assist them, but not through policies or programs. The upcoming UGB expansion package will include efficiency measures to encourage redevelopment in targeted areas.

Market Forces

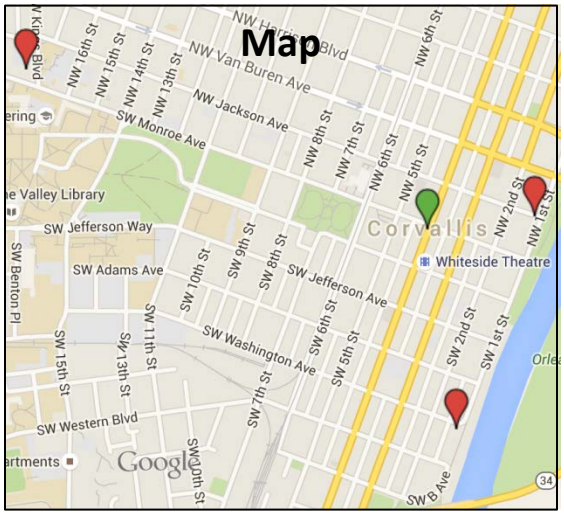
Due to the current ease of greenfield development, the market is not pushing for either mixed-use or redevelopment. Land prices are rising, but not enough to divert the trend from single-family construction. Some multi-family housing has been built recently, but on a small scale. Anecdotally, system development charges have been suggested as a limiting factor to some development.

Attitudes Towards Development

Community – There are certain political interests that want to see mixed-use and infill, but neighborhood residents often resist things like accessory dwelling units and short-term rentals. Oregon State University has been approved to build a 4-year university in Bend and found a good site, but also faced significant opposition in the form of an appealed site plan. The City is still working on bridging the communication gap between these interests.

Corvallis

Mixed-Use and Redevelopment Case Study



Summary Data

- 2012 Population: **55,055**
- Total Developments: **3**
- Number of Buildings: **3**
- Approx. acreage: **Unknown**
- Number of Residential Units: **unknown**
- Employment square footage: **Unknown**

Development Narrative

	Type	Style	Details
The Jax	Mixed-Use Development	High-end apartments	This development includes retail on the first floor, high-end apartments on the upper floors, and surface parking.
The Renaissance	Mixed-Use Development	High end condominiums	This development consists of below-ground parking, ground floor retail, and offices and condominiums on the upper floors.
OSU Building	Mixed-Use Development	Student Housing with mixed employment	This building was originally built by the OSU bookstore, but was since leased to restaurants (including McMenamins), coffee shops, offices and 2 or 3 floors of student-oriented apartments

Community Context: Corvallis

City Policies

Corvallis does not have any financing programs to support mixed-use projects or redevelopment, but the code does encourage mixed-use through zoning and minimum floor to area ratios (FARs) The downtown area also has relatively low parking requirements, which can help mixed-use projects pencil out.

Market Forces

There is a market push around student housing, but the type of residential redevelopment that has occurred has primarily been the replacement of fraternity and sorority houses with townhomes, which is difficult to categorize as redevelopment in this case. Similarly, single-family homes are being "redeveloped" as larger single-family homes, which do not qualify as redevelopment for this study.

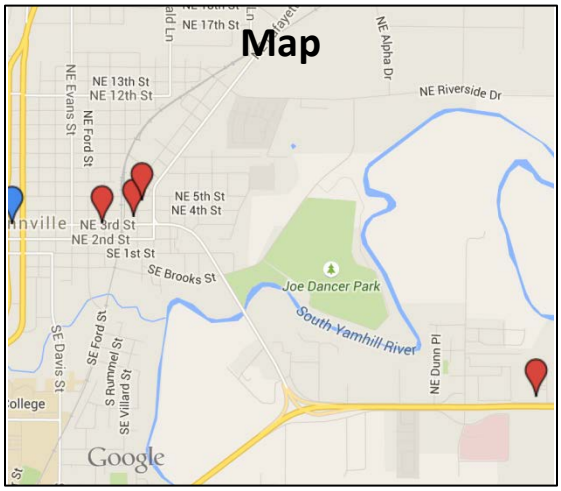
Attitudes Towards Development

Community – The community has expressed some reservations about residential redevelopment based on parking impacts and other changes to the neighborhood character. The response to mixed-use projects depends on the individual development, but has generally been positive or neutral.

Elected Officials – Elected officials have not expressed objections to mixed-use projects, but they have not directly offered support. Redevelopment has a more negative perception as a type of development that can raise conflicts and result in loss of neighborhood character.

McMinnville

Mixed-Use and Redevelopment Case Study



Summary Table

- 2012 Population: **32,435**
- Total Developments: **4**
- Number of Buildings: **4**
- Approx. acreage: **2.6**
- Number of Residential Units: **50**
- Employment square footage: **47,970**

Development Narrative

	Type	Style	Details
Village Quarter	Mixed-Use Development	Demolition and New Construction	This development included 50 residential units in the form of senior-only affordable housing and 9,799 ft^2 employment space replacing a dilapidated storage barn.
Kaos	Employment Redevelopment	Demolition and New Construction	This development replaced a single-story repair shop with increased space totaling 13,200 for office, restaurant and retail uses.
Marjorie House Memory Care Facility	Employment Redevelopment	Demolition and New Construction	This 44 bed facility of roughly 21,150 ft^2 replaced an older home and garage in what had largely developed as a commercial area in an office residential zone.
Buchanan Cellars	Employment Redevelopment	Demolition and New Construction	This development replaced two older homes with 3,920 ft^2 for employment and warehouse uses.

Community Context: McMinnville

City Policies

The four developments described above were constructed without any incentives from the city itself aimed at mixed use or redevelopment. The Village Quarter development received application fee discounts as an affordable housing project. Zoning is generally friendly to mixed use, with most commercial zones allowing multi-family housing outright. The City adopted an urban renewal district about a year and a half ago, but this tool has not yet been implemented regarding either mixed-use or redevelopment.

Market Forces

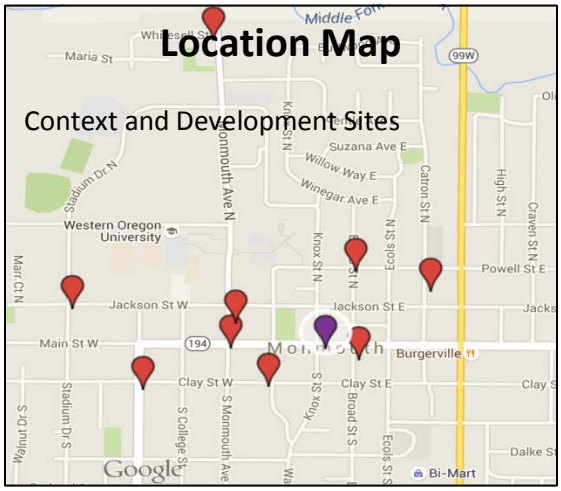
The market in McMinnville has not seen a strong push for redevelopment or mixed-use projects. The City would support such developments if they were proposed, but the market has been slow. McMinnville's distance from Portland may have an impact on the market push, as it is just far enough away that development does not respond to those market forces.

Attitudes Towards Development

Community – The community is fully supportive and has been excited to see the development that has occurred. The Kaos building was a particularly exciting case, as it took its name from an illegal WWII radio station, and has strong roots in local history. There has not been much development in the past ten years.

Monmouth

Mixed-Use and Redevelopment Case Study



Summary Data

- City Population: **9,755**
- Total Developments: **9**
- Number of Buildings: **9**
- Approx. acreage: **Unknown**
- Number of Residential Units: **34**
- Employment square footage: **3,000**

Development Narrative

	Type	Style	Details
183 Main St W.	Mixed-use Redevelopment	Rebuild of Burned Commercial	This building was a restaurant that burned and was rebuilt with six 2nd story apartments (3800 ft^2) and an additional 3000 ft^2 of retail. The City assisted with a grant/loan package using Urban Renewal District funds.
169 Broad Street S.	Mixed-use Redevelopment	Rehab	This development added a 2nd story apartment (540 ft^2) to existing retail. The City assisted with a façade improvement grant.
159 Monmouth Ave	Mixed-use Redevelopment	Rehab	This development added a 2nd story duplex (2552 ft^2) to existing retail. The City assisted with a façade improvement grant.
220-250 Warren St	Residential Redevelopment	Demolition and Rebuild	This development replaced a single family with two duplexes (6,000 ft^2).
595-599 Jackson Street	Residential Redevelopment	Demolition and Rebuild	This development removed an existing single-family home and added a triplex (4004 ft^2).
227-233 Whitman St	Residential Redevelopment	Rehab	This development added a duplex onto an existing single-family house (2936 ft^2).
231 Whitesell Street W. 1-7	Residential Redevelopment	Demolition and Rebuild	This development replaced a single family dwelling with 7 apartments (11,820 ft^2).
285 Broad Street N.	Residential Redevelopment	Rehab	This development added two quad dwellings onto a single-family (721 ft^2).

Community Context: Monmouth

City Policies

Monmouth uses its Urban Renewal District and Main Street District to encourage redevelopment and mixed use development.

Urban Renewal – The City has offered loan/grant packages and a dozen façade improvement grants through Urban Renewal funds to encourage redevelopment and mixed-use within the Urban Renewal District.

Main Street District – The City also encourages mixed-use development through code in its Main Street District. Any development of a certain size must include commercial element as primary use.

Additional policies focus on the downtown core for economic development, which encourages redevelopment.

Market Forces

The market pushes redevelopment and mixed use. When opportunities to develop become available, developers actively pursue them. The university student population is a primary driver of the market. Due to the size of the city and historic patterns, student housing is dispersed throughout the city. In Monmouth, 40% of housing is of duplex or higher density. For properties in medium or high-density zones, additional units can be built without dividing properties.

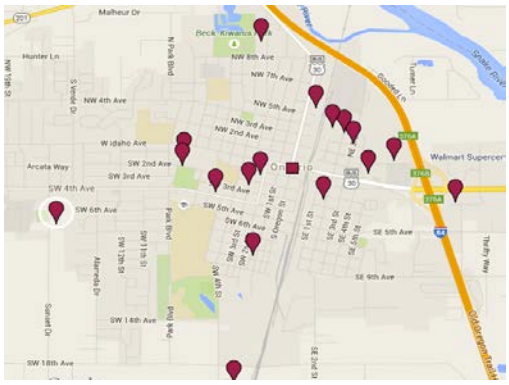
Attitudes Towards Development

Community – The community is generally supportive of mixed-use and redevelopment projects, in part because the developments tend to be small. In the long term, this development is the payoff of 15 years of investment in downtown. While students drive the market demand for the housing, the community has a positive attitude towards students and the University. City staff suggested that the students who come to Western Oregon University are looking for a smaller, quieter community for their college experience, and their behavior does not result in conflict with residents.

Ontario

Mixed-Use and Redevelopment Case Study

Map



Summary Data

- 2012 Population: **11,147**
- Total Developments: **17**
- Number of Buildings: **18**
- Approx. acreage: **Unknown**
- Number of Residential Units: **1**
- Employment square footage: **17828+** (some additions' square footage unknown)

Development Narrative – Profiles of Six Selected Sites

	Type	Style	Details
589 NE 1st St.	Industrial Redevelopment	Addition of a rail dock & conditioning tower	Americold, a cold storage facility, has made two separate additions on different lots in 2011 and 2015 respectively. Both have increased employment square footage by a total of about 7000 ft^2.
1255 SE 1st. Ave.	Commercial Redevelopment	Restaurant addition	Wingers Roadhouse Grill, a restaurant near I-84 added 1008 ft^2 to their establishment in 2011.
555 SW 4th Ave.	Commercial Redevelopment	Grocery store addition	The Red Apple Marketplace is a full service, faith-based grocery store that added 611 ft^2in 2013.
201 SE 2nd St.	Commercial Redevelopment	Retail store addition	Wilkins Saw and Power Equipment is a retail hardware store that added 800 ft^2 of retail space in 2014.
702 Sunset Dr.	Office Redevelopment	Office space addition	Lifeways is a behavior health clinic that offers mental health services in Eastern Oregon and Western Idaho. The Ontario location shares a building with the DMV and added 700 ft^2 of office space in 2015.
863 SW 1st St.	Residential Redevelopment	Single family converted to duplex	In 2012, this lot added an additional house behind the main structure, increasing the residential capacity by 1 unit.

Community Context: Ontario

City Policies

System Development Charges (SDCs) – The City of Ontario normally uses SDCs to cover the infrastructure costs associated with development. The City uses SDCs to cover water and sewer system improvements and transportation improvements. Water and sewer SDCs depend on the water meter size of added development, while the transportation SDCs depend on number of residential units (for residential development), number of employees or users (for industrial or institutional development), or square footage (for commercial development). For 2014 and 2015 however, the City has placed a moratorium on SDCs to encourage development. As long as the moratorium lasts, developers are not responsible for paying SDCs.

Code Review Streamlining – The City has also streamlined the review process for new developments. The Hearings Officer now has more authority to approve proposed developments. The City made this change recently in the hopes that a quicker approval process would incentivize development.

Market Forces

The research team was unable to speak to local officials about market forces.

Attitude Towards Development

Community – According to Ontario's Planning and Economic Development Director, the residents of Ontario are very supportive of development. Residents want to see their city grow and improve.

Elected Officials – Ontario's Planning and Economic Development Director says that current and past elected officials have been very active in promoting development in the City. Elected officials were responsible for the moratorium on SDCs and also played a role in pushing for a streamlined review of new development proposals.

Pendleton

Mixed-Use and Redevelopment Case Study

Location Maps

Summary Data

- 2012 Population: **16,715**
- Total Developments: **3**
- Number of Buildings: **4**
- Approx. acreage: **Unknown**
- Number of Residential Units: **20**
- Employment square footage: **Unknown**

Development Narrative

	Type	Style	Details
421-423 S Main St.	Mixed-Use Redevelopment	Rehab of historic building	This building is part of the downtown historic district and falls within Urban Renewal boundaries. City granted urban renewal funds for redevelopment: $100k for an elevator, $25,500 for façade improvements, and $10k for a sewer line. The upper level, previously vacant, now has 6 residential units. Ground floor houses office space, a salon, a dance studio, and a photography business (unknown square footage).
S Main St. Duplex	Residential Redevelopment	Demolition and rebuild	This property originally had one residential structure and falls within Urban Renewal boundaries. City granted urban renewal funds for redevelopment: unknown amount for demolition of existing structure. Developers recently completed a duplex on the lot.
Frazer Apartments	Residential Redevelopment	Demolition and rebuild	This property originally had one residential structure and a mobile home, and falls within Urban Renewal boundaries. City granted urban renewal funds for redevelopment: unknown amount for demolitions of existing structures. Developers recently completed a 12-unit apartment complex on the lot.

Community Context: Pendleton

City Policies

Pendleton uses both Urban Renewal and land acquisition to encourage redevelopment.

Urban Renewal – The City offers grants, funded through Urban Renewal, for demolitions, façade improvements, and improvements to 2nd story access. The City also often assists with land preparation using Urban Renewal funds.

Land Acquisition – Although land acquisition has not spurred *re*development in the past 5 years, the City occasionally purchases and sells or leases land to developers at reduced rates to encourage development. The City's recent acquisition and preparation of vacant land near the Olney Cemetery resulted in the development of 25 new residential units, with the potential for 47 more units in the future.

Market Forces

Pendleton lacks a robust supply of mid-range to high-end residential units. Much of the redevelopment described in the Development Narrative above resulted partially from developers' desire to improve and expand Pendleton's housing stock. In 2010, the developer of 421-423 S Main cited the lack of higher-end housing as his primary impetus for redeveloping the Main Street property (*East Oregonian*, 4/21/10).

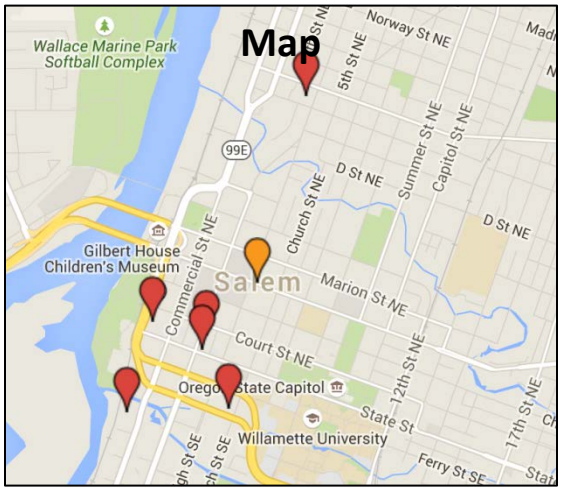
Attitudes Towards Development

Community – According to Pendleton's planning and community development staff, residents have a wide range of opinions regarding redevelopment. While many residents support the idea of development and growth in their city, many dislike the disruptions caused by redevelopment, and others feel the Urban Renewal district unfairly has access to more resources than other areas of the city.

Elected Officials – Pendleton's planning and community development staff report that the City Council generally supports and encourages redevelopment, particularly through their function as the Pendleton Development Commission, the entity that administers Urban Renewal funds. One member of Pendleton's City Council is himself a developer and has leveraged Urban Renewal funding often for improvements and expansions of residential units in the downtown core.

Salem

Mixed-Use and Redevelopment Case Study



Summary Table

- 2012 Population: **147,250**
- Total Developments: **6**
- Number of Buildings: **6**
- Approx. acreage: **Unknown**
- Number of Residential Units: **275**
- Employment square footage: **110,902**

Development Narrative

	Type	Style	Details
South Block Apartments	Mixed Use Redevelopment	Demolition and Rebuild	This redevelopment of a former paper manufacturing plant includes 185 residential units and approximately 15,000 ft^2 of commercial space.
295 Church Street	Mixed Use Redevelopment	Demolition and Rebuild	This redeveloped site includes 27 units and 14,400 ft^2 of commercial space.
Broadway Town Square	Mixed Use Redevelopment	Demolition and Rebuild	This redevelopment of a former fraternal organization property includes 21 residential units and 19,000 ft^2 of commercial space.
Metropolitan	Residential Redevelopment	Mixed Use Renovation	This renovation of a downtown building added a new residential floor with 8 units and had existing 20,900 ft^2 of commercial space.
The Rivers	Mixed Use Development	New Construction	This condominium tower includes 25 residential units and 30,715 ft^2 of commercial space.
McGilchrist-Roth Building	Mixed Use Redevelopment	Historic Building	This redevelopment of a downtown historic building included 9 residential units and 10,887 ft^2 of commercial space.

Community Context: Salem

City Policies

Salem has primarily supported mixed-use development and redevelopment through its Urban Renewal District and Historic district downtown and in nearby areas. These are also the areas with zoning that allows mixed use. The City is also working to simplify the zones that allow mixed use, which are primarily overlay zones at this point.

Urban Renewal – The City offers grants and tax breaks, funded through Urban Renewal, for demolitions and renovations in the downtown Urban Renewal district.

Historic Preservation – Historic preservation incentives come in the form of state and federal tax breaks, with some small city grants. While most historic districts are strictly residential, the downtown historic district is used to promote redevelopment and mixed use.

Market Forces

Mixed-use development was much more prevalent during the height of the market. Since the Great Recession, many of those developments lost money, though they are starting to be successful now. Particularly mixed-use developments with expensive condos struggled to make a profit since single-family homes are relatively inexpensive in Salem. The market is still not strong for mixed use, so the City uses incentives strategically.

Regarding redevelopment, there was much more residential infill in the past ten years through lot divisions and accessory dwelling units, but that has tapered off due to the market crash and small lot sizes. Employment redevelopment is occurring in South Salem exclusively due to market forces. The City does not have any programs to support it, but strip malls are being redeveloped and quickly leased. Other parts of town have no redevelopment, so it is highly dependent on the area.

Attitudes Towards Development

Community – The community is generally quite supportive of mixed use and redevelopment. The City is looking to meet some of its current residential land need through mixed-use development, and City staff indicated that the public seems to support this strategy.

Elected Officials – City Council and other leadership are very supportive of mixed use. The mayor lives in a mixed-use building.

Analysis of Land Use Efficiency in Oregon Cities

A Report to the HB 2254 Rules Advisory Committee

September 2015

Final Report

Prepared for:

HB 2254 Rules Advisory Committee

Department of Land Conservation & Development

Prepared by:

University of Oregon
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UNIVERSITY OF OREGON

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EXECUTIVE SUMMARY

This report presents analysis of historic land use efficiency in Oregon cities to support development of a simplified land need methodology for use in urban growth boundary (UGB) review. The analysis is intended to address parts of the research requirements stated in House Bill 2254 (codified as ORS 197A) relating to historic land use efficiency.[1]

Overview

In response to the growing complexity of UGB amendment process, the 2013 legislature enacted HB 2254 (codified at ORS 197A) to provide for new, simplified methods for growing cities to evaluate the capacity of their UGBs. The law requires the LCDC to adopt rules to establish these methods before January 1, 2016. LCDC appointed a Rulemaking Advisory Committee (RAC) to assist in development of these rules.

HB 2254 requires that the LCDC produce an administrative rule that implements the legislation. As part of that rulemaking process, the bill requires that the LCDC establish factors for converting forecasted population and employment growth into estimates of land need for housing, employment and other categories of uses. The bill requires the factors in part "be based on an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state…"

Based on these requirements, DLCD staff identified the following objectives for this research:

1. Determine the historical rate of "land efficiency" and land consumption (per person/acre).
2. Determine past employment growth rates/trends of land utilization.

This research was primarily conducted through analysis of Geographic Information System (GIS) data. The UO research team collected data for as many cities as possible.

For the purpose of this research, we define the *urban area* as areas within city limits that are also inside urban growth boundaries in 216 cities outside of the Portland UGB. We use the annual population estimates from Portland State University as a proxy for urban population (the annual population estimates are for areas within city limits). Because of data availability and population levels and growth rates (described further on page 9), the cities are divided into Tiers. Tier 1 (130 cities) includes all cities outside Portland Metro UGB except cities that are growing by less than 1% in average annual growth rate per year between 2003-2012 with a population under 5,000. Tier 2 (127 cities) includes cities for which

[1] https://www.oregonlegislature.gov/bills_laws/lawsstatutes/2013ors197A.html

ORMAP taxlot data were available. Tier 3 (122 cities) includes cities for which county level assessor's data was obtained.

Findings

Following are key findings of the UO Team's research:

- **Larger cities account for the majority of population growth.** Between 2005 and 2012, nearly 60% of the population growth in cities outside the Portland Metro UGB occurred in cities over 25,000 (11 cities) and 75% occurred in cities over 10,000 (28 cities).

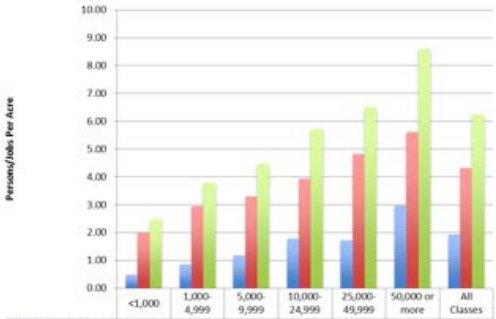
- **Between 2005 and 2012, population increased faster than employment**. Based on covered employment data, the 216 cities outside of the Portland Metro UGB added about 5,900 jobs between 2005 and 2012. Employment grew at a rate much slower than population. Between 2005 and 2012, employment for the 216 cities outside the Portland Metro UGB increased 1.1%; population increased 7.9%. This difference can largely be attributed to the Great Recession.

- **As defined by HB 2254 and by this study, the use of land in cities became more "efficient" between 2005 and 2012.** For the 130 cities outside the Portland Metro UBG included in the study, population density within city limits (total people divided by total acres) increased by 12%. Population density for all land in city limits increased from 3.86 persons per acre (2,474 persons per square mile) to 4.32 persons per acre (2,763 persons per square mile).

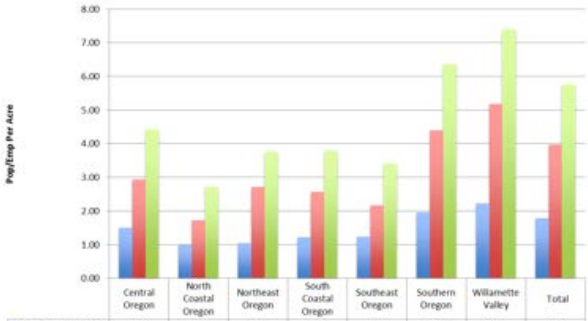
- **Employment densities increased between 2005 and 2012**. For the 130 cities outside the Portland Metro UBG included in the study, employment density within city limits increased by 4%. Employment density for all land within city limits increased from 1.86 employees per acre (1,188 employees per square mile) to 1.94 employees per acre (1,240 employees per square mile). Note that the *density* of employment increased slightly despite the fact that total employment grew slowly.

- **Smaller cities, on average, are less dense than larger cities.** For the 216 cities outside the Portland Metro UGB, cities with populations less than 1,000 averaged 679 persons per acre, while cities over 50,000 averaged 3,202 persons per acre. Figure S-1 shows population and employment density by city size and region.

Figure S-1. Population and Employment Density (persons and jobs per acre) for Tier 1 Cities By City Size and Region, 2012, Non-Prohibitive Acres in City Limits (n=130)



	<1,000	1,000-4,999	5,000-9,999	10,000-24,999	25,000-49,999	50,000 or more	All Classes
Employment Density	0.49	0.85	1.18	1.78	1.71	2.97	1.94
Population Density	1.99	2.95	3.30	3.94	4.81	5.62	4.32
Pop+Emp Density	2.48	3.80	4.48	5.72	6.52	8.59	6.25



	Central Oregon	North Coastal Oregon	Northeast Oregon	South Coastal Oregon	Southeast Oregon	Southern Oregon	Willamette Valley	Total
Employment Density	1.50	0.98	1.05	1.22	1.24	1.96	2.23	1.78
Population Density	2.93	1.73	2.72	2.58	2.17	4.40	5.18	3.98
Pop+Emp Density	4.44	2.72	3.77	3.80	3.41	6.36	7.41	5.76

- **Regional differences exist**. Cities in rural regions generally have lower population and employment densities (as measured in persons or employees per acre). Cities in the Willamette Valley and Southern Oregon region have higher average population and employment densities than other regions.

- **On average, single-family/plex[2] development became more efficient**. For the 120 cities included in the single-family density analysis, the data show a trend of increasing density over time. Average single-family density in the period between 2008-2012 was 22% higher than average density between 1993-1997. Single-family/plex density was 5.22 taxlots per unprohibitive acre[3] in 1993-1997 and increased to 6.38 taxlots per unprohibitive acre in 2008-2012. The trend of increasing single-family and plex densities is seen for all city sizes.

- **Multifamily residential densities are difficult to analyze due to data constraints**. Most assessors do not include counts of multifamily dwelling units in their assessment databases. Multifamily development in the 26 cities the research team had data for averaged about 12 dwelling units per net acre. To supplement the small sample, the research team reviewed Goal 10 housing studies. The weighted average for the 18 cities that included unit counts was 15.3 dwelling units per net acre. Time series data for multifamily residential density was not available.

[2] Oregon Department of Revenue defines Property Classifications. This analysis includes residential (class 100) which includes single family, duplexes, triplexes, and quadplexes. Parcels with 5 or more units are classified as multifamily. Thus, our analysis refers to "single family and plex"

[3] In this analysis, our denominator is the number of Unprohibitive land, which excludes water and floodways. We further describe our methods for considering land on page 12.

- **Employment densities fall within expected ranges**. The analysis of employment density showed an average density of 17.2 employees per net acre for commercial employment, and 8.7 employees per net acre for industrial employment. These results are in the range of those reported in the Goal 9 workbook.

- **Land for roads, parks, and schools accounts for a significant portion of land in city limits.** On average, acreage not in tax lots or on exempt land in governmental uses constitute 29% of acres in city limits. The research team used land not in tax lots in city limits as a proxy for roads. Land not in taxlots averaged 18% for the 180 cities included in the analysis.

- **Statistical analysis shows that no simple relationship exists between city size and density or between region and density**. While average densities increase by city size, simple empirical models show only slight correlation between city size and density because of the high degree of variability in smaller cities.

Implications

A fundamental purpose of HB 2254 is to make the process for adding land to UGBs simpler. One way to make things simpler would have been to find strong relationships between a relatively easily measured or estimated variable (e.g., population) and land use / need.

The results clearly show that cities are becoming more efficient over time. But the relationships are not consistently simple and uniform:

- **Smaller cities, on average, are less dense than larger cities.** This suggests that methodologies that incorporate city size may be appropriate.

- **The density analysis provides baseline data that can inform density thresholds.** No previous studies in Oregon have included such a broad and comprehensive review of land use efficiency.

- **Larger cities account for the majority of population growth**. Between 2005 and 2012, 75% of the state's population growth occurred in cities over 10,000. Because these cities are growing, they are candidates to use the simplified UGB methodology authorized by HB 2254. If the intent of UGB streamlining is to develop simpler methods to estimate land need, methodologies that are focused on larger cities will be most effective in implementing a UGB streamlining process.

- **Regional differences exist, and could be incorporated into a simplified methodology**. The results show that cities in the Willamette Valley and Southern Oregon (and to a lesser extent, Central Oregon) have achieved higher residential and employment densities than other regions. A simplified methodology could recognize these differences and establish density thresholds based on location.

- **Limits to efficiency increases should be recognized and incorporated into the methodology**. Focusing on one element of the analysis—single-family

and plex efficiency—the data clearly show that on average cities are generally becoming more efficient, but there are likely upper bounds of efficiency. Few cities averaged over 8 units per acre for new housing in any time period, and those are outliers.

- **Methodologies for roads and public lands should apply to all lands, not only residential lands**. Current state policy (OAR 660-024) allows cities to use a safe harbor assumption of 25% for roads, schools and parks. The research suggests that these uses do not always occur in residential areas and that a factor applied to all land might provide a more consistent and accurate approach.

- **Simplified methods that use a population or employment factor per improved acre are possible**. Distilling the numbers to a persons per acre for residential land and employees per acre for employment land and then adding land for roads, schools, and parks would be the simplest available method, and should be further analyzed for its effectiveness.

In summary, the analysis presented in this report represents the most comprehensive and accurate analysis possible in the context of the objectives outlined in HB 2254. To the extent the data allow, it provides the foundation to address the requirement that the method:

> *Be based on an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state.*

CHAPTER 1: INTRODUCTION

This report presents analysis of historic land use efficiency in Oregon cities to support development of a simplified land need methodology for use in urban growth boundary (UGB) review. The analysis is intended to address parts of the research requirements stated in House Bill 2254 (codified as ORS 197A) relating to historic land use efficiency.[4]

Background

With the passage of Senate Bill 100, the Oregon statewide land-use program became law in 1973. Its iconic requirement is that every city have an Urban Growth Boundary (UGB) to (1) protect resource lands outside the boundary, and (2) encourage more efficient (denser) development patterns inside the boundary. Subsequent interpretations and expansions of the UGB and related requirements by the Land Conservation and Development Commission (LCDC), its staff (DLCD), and the courts addressed the pattern of development inside the UBGs (e.g., mixed-use, transit-oriented).

As of 2015, there were 242 incorporated cities and 36 counties in Oregon, with 217 UGBs. We were unable to find data on the number of acres within UGBs in the mid-1980s, after all the UGBs had been adopted and approved. In 2012, there were 570,896 acres in UGBs and 447,400 acres in city limits, not including the Portland Metro UGB.[5]

When the architects of SB100 established UGBs 40 years ago, they had little guidance. Guidance in the bill led to an interpretation that the law required cities to draw a boundary with a supply of buildable land sufficient to accommodate approximately 20 years of development. But cities used different techniques to forecast growth, development, and buildable land; had different goals; and had different interpretations of the requirements in the 10 years after the program started, when almost all of the initial UGBs were established.

Since then many procedures have been standardized by administrative rules. Since UGBs get established only once, those rules are about the process for *amending* UGBs (OAR 660-024 and to a lesser extent, OAR 660-009 and OAR 660-010). While the rules clarified some aspects of UGB amendments, they also had the effect of making the process more complex. This complexity has resulted in many boundary reviews taking five or ten years (current record: almost 20 years and counting) as the process of analysis, findings, review, and adjudication repeats itself. A stated purpose of ORS 197a is that the methods "Become, as a result of reduced costs, complexity and time, the methods that are used by most cities with growing populations to manage the urban growth boundaries of the cities."

[4] https://www.oregonlegislature.gov/bills_laws/lawsstatutes/2013ors197A.html

[5] We do not include the Portland Metro figures here because HB 2254 does not apply to Portland Metro.

UGB requirements are always at the front of critiques of the Oregon land-use program. They were a major impetus for several statewide ballot measures in the 1980s and 1990s to repeal the state's planning program (all unsuccessful), Ballot Measures 7 and 37 (2000 and 2004), the "Big Look" review of the program ten years ago, and DLCD's almost continuous UGB committees for the last seven years. Despite the critique, little has been done to simplify the process.

In response to the growing complexity of UGB amendment process, the 2013 legislature enacted HB 2254 (codified at ORS 197A) to provide for new, simplified methods for growing cities to evaluate the capacity of their UGBs. The law requires the LCDC to adopt rules to establish these methods before January 1, 2016. LCDC appointed a Rulemaking Advisory Committee (RAC) to assist in development of these rules.

Purpose and Methods

HB 2254 requires that the LCDC produce an administrative rule that implements the legislation. As part of that rulemaking process, the bill requires that the LCDC establish factors for converting forecasted population and employment growth into estimates of land need for housing, employment and other categories of uses. The bill requires the factors:

- Be based on an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state;
- Reflect consideration by the Commission of any significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state;
- Be designed to encourage an increase in the land use efficiency of a city, subject to market conditions; and
- Provide a range of policy choices for a city about the form of its future growth. [6]

Based on these requirements, DLCD staff identified the following objectives for this research:

1. Determine the historical rate of "land efficiency" and land consumption (per person/acre).
2. Determine past employment growth rates/trends of land utilization.

This research was primarily conducted through analysis of Geographic Information System (GIS) data. The UO research team collected data for as many cities as possible. Chapter 2 describes the specific methods in more detail.

[6] The rule also requires other research tasks; our research focuses narrowly on this requirement.

Organization of Report

The remainder of this report is organized as follows:

- **Chapter 2: Framework for Analysis of Land Use Efficiency** presents a description of how the UO research team operationalized the concept of land use efficiency and a list of metrics used to measure land use efficiency.
- **Chapter 3: Characteristics of Land Within City Limits** presents data on various characteristics of land for all cities outside the Portland Metro UGB.
- **Chapter 4: Residential Land Use Efficiency** presents analysis of residential densities by housing type and time period for all cities outside the Portland Metro UGB.
- **Chapter 5: Employment Land Use Efficiency** presents analysis of employment densities by type and time period for all cities outside the Portland Metro UGB.
- **Chapter 6: Conclusions and Implications** summarizes the conclusions of the research and describes the implications for development of a simplified land need methodology for all cities outside the Portland Metro UGB.

This study also contains the following appendices:

- **Appendix A: ORS 197A** presents the codified language of HB 2254 that guided the research presented in this report.
- **Appendix B: List of Cities by Tier** presents a list of all cities included in the study and information about their relationship to counties, regions, city size classes and analysis tiers.
- **Appendix C: Effect of Constraints on Residential Density** presents an analysis of single-family and plex densities on constrained, partially constrained, and unconstrained lands.
- **Appendix D: Additional Data** includes data on City Characteristics, data on Residential Development and Density, and data on Employment Development and Density.

CHAPTER 2: FRAMEWORK FOR ANALYSIS OF LAND USE EFFICIENCY

This chapter presents the framework used by the UO research team for this analysis. It begins with an overview of definitional issues related to implementation of research on land use efficiency. It concludes with a description of metrics evaluated by the UO research team.

What HB 2254 Requires

Following is text from HB 2254 relevant to research on land use efficiency:

> Section 2(2): Encourage, to the extent practicable given market conditions, the development of urban areas in which individuals desire to live and work and that are *increasingly efficient in terms of land uses and in terms of public facilities and services.*

and

> Section 2(4): Encourage cities to *increase the development capacity* within the urban growth boundaries of the cities.

and

> Section 3(5)(a): Evaluate, every five years, the impact of the implementation of sections 4 (2) and 5 (2) of this 2013 Act on *the population per square mile, livability in the area, the provision and cost of urban facilities and services*, the rate of conversion of agriculture and forest lands and other considerations.

and

> Section 4(2)(B)(b) The urban *population per square mile* will continue, subject to market conditions, to increase over time on a statewide basis and in major regions of the state, including that portion of the Willamette Valley outside of Metro.

[emphasis added]

These passages highlight at least one specific indicator (population per square mile) and several other concepts (public facilities service efficiency, development capacity, livability, cost of urban facilities and services). Our scope of work for DLCD was intended to focus narrowly on analysis of land use efficiency; other parts of the analysis are being completed through other studies.

Section 4(2)(B)(b) also refers to “urban” population. In the context of the Oregon land use program, urban has typically been defined as the developed area within a UGB. Our analysis shows that the city limits of many jurisdictions extend outside the UGB. The nature of development in unincorporated areas of UGBs tends to be a mixture of lower density uses. As such, one would expect that the efficiency of land

use in these areas would be lower than in city limits. In short, our interpretation of HB 2254 is that section 4(2)(B)(b) refers to urban in the context of Goal 14 (e.g., developed lands within the UGB).

For the purpose of this research, we define the *urban area* as areas within city limits that are also inside urban growth boundaries. We use the annual population estimates from Portland State University as a proxy for urban population (the annual population estimates are for areas within city limits).

It is essential that we be clear about the operational definition of "efficiency" for the purpose of this research. Our interpretation of the legislative purpose of this part of the HB 2254 research (note that the bill identifies other research tasks) is to develop a simplified methodology for determining land need. This is articulated in Section 4(3)(b) of the bill which requires that the determination of supply and development capacity within UGBs:

> Be based on an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state.

Thus, we have a numerator (population and employment) and a denominator (land area). **In short, the legislation points to an operational definition that equates measures of land use efficiency to measures of density** (e.g., people or dwelling units per acre)**.** The following section describes how the UO research team operationalized the concept of land use efficiency for the purpose of this study.

Definitions

Central to the idea of empirical research is measurement. In a statistical analysis sense, **measurement** is the assignment of numbers to a phenomenon that one is interested in analyzing. Often the phenomenon of concern is a broad one that does not have any single, accepted measure (e.g., patriotism, altruism, livability). Thus, to do empirical work about important concepts researchers must **operationalize** them: i.e., they must define the process they will use to measure the concepts. Before addressing key definitions for this study, it is useful to revisit definitional linkages in measurement.

- **Concepts** are measured indirectly through **indicators** specified by **operational definitions**

- **Operational definitions** are statements that specify how a concept will be measured

- **Metrics** refer to things that can be measured directly and are linked to a concept through an operational definition. The key concept in HB 2254 that our research addresses is "efficiency." The statute does not define how to measure land use efficiency. Absent an operational definition, one could identify many different measures of efficiency. A logical starting point is the dictionary and common usage: efficiency means either (1) maximizing a

desired output for some given amounts of input, or (2) minimizing inputs for some given amount of output.

Economists think of efficient use of resources as multidimensional: both the desired outputs and the required inputs are many, and efficient production of those benefits requires an optimization, not a simple maximization or minimization. Economists (and the public, for that matter) would typically measure the efficiency of a public policy as the ratio of benefits to costs: a higher ratio means more efficiency.

That notion can be found in Oregon land use law: in Senate Bill 100 and its subsequent interpretation. The LCDC is supposed to balance "conservation and development," and potentially the performance of a plan or program on all the statewide goals.

HB 2254 is focused on just one of those goals (Goal 14). Its definition of efficiency is more narrow, and almost certainly should be interpreted to mean that it is focused on just one of the inputs (land) to one of the desired factors of livability (built space that provides shelter for residential, business, and social purposes).

Operational definitions

That focus suggests various possible operational definitions of *land use efficiency.* Most posit some desired population, employment, land, or built-space outcome (the numerator) relative to some input of land (denominator). Efficiency then means "more output, less input." Since the input (denominator) to be economized is land, any efficiency measure of this type is some form of a measure of *density*.

- Density or intensity of land use
- Density of population or employment (people per area)
- Density of housing (dwelling units per area)
- Density of economic activity (built space per area, business establishments per area, output per area)

There are potentially measures of land use efficiency that are not density based. They would presumably be trying to economize on inputs other than land. For example:

- How well land could be serviced (efficiency means reducing service *costs*)
- How well land development patterns create desirable communities or enhance community livability.

In short, this report operationalizes land use efficiency through a range of density estimates: generally, population per square mile or acre, dwelling units per acre, and employees per acre. Variations on all of these general metrics are possible through use of different numerators and denominators.

Metrics

The measurement of land use efficiency requires a specific set of defined variables or metrics. For the purposes of this study we use the following definitions:

- **Metrics** is a broad term to cover, in general, everything related to collecting, analyzing, interpreting, and benchmarking data.
- **Data** are also defined broadly to mean anything that can be described (preferably and usually, but not necessarily, measured).
- **Indicators** are data that relate in some logical way to a **concept** (as defined above).
- **Benchmarks** or **Targets** are normative judgments about a desirable level for an indicator, now or in the future. Our research does not involve the development of benchmarks or targets—that is the work of the RAC.
- **Measures,** for the purpose of this study, are indicators that relate to land efficiency and density. In other words, we try to limit our use of the term "measurement" to those that are measurements of land efficiency / density.

To obtain measures of efficiency, we rely on a variety of datasets to obtain several potential numerators and denominators that offer numerous measures of efficiency.

Our metrics include indicators and efficiency measures. We classify **indicators** as static (one year of data) or dynamic (change over time) metrics that define the numerator or denominator. **Efficiency measures** are normalized metrics, meaning that we divide a static numerator (population, housing units, or employment) by a static denominator (area.) The rest of this section discusses broad categories of metrics used for this study (in some way related to the concept of land efficiency).

Land characteristics

Land characteristics include basic area metrics (e.g., city limits within UGBs), as well as identification of lands that are not available for development (e.g., water bodies or areas outside of tax lots). These measures also address constrained and unconstrained land (and prohibitive land—land with constraints deemed so binding that no development can occur) based on development constraints including slopes over 25%, floodways, water bodies, and wetlands (using state-level data sources).

Residential Uses

Data from PSU Population Estimates, U.S. Census, and County Property Assessors are used to calculate these indicators. Population may be defined directly as the number of persons or indirectly based on the number of households or housing units. Population, housing units, and residential parcels are used to compute indicators and efficiency measures related to residential uses. These metrics convey the number of persons and housing units within the city limits, providing several potential numerators for calculating efficiency measures.

Non-residential uses

Total employment and establishments from the statewide Quarterly Census of Employment and Wages (QCEW) are used to estimate employees. Data from county assessors are used to estimate the amount of employment and "other" land[7] within city limits. These indicators provide the numerators and denominators for calculating efficiency measures related to employment and "other" uses.

Dimensions of Analysis

This section describes key dimensions of analysis included in the research. This includes study area definitions, dates for time-series data, and constraints.

Units of Analysis and Samples

The unit of analysis for the study is city limits within urban growth boundaries (UGBs) excluding the Portland Metro UGB.[8] The research team selected this geography after consultation with DLCD staff and the Working Group. The emphasis of this research is on measuring efficiency of urban land uses. The research team determined that including unincorporated areas within UGBs would yield unreliable results. Areas within city limits that are outside of UGBs were also excluded; these lands cannot be developed to urban standards because they are outside a UGB.

There are 216 cities in Oregon that are outside the Portland Metro UGB. The study excludes all cities under 5,000 population that had average annual growth rates of less than 1% between 2003 and 2012.[9] That excludes 86 cities. The rationale for excluding these cities is (1) they are not growing and will be unlikely to seek a boundary expansion in the foreseeable future (we note that the legislation focuses on cities that are growing), and (2) they have developed a small number of parcels in recent years. We also excluded a subset of counties for which nearly all cities were below 5,000 in population with average annual growth rates of less than 1% between 2003 and 2012 and for which data was not readily available. These counties included: Gilliam, Grant, Harney, Lake, Sherman, Wallowa, and Wheeler.

That exclusion leaves 130 cities for evaluation. For these cities, the research team did three types of analysis (which it called "tiers"):

- Tier 1: Analysis by city limit (130 cities). This is the coarsest level of analysis and provides metrics using city limit boundaries, PSU Population Estimate data and Census data. Tier 1 analysis includes static (point in time) and dynamic (trend) analysis.

[7] "Other" land includes public and institutional uses such as parks, schools, religious institutions, nonprofit groups, etc. In property assessor's databases, it is designated as "exempt."

[8] Metro is explicitly excluded in HB 2254 and will not be eligible to use a simplified review methodology.

[9] Some larger cities may not be included in the final study due to data availability. The final report will list all of the cities included in the study by Tier.

- Tier 2: Static Analysis of tax lots within city limits (127 cities). This is based on ORMAP taxlot data from the Oregon Geospatial Data Service Center, and supplemented with select county assessor's data that are not available in ORMAP. ORMAP allows a fine level of analysis at the tax lot level, but does not include key attributes such as year built that allow analysis of trends.

- Tier 3: Dynamic analysis of tax lots within city limits (122 cities). This is based on county level tax assessor's GIS data that allows detailed analysis of residential densities over time.

Analysis presented within this report uses Tier 1, 2 and 3 data. We took the approach of including as many cities as possible for each table based on available data. Each figure and table identifies the number of cities and tier of data used. Map 2-1 shows cities outside of the Metro UGB that were included in the Tier 1 analysis. Appendix C provides a list of the cities by tier.

Map 2-1. Cities included in the land use efficiency analysis (Tier 1)

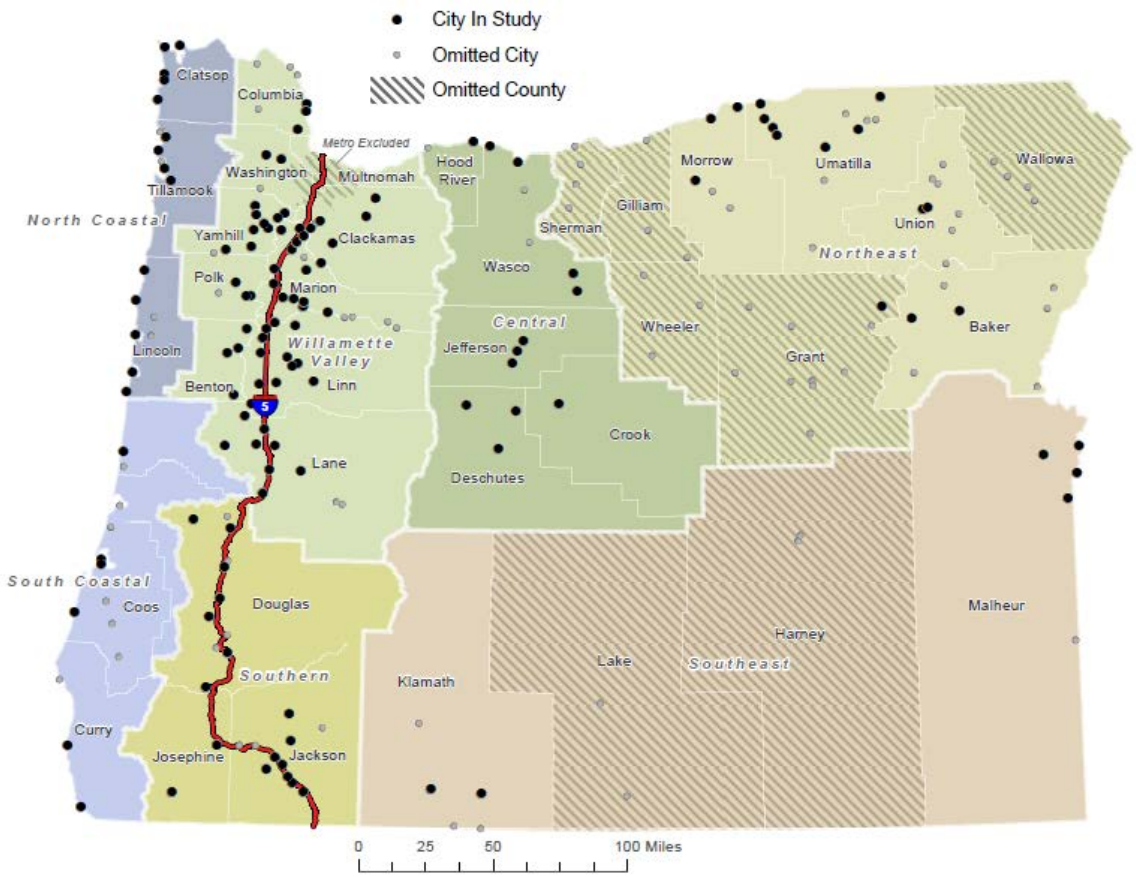
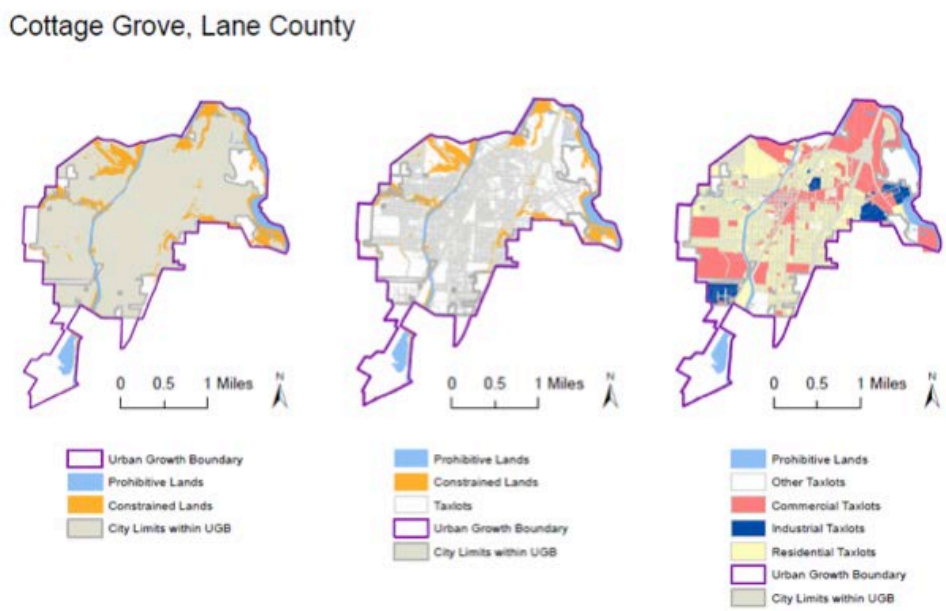


Figure 2-1 provides a conceptual overview of the way the research team approached the tiered analysis. The image on the left in Figure 2-1 shows a Tier 1

analysis – all land in the city limit within the UGB. Tier 1 efficiency measures include population and employment per non-prohibitively constrained acre.[10] The middle image shows tax lots in the city limit (Tier 2). Key indicators are the number of employees and population on tax lots or on tax lots with improvements. The image on the right shows tax lots by property classification (Tier 3). Key indicators include the size of tax lots with improvements and the density of single-family/plex housing

Figure 2-1. Sample Tier Analysis



Geography and City Size

The research team also conducted analysis by geographic region and city size, as directed by the statute which discusses different rules for cities greater and less than 10,000, and discusses key trends in “major" regions of the state. Table 2-1 shows cities by size class and tier. The total number of incorporated cities outside the Metro UGB is 216. A total of 130 cities are included in Tier 1, 127 in Tier 2, and 122 in Tier 3. The number of cities in each size class decreases as population increases.

[10]Figure 2-1 shows constrained lands to illustrate the location. The Research Team conducted a separate analysis of constrained lands.

Table 2-1. Cities by Size Class and Tier

	Number of Cities			
City Size	Total Cities	Tier 1 Cities	Tier 2 Cities	Tier 3 Cities
<1,000	81	26	25	23
1,000-4,999	79	48	46	44
5,000-9,999	28	28	28	27
10,000-24,999	17	17	17	17
25,000-49,999	4	4	4	4
50,000 or more	7	7	7	7
Total	**216**	**130**	**127**	**122**

Table 2-2 shows cities by region and tier. The research team used seven regions for most of the analysis; we collapse these regions for the purpose of some of the statistical analysis included in Chapter 6. The region with the most cities is the Willamette Valley.

Table 2-2. Cities by Region and Tier

	Number of Cities			
Region	Total Cities	Tier 1 Cities	Tier 2 Cities	Tier 3 Cities
Central Oregon	15	12	12	9
North Coastal Oregon	19	14	14	12
Northeast Oregon	56	15	12	12
South Coastal Oregon	13	6	6	6
Southeast Oregon	14	6	6	6
Southern Oregon	24	17	17	17
Willamette Valley	75	60	60	60
Grand Total	**216**	**130**	**127**	**122**

Based on input from the Rulemaking Advisory Committee (RAC), we conducted analysis by fewer regions (two variations: Coast, Central, Eastern, I-5 and Coast; Central/Eastern, I-5) and size classes (Under 10,000 population and Above 10,000).

Time Series

A key objective of this research is to analyze *trends* in land use efficiency. By definition, trend analysis requires time-series data. As a baseline, the research team needed a clean and consistent UGB and city limit boundary layer for the same year. We obtained the data from Oregon Explorer and determined that 2005 was as far back as we could go and still have reliable data. The research team used 2012 as the most recent year because that is the most recent year that the Quarterly Census of Employment and Wage (QCEW) data are available. Thus, time series analysis for most of the metrics is for the 2005-2012 time period. The analysis of single-family and plex densities is for the 1993-2012 period.

Constraints

Constraints play a role in land use efficiency. The research team hypothesized that development on constrained lands would be less efficient than on unconstrained lands.

As a starting point for our analysis, we used the direction provided in the Goal 9 and 10 administrative rules to select constraints. Because the analysis is statewide, data sets that are consistent across the state were required.

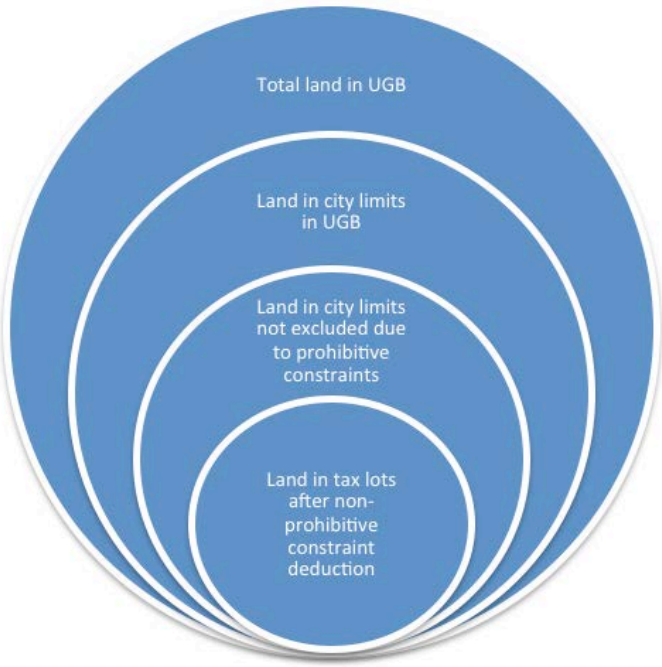
To calculate constrained and prohibitive lands for the city limits the research team, in consultation with DLCD staff, included water features, floodways, 100-year flood zone, wetlands, and slopes greater than 25% as constraints. Not all constraints, however, have the same impact on land use efficiency. The research team hypothesized that areas in water, for example, have very little development potential. To recognize this fact, we classified constraints as either (1) completely prohibitive, or (2) constrained:

> **Completely Prohibitive**: The water features and floodways were clipped to the city limits, merged, and calculated to determine the land area completely unavailable for development.
>
> **Constrained**: The 100-year flood zone, wetlands, and slopes greater than 25% were clipped to the city limits, merged, and the prohibited areas subtracted out to accurately calculate the percent and acres constrained within each city.

Completely prohibitive lands were removed from all density calculations. The research team analyzed the effect of constrained lands on land use efficiency for single-family and plex housing, as discussed further in appendix C.

Figure 2-2 shows how different land areas can be used as denominators for density calculations. At the broadest level, densities could be calculated on all land within UGBs, acreage within city limits, and acres available for development (e.g., non-prohibitive acres in city limits).

Figure 2-2. Potential Denominators for Density Calculations Based on Land Area



CHAPTER 3: CHARACTERISTICS OF LAND WITHIN CITY LIMITS

This chapter summarizes data describing general characteristics of Oregon cities outside the Metro boundary. The intent is to provide context for the detailed analysis of residential and employment density presented in chapters four and five. Portions of the analysis presented in this chapter are also responsive to the HB 2254 requirement that speak to land use efficiency in terms of increased population per square mile over time (e.g., the Tier 1 analysis). We look at city limits inside UGBs and ignore the 28 cities for which city limits extend beyond UGBs. **All depictions of land and density inside the city limit exclude area outside UGBs.**

Chapter 2 described how the research team sorted cities into tiers, depending on the availability of information. This chapter includes analysis for all cities outside the Metro UGB, Tier 1 cities, and Tier 2 cities. To ease confusion, section headings, tables and charts are labeled with the tier that corresponds with the data. The remainder of this chapter is divided into five subsections, with the corresponding tiers used for analysis in parentheses:

- Population and Employment Density (all cities)
- Housing Mix (all cities)
- Public Land and Roads (ORMAP cities)
- Constrained & Prohibited Lands (Tier 1 cities)
- Summary of Findings

Population and Employment Density (All Cities)

Table 3-1 displays the total acres within UGBs in Oregon for 2012, sorted by city size. The data show that Oregon cities outside the Metro UGB had a total of 571,030 acres within their UGBs in 2012. The data show that the number of cities by size class decreases as population increases.

Oregon remains a relatively rural state, with 160 of the 216 (75%) cities having a population of less than 5,000 residents, but accounting for 27% of the total acres within UGBs. Conversely, 11 cities have a population over 25,000 people, and represent a combined 34% of acreage within UGBs. Cities with populations between 5,000 and 25,000 contain 40% of the acreage in UGBs.

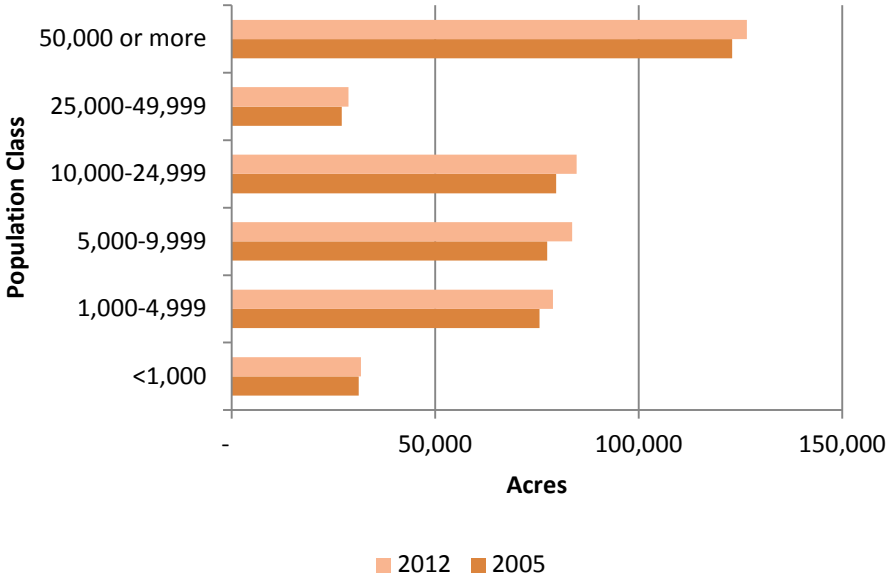
Table 3-1. Acres in UGB by City Size, all non-Metro cities, 2012 (n=216)

City Size	Number of Cities	Percent of Cities	Acres in UGB	Percent of Acres
<1,000	81	38%	38,253	7%
1,000-4,999	79	37%	112,271	20%
5,000-9,999	28	13%	111,008	19%
10,000-24,999	17	8%	117,974	21%
25,000-49,999	4	2%	33,234	6%
50,000 or more	7	3%	158,290	28%
Total	**216**	**100%**	**571,030**	**100%**

Note: Percents may sum to more than 100 due to rounding error

Figure 3-2 presents the total acreage within city limits and within UGBs for 2005 and 2012 by city size. In 2005, the 216 cities outside the Metro UGB had a total of 414,259 acres within city limits and UGBs. In 2012, that number was 434,490 acres.[11] Thus, non-Metro cities added 20,231 acres between 2005 and 2012 through annexation or UGB expansion—an increase of 4.9%. The largest change in acres within city limits was for cities with a population between 5,000 and 25,000 residents. Cities with less than 1,000 residents saw the smallest increase in acreage within their city limits.

Figure 3-2. Acres in City Limits within UGBs by City Size, all non-Metro cities 2005 and 2012 (n=216)



[11] In 2012, Non-Metro cities had 793 acres in city limits that were outside of the UGB.

Table 3-3 shows population change between 2005 and 2012 for all non-Metro cities. The smallest cities (less than 1,000 residents) saw a decrease in population while all other cities saw at least a 6.5% growth in population. While cities of 50,000 or more saw the highest number of new residents (coinciding with nationwide trends), cities between 25,000 and 50,000 saw the highest increase as a percentage of city population.

Nearly 60% of the population growth in the state occurred in cities over 25,000 and 75% occurred in cities over 10,000. Seventy-one percent of the 2012 population was in cities over 10,000. In this sense, those cities are growing faster on a per unit basis (for example, more residents per 1,000 existing residents).

Table 3-3. Population Change, 2005-2012, by City Size, all Non-Metro cities (n=216)

City Size	Number of Cities	2005	2012	2005-12 Change	2005-12 Percent Change	Share of Total Growth
<1,000	79	34,550	33,772	-778	-2.3%	-1%
1,000-4,999	81	170,460	181,620	11,160	6.5%	10%
5,000-9,999	28	201,795	218,885	17,090	8.5%	16%
10,000-24,999	17	268,645	285,375	16,730	6.2%	15%
25,000-49,999	4	110,850	130,255	19,405	17.5%	18%
50,000 or more	7	588,975	633,395	44,420	7.5%	41%
Total	**216**	**1,375,275**	**1,483,302**	**108,027**	**7.9%**	**100.0%**

Table 3-4 shows population change for all non-Metro cities between 2005 and 2012 by region. Central Oregon had the highest percentage change in population, while the Willamette Valley accounted for the highest total population increase. The Willamette Valley accounted for 61% of the non-Metro population growth between 2005 and 2012. Southern Oregon also experienced significant growth, with a slightly higher growth rate than the Willamette Valley (but a much lower share of statewide growth).

Table 3-4. Population Change, 2005-2012, by Region, all Non-Metro Cities (n=216)

Region	Number of Cities	2005	2012	2005-12 Change	2005-12 Percent Change	Share of Total Growth
Central Oregon	15	130,175	148,015	17,840	13.7%	17%
North Coastal Oregon	19	58,435	60,910	2,475	4.2%	2%
Northeast Oregon	56	101,876	104,362	2,486	2.4%	2%
South Coastal Oregon	13	60,515	61,355	840	1.4%	1%
Southeast Oregon	14	47,747	48,195	448	0.9%	0%
Southern Oregon	24	205,982	224,510	18,528	9.0%	17%
Willamette Valley	75	770,545	835,955	65,410	8.5%	61%
Total	**216**	**1,375,275**	**1,483,302**	**108,027**	**7.9%**	**100.0%**

Population increased at a faster rate (7.9%) than acres in city limits (4.9%) between 2005 and 2012. This suggests that cities became more efficient in terms of population per acre—in fact, population density measured in persons per square mile increased 2.8% between 2005 and 2012 (Table 3-5). Increases in population density did not occur uniformly during this period—cities less than 1,000 showed a

decline in population density, while larger cities generally experienced an increase in population density. Cities between 25,000 and 49,000 showed the greatest increase in population density between 2005 and 2012: 10.9%.

Table 3-5. Population Density (persons per square mile), 2005-2012, by City Size, all Non-Metro cities, all Land Within City Limits in UGBs (n=216)

City Size	Number of Cities	Population Density (persons/sq mi) 2005	2012	Percent Change 2005-2012
<1,000	79	709	679	-4.1%
1,000-4,999	81	1,442	1,473	2.2%
5,000-9,999	28	1,666	1,674	0.5%
10,000-24,999	17	2,156	2,155	0.0%
25,000-49,999	4	2,618	2,904	10.9%
50,000 or more	7	3,065	3,202	4.5%
Total	**216**	**2,125**	**2,185**	**2.8%**

Table 3-6 shows changes in population density did not occur uniformly by region. The Northeast and Southeast Oregon regions both show decreases in population density. These regions both experienced net population increases, thus annexations occurred at a rate faster than population growth. The remaining regions show population density increases of between 0.3% (South Coastal Oregon) and 4.4% (Central Oregon).

Table 3-6. Population Density (persons per square mile), 2005-2012, by Region, all Non-Metro Cities, all Land Within City Limits in UGBs (n=216)

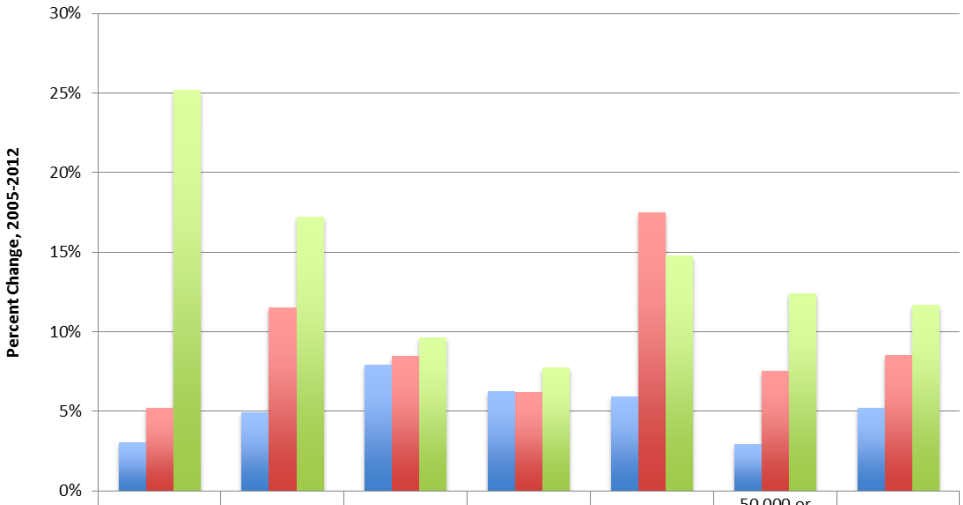
Region	Number of Cities	Population Density (persons/sq mi) 2005	2012	Percent Change 2005-2012
Central Oregon	15	1,676	1,749	4.4%
North Coastal Oregon	19	930	953	2.5%
Northeast Oregon	56	1,328	1,297	-2.4%
South Coastal Oregon	13	1,206	1,209	0.3%
Southeast Oregon	14	1,240	1,175	-5.3%
Southern Oregon	24	2,576	2,658	3.2%
Willamette Valley	75	2,947	3,055	3.7%
Total	**216**	**2,125**	**2,185**	**2.8%**

Tables 3-5 and 3-6 show population density for all acres within city limits. To further refine this analysis, the research team calculated density using non-prohibitive acres within city limits (e.g., lands not in water or floodways). The results (Figure 3-3) show that excluding prohibitive areas impacts density.

Overall, cities in Oregon are increasing in population, but adding land to their city limits slower than population. In short, they are becoming denser. Figure 3-3 shows a 12% increase in population density between 2005 and 2012 statewide with the

highest gains seen in cities with less than 5,000 residents, and more than 25,000 residents. It should be noted that fewer overall residents are needed to increase the density in smaller cities compared to larger cities. This is evidenced by the decrease in both population and people per square mile for cities less than 1,000 (Tables 3-4 and 3-5), but increase in density shown in Figure 3-3.

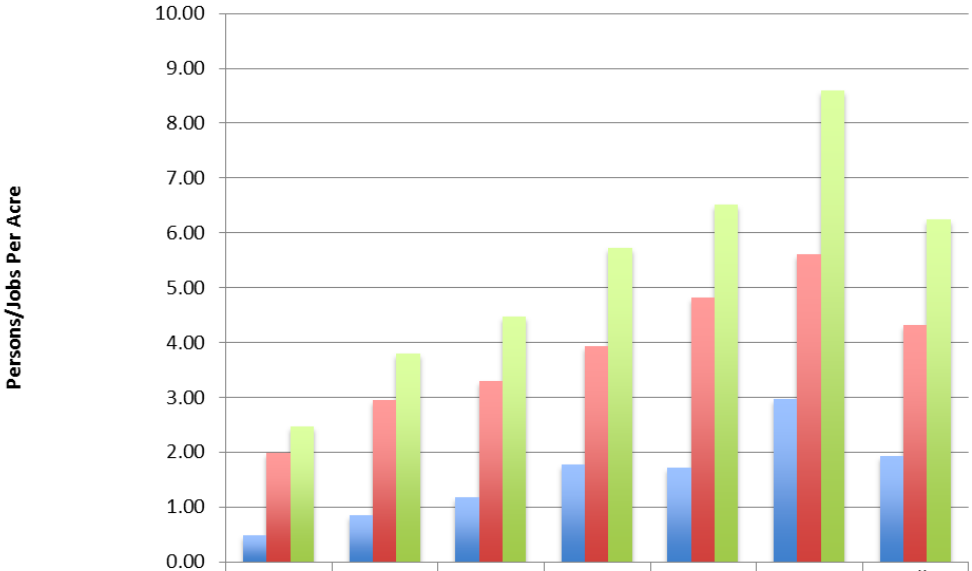
Figure 3-3. Acres, Population and Population Density Change for Tier 1 Cities by City Size, 2005-2012, all non-Metro cities, Non-Prohibitive Acres in City Limits in UGB (n=130)



	<1,000	1,000-4,999	5,000-9,999	10,000-24,999	25,000-49,999	50,000 or more	All Classes
Acres	3%	5%	8%	6%	6%	3%	5%
Pop	5%	11%	8%	6%	18%	8%	9%
Pop Den	25%	17%	10%	8%	15%	12%	12%

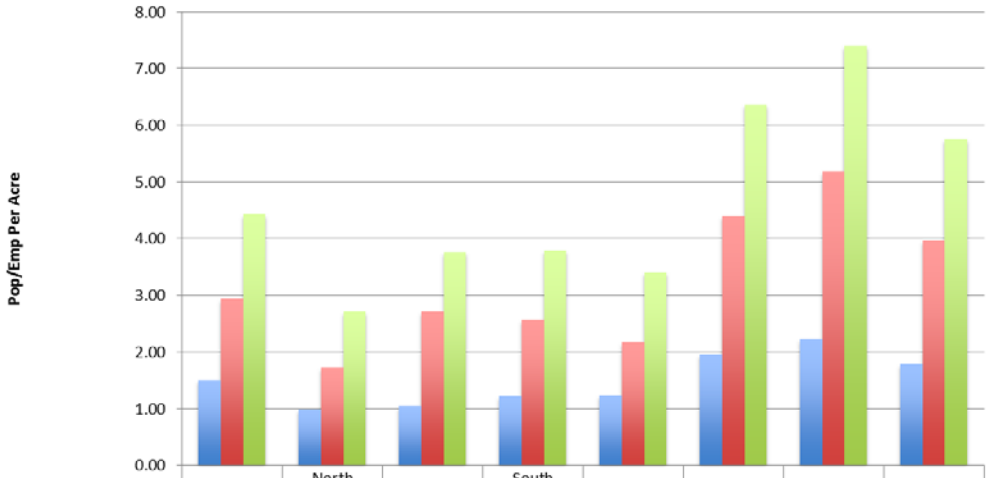
Figure 3-4 shows the population and employment density by city size, while Figure 3-5 shows it by region. Both population and employment density are highest in cities with 50,000 or more residents. Overall, Oregon had a population density of 4.3 people and 1.9 jobs per acre in 2012. The Willamette Valley has the highest density of people and jobs followed by Southern Oregon.

Figure 3-4. Population and Employment Density (persons and jobs per acre) for Tier 1 Cities By City Size, 2012, Non-Prohibitive Acres in City Limits in UGB (n=130)



	<1,000	1,000-4,999	5,000-9,999	10,000-24,999	25,000-49,999	50,000 or more	All Classes
Employment Density	0.49	0.85	1.18	1.78	1.71	2.97	1.94
Population Density	1.99	2.95	3.30	3.94	4.81	5.62	4.32
Pop+Emp Density	2.48	3.80	4.48	5.72	6.52	8.59	6.25

Figure 3-5. Population and Employment Density for Tier 1 Cities By Region, in City Limits in UGB, 2012 (n=130)



	Central Oregon	North Coastal Oregon	Northeast Oregon	South Coastal Oregon	Southeast Oregon	Southern Oregon	Willamette Valley	Total
Employment Density	1.50	0.98	1.05	1.22	1.24	1.96	2.23	1.78
Population Density	2.93	1.73	2.72	2.58	2.17	4.40	5.18	3.98
Pop+Emp Density	4.44	2.72	3.77	3.80	3.41	6.36	7.41	5.76

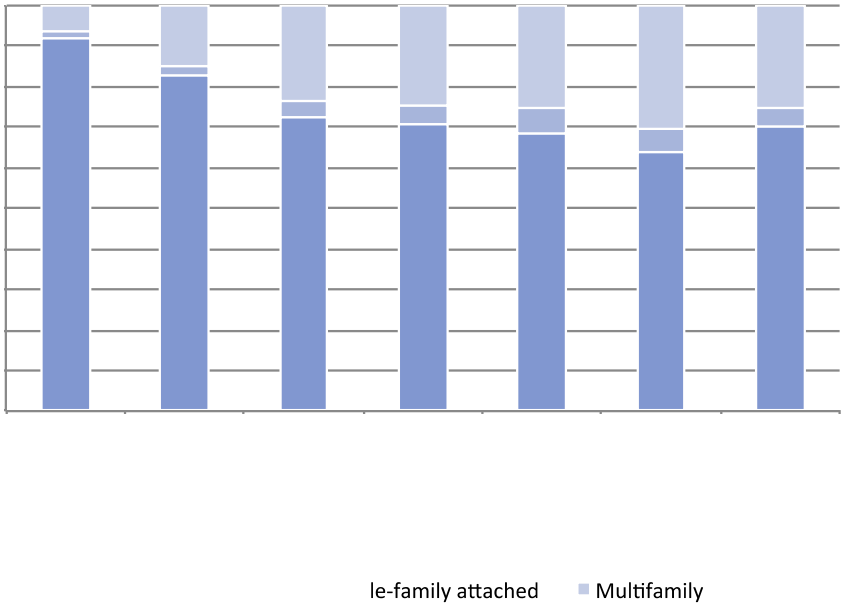
Housing Mix (All Cities)

A key consideration for determining land need is housing mix (percent of housing by type). Moreover, housing mix plays prominently in Goal 10 and the Goal 10 Administrative Rule (OAR 660-010). The key relationship from a land need perspective is that single-family detached housing will have significantly lower density than multifamily housing types.

Figures 3-6 and 3-7 display the housing mix by city size and region, respectively, for all 216 cities outside the Portland Metro UGB. As shown in Figure 3-6, as city size increases, the share of multifamily units increases. In cities of 50,000 or more residents, multifamily comprises 30% of dwelling units. The statewide average is 27%.

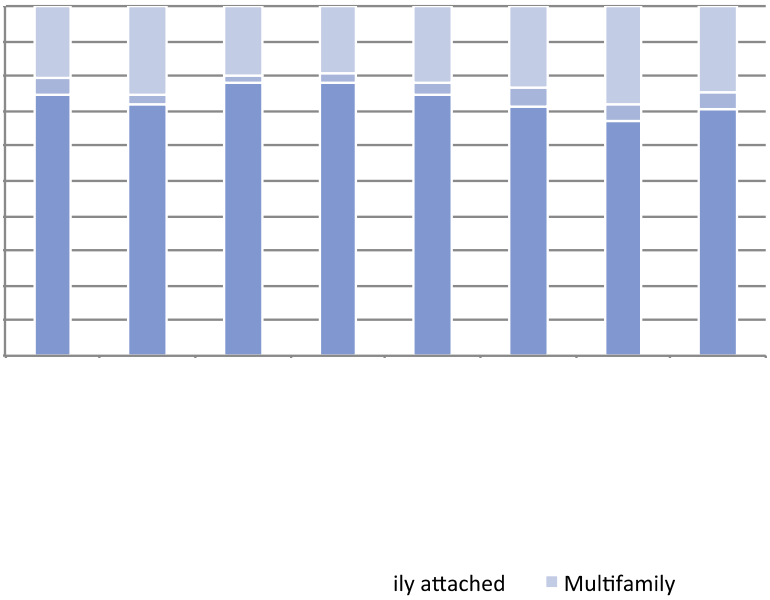
The amount of single-family attached dwellings remains the smallest share across Oregon, and never accounts for more than 10% of overall units.

Figure 3-6. Housing Mix by City Size, all Non-Metro Cities, 2012 (n=216)



When summarized by region, the amount of multifamily units shows more variation across the state. Not surprisingly, the Willamette Valley has the lowest share of single family detached housing among all regions because a higher share of the Willamette Valley lives in larger cities which have a higher share of multifamily housing.

Figure 3-7. Housing Mix by Region, all Non-Metro Cities, 2012 (n=216)



Public Lands and Roads (ORMAP Cities)

An additional consideration is developing factors to account for land needed for roads or public and semi-public uses. This section includes analysis of lands that are either (1) classified as exempt (from property taxation), or (2) outside of tax lot boundaries. Most counties do not include water, roads and other rights-of-way such as railroads in tax lot coverages. Property assessors include classification codes that identify whether exempt land is publicly or privately held. The Division 24 rule outlines a safe harbor assumption for public lands and roads:

> (10) As a safe harbor during periodic review or other legislative review of the UGB, a local government may estimate that the 20-year land needs for streets and roads, parks and school facilities will together require an additional amount of land equal to 25 percent of the net buildable acres determined for residential land needs under section (4) of this rule, and in conformance with the definition of "Net Buildable Acre" as defined in OAR 660-024-0010(6).

Many cities have chosen not to use this assumption and in most instances an empirical analysis of these uses has shown a higher percentage of land in public and semi-public uses. Two elements to this exist: roads (which are generally not included in taxlots) and other public and semi-public uses. Note that the safe harbor only accounts for public uses.

Note also that the safe harbor focuses on residential land. Using the available data sources, there is no simple way of separating out residential lands (we do not have reliable zoning or plan designation data). Moreover, property classifications are

specific to uses and not zoning or plan designation. Thus the analysis that follows is based on all land within city limits.

To develop estimates of how much land is in roads, parks, and schools, we used ORMAP taxlot data and property classifications. Of the 130 Tier 1 cities, 105 had data that allowed analysis of exempt lands.

Roads

Most GIS databases do not include polygons for roads, however, the research team developed a methodology that provides a reasonable proxy for lands in roads. The first step was to subtract the area in taxlots from the area in city limits, yielding a detailed estimate of land not in taxlots. The second step was to subtract areas in mapped waterbodies from areas not in taxlots. This provides an accurate estimate of areas that are right-of-ways. The limitation is that some right-of-ways are not public. This includes areas used for railroads and other transportation or energy transmission uses (note that most powerlines and pipelines have easements and are therefore included in the taxlot base). The research team conducted this "area not in tax lots" analysis on 180 of the 216 cities.

Water and other undevelopable areas present complications in analyzing land not in taxlots. Table 3-7 shows the total amount of land not in taxlots and the total amount of land in city limits. In other words, the data do not exclude areas with prohibitive constraints—which are considerable in some cities, particularly cities with ports. The results show that, on average, about 64% of land in city limits is in tax lots. Note that the figures in Table 3-7 include areas in cities that are in water or floodways (e.g., prohibitive acres).

Table 3-7. Analysis of land not in tax lots inside city limits, by city size, ORMAP cities, 2012 (n=180)

			Land in Tax Lots and Not in Water				
City Size	Number of Cities	Acres in City Limit	Acres	Average Percent	High Percent	Low Percent	Standard Dev Percent
<1,000	55	22,743	15,468	67%	95%	26%	17%
1,000-4,999	70	93,006	53,680	62%	95%	22%	17%
5,000-9,999	27	107,173	65,999	63%	83%	27%	14%
10,000-24,999	17	117,974	71,218	64%	97%	40%	14%
25,000-49,999	4	32,969	24,145	74%	82%	66%	7%
50,000 or more	7	163,021	104,009	64%	82%	42%	13%
All Cities	**180**	**536,886**	**334,520**	**64%**	**97%**	**22%**	**16%**

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon

Table 3-8 shows the amount of land not in taxlots excluding water by city size class in 2012. The sample includes 180 Tier 2 cities (e.g., cities that the UO Team has data for). The results are considerably different than those presented in Table 3-7 and show that the average percentage of land in city limits not in taxlots excluding water is 18%. The results are surprisingly consistent across city size; the values range from 15% for cities with populations between 5,000 and 9,999 to 19% for

cities less than 1,000. Smaller cities tend to show more variability as expressed by the standard deviation of percentages.

Table 3-8. Analysis of land not in tax lots excluding mapped waterbodies, by city size, ORMAP cities, 2012 (n=180)

			Land in Tax Lots and Not Water				
City Size	Number of Cities	Acres in City Limit	Acres	Average Percent	High Percent	Low Percent	Standard Dev Percent
<1,000	55	18,181	15,091	81%	96%	67%	7%
1,000-4,999	70	60,827	50,759	83%	95%	57%	6%
5,000-9,999	27	69,970	59,665	85%	95%	73%	4%
10,000-24,999	17	78,425	67,851	83%	95%	74%	5%
25,000-49,999	4	28,031	23,680	84%	87%	82%	2%
50,000 or more	7	121,453	100,195	82%	84%	80%	1%
All Cities	**180**	**376,888**	**317,241**	**82%**	**96%**	**57%**	**6%**

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon

Public and semi-public uses

Public and semi-public uses include lands owned by government agencies such as parks, public buildings, and land for other types of infrastructure. Semi-public uses include uses like churches and fraternal organizations. The research team used property classifications in the 900 series (lands that are exempt from taxation) to develop an estimate of public and semi-public land use. Of the 180 cities shown in Tables 3-7 and 3-8, the UO research team had taxlot data for 105.

Table 3-9 shows that in the 105 Tier 2 cities a total of 42,979 acres in 14,381 taxlots are classified exempt—14% of the 308,032 acres within city limits. The results also show considerable variation by city size. For example, cities with populations over 50,000 had 6% of the total city area in exempt classifications, while cities with populations between 5,000 and 9,999 had 26% of the land in their city limits classified exempt.

Note that we used area in city limits rather than area in taxlots as the denominator for this analysis. We chose acres in city limits because it is consistent with the analysis in Tables 3-7 and 3-8 and the analysis is looking at roads and public uses.

Table 3-9. Analysis of exempt land (property class 9xx), by city size, non-prohibitive acres in city limits and tax lots, ORMAP cities, 2012 (n=146)

			Exempt Taxlots		
City Size	Number of Cities	Non-Prohibitive Acres in City Limit	Taxlots	Non-prohibitive Acres in Taxlots	Percent of Total Acres in City limits
<1,000	45	5,730	365	1,178	21%
1,000-4,999	58	33,967	1,845	3,999	12%
5,000-9,999	20	58,097	4,308	14,862	26%
10,000-24,999	15	60,754	4,037	12,486	21%
25,000-49,999	3	28,031	1,022	3,436	12%
50,000 or more	5	121,453	2,804	7,018	6%
All Cities	**146**	**308,032**	**14,381**	**42,979**	**14%**

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon
Note: Clackamas, Lane and Marion have no land coded as property class "9XX"

The data in Table 3-9 raise questions about why cities in the 5,000 to 9,999 population range have such a high percentage of land in exempt classifications. Further review by the UO research team found that several cities in the Coastal regions had significant areas platted into estuaries or the Pacific Ocean.

Table 3-10 shows exempt land by region. The results show much higher percentages of exempt land in coastal regions. The North Coast Region has 37% of the area in exempt and the South Coast 29%. Further analysis by city shows that Astoria has 58% of its land area in exempt classifications, Coos Bay 48% and Newport 38%. A closer review of data from Newport indicates that 85% of exempt land is government owned.

Table 3-10. Analysis of exempt land (property class 9xx), by region, Tier 2 cities, 2012 (n=146)

			Exempt Land (Property Class 9XX)		
Region	Cities	Acres in City Limits	Tax Lots	Acres	Percent of Total Acres
Central Oregon	12	45,826	1,273	7,827	17%
North Coastal Oregon	14	28,316	3,666	10,587	37%
Northeast Oregon	32	9,516	469	1,680	18%
South Coastal Oregon	11	13,863	934	3,994	29%
Southeast Oregon	10	17,797	1,005	3,261	18%
Southern Oregon	24	35,540	2,557	4,819	14%
Willamette Valley	43	157,174	4,477	10,811	7%
Total	**146**	**308,032**	**14,381**	**42,979**	**14%**

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon
Note: Clackamas, Lane and Marion have no land coded as property class "9XX"

Property classifications allow further disaggregation of uses; the 900 property classification has codes that are specific to government (local, state, and federal), schools, and other exempt uses such as government-assisted housing, cemeteries, etc.

Table 3-11 shows the exempt land from Tables 3-9 and 3-10 broken down by government, school, and semi-public uses. The Division 24 safe harbor specifically references parks and schools; however, property classifications are not specific to the type of government use. The results show that two-thirds of the exempt lands are classified as government or school uses.

Table 3-11. Total acres of exempt land (property class 9xx) by use and by city size, non-prohibitive land in tax lots, Tier 2 cities, 2012 (n=146)

		Government		School		Semi-Public		All Exempt	
City Size	Number of Cities	Tax Lots	Acres	Tax Lots	Acres	Tax Lots	Acres	Tax Lots	Acres
<1,000	45	255	966	44	155	66	58	365	1,178
1,000-4,999	58	1,327	2,714	148	763	370	521	1,845	3,999
5,000-9,999	20	3,333	12,915	228	972	747	975	4,308	14,862
10,000-24,999	15	2,800	10,006	270	1,482	967	998	4,037	12,486
25,000-49,999	3	601	2,450	112	665	309	321	1,022	3,436
50,000 or more	5	1,941	5,127	153	1,019	710	872	2,804	7,018
All Cities	**146**	**10,257**	**34,179**	**955**	**5,056**	**3,169**	**3,745**	**14,381**	**42,979**
Average Percent of Acres			**80%**		**12%**		**9%**		**100%**

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon
Note: Clackamas, Lane and Marion have no land coded as property class "9XX"

Roads, government use, and schools

The UO research team combined the results of Tables 3-7 and 3-10 to develop an estimate of the amount of land in city limits that is used for "public" uses. Table 3-12 shows that about 29% of the non-prohibitive land in the Tier 2 city sample could be considered as roads, government uses, or schools. Some variability exists by city size, but with the exception of cities in the 5,000 to 9,999 population class, the results are remarkably consistent.

The research team looked more closely at the exempt land; following are some of the key findings:

- Federal lands within city limits accounts for less than 1% of all exempt land
- Land owned by government entities (city, county, state and federal, but not schools) accounts for 87% of all exempt land
- Land owned by city governments accounts for 43% of all example lands
- Schools accounted for 18% of all exempt land
- Ports account for 26% of all exempt land; more in cities that have ports
- Semi-public uses (cemeteries, churches, fraternal organizations, and student housing) accounted for 13% of all exempt land

Table 3-12. Analysis of land not in tax lots and exempt land classified as government and school by city size, non prohibitive land in city limits and tax lots, Tier 2 cities, 2012 (n=146)

		Non Prohibitive Land				
City Size	Number of Cities	Acres in City Limit	Acres not in tax lots (roads)	Gov/ School Acres	Est Road/Public Total Ac	Percent of Acres in City Limits
<1,000	45	5,730	966	1,121	2,087	36%
1,000-4,999	58	33,967	5,332	3,478	8,810	26%
5,000-9,999	20	58,097	8,760	13,887	22,647	39%
10,000-24,999	15	60,754	9,490	11,488	20,978	35%
25,000-49,999	3	28,031	4,351	3,115	7,466	27%
50,000 or more	5	121,453	21,258	6,146	27,404	23%
All Cities	**146**	**308,032**	**50,157**	**39,235**	**89,391**	**29%**

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon

Constrained and Prohibited Lands (Tier 1 Cities)

The amount of land within a UGB, or within the city limits, is not equal to the amount of land available for development, and can thereby affect density calculations. Chapter 2 outlined the two classifications used in this study to refine the amount of available land, constrained, and prohibited. Prohibited land is, simply, unbuildable. This includes water features and floodways. Constrained lands *may* be buildable, but would be difficult to develop. This includes 100-year flood zones, wetlands, and slopes greater than 25%.

Table 3-13 shows acres in city limits by constraint status for the 130 Tier 1 cities.

Table 3-13. Acres in city limits by size class and constraint status, Tier 1 Cities, 2012 (n=130)

				Unprohibitive Land			Unprohibitive/ Unconstrained Land	
City Size	Number of Cities	Acres in City Limits	Prohibitive Acres	Unprohibitive Acres	Percent Unprohibitive Acres	Prohibitive+ Constrained Acres	Acres	Percent of Acres in City Limits
<1,000	26	10,021	420	9,602	2%	2,248	7,773	78%
1,000-4,999	48	59,483	3,377	56,106	12%	10,438	49,045	82%
5,000-9,999	28	111,008	10,580	100,428	22%	27,867	83,141	75%
10,000-24,999	17	117,974	6,329	111,645	24%	18,633	99,341	84%
25,000-49,999	4	28,369	673	27,697	6%	2,309	26,060	92%
50,000 or more	7	163,021	5,141	157,880	34%	18,948	144,073	88%
Total	**130**	**489,876**	**26,519**	**463,357**	**100%**	**80,442**	**409,434**	**84%**

Source: Oregon Explorer; analysis by University of Oregon

The results do not show any clear pattern of constraints by city size. A similar analysis by region is shown in Table 3-14. The results show that coastal areas have higher portions of their city limits in constrained areas than other regions of the state. The North Coast Region shows 52% of land is unconstrained; the South Coast

Region shows 71% is unconstrained. The other regions show less variation—from 85% to 91%.

Table 3-14. Acres in city limits by region and constraint status, Tier 1 Cities, 2012 (n=130)

				Unprohibitive Land			Unprohibitive/ Unconstrained Land	
Region	Number of Cities	Acres in City Limits	Prohibitive Acres	Unprohibitive Acres	Percent Unprohibitive Acres	Prohibitive+ Constrained Acres	Acres	Percent of Acres in City Limits
Central Oregon	12	57,578	1,296	56,282	12%	4,931	52,646	91%
North Coastal Oregon	14	43,353	8,207	35,146	8%	20,886	22,467	52%
Northeast Oregon	15	46,108	816	45,292	10%	4,331	41,778	91%
South Coastal Oregon	6	32,956	5,361	27,595	6%	9,489	23,467	71%
Southeast Oregon	6	32,603	690	31,913	7%	3,738	28,865	89%
Southern Oregon	17	62,094	1,567	60,527	13%	9,174	52,920	85%
Willamette Valley	60	215,185	8,583	206,602	45%	27,894	187,291	87%
Total	**130**	**489,876**	**26,519**	**463,357**	**100%**	**80,442**	**409,434**	**84%**

Source: Oregon Explorer; analysis by University of Oregon

CHAPTER 4: RESIDENTIAL LAND USE EFFICIENCY

This chapter presents an analysis of land use efficiency on residential lands. The analysis generally reports residential densities in taxlots per unprohibitive acre, though some data are reported as housing units per acre.[12]

Findings

The core of the HB 2254 research is related to "land use efficiency" which is measured through density. This Chapter presents analysis of residential densities for the 120 Tier 3 cities[13]. This sample represents cities from counties for which we could obtain taxlot data with necessary fields: year built, improvement value, and property classification.

Using Tier 3 cities, the research team was able to analyze changes in residential density over time for all land within city limits. In this section of the report, we show static data for 2012 or data in five year increments between 1993 and 2012.

Single-Family and Plex Density

Table 4-1 shows average density of single-family and plex units by city size for four five-year periods (e.g., each period represents the average density of all dwellings for that period). We include all taxlots in the Residential (100) Property Classification that are considered improved (with improvement value greater than $10,000) and land classification code of improved. We exclude parcels greater than 0.5 acres in size in order to capture residential development at urban densities.

For all cities, the data show a trend of increasing density, from 5.22 taxlots per unprohibitive acre in 1993-1997 to 6.38 taxlots per unprohibitive acre in 2008-2012. The trend of increasing single-family and plex densities is seen for all city sizes.

In terms of trends, the results show that densities for all cities increased an average of 22% over the analysis periods, or 1.16 dwelling units per net acre. Average density increases by size class ranged from a low of 10% for cities in the 25,000-49,999 class to 29% in the 50,000 or more and 5,000-9,999 size classes.

Using averages, the data generally show that single-family and plex densities increase as city size increases. Cities under 1,000 population (for the 2008-2012 period) averaged 4.84 dwelling units per net acre while cities over 50,000 averaged 6.79 dwelling units per net acre.

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[12] In this sense, parcels per acre equates to net residential density. None of the analysis included in this chapter assesses public and semi-public uses in residential areas.

[13] Waterloo and Sodaville are in Tier 3 counties but do not contain any land classified as Residential (Property Class=100,) so these cities do not appear in data analyses.

Table 4-1. Improved Single Family and Plex Average Density by City Size, by five-year periods, Tier 3 cities (n=120)

		Improved Single Family & Plex Parcels/Unprohibited Acres				Change 1993-97 to 2008-12	
City Size	Number of Cities	1993-1997	1998-2002	2003-2007	2008-2012	DU/Acre	Percent
<1,000	20	4.22	4.59	5.55	4.84	0.62	15%
1,000-4,999	45	5.02	5.30	5.59	5.51	0.50	10%
5,000-9,999	27	5.01	5.39	6.49	6.46	1.45	29%
10,000-24,999	17	5.31	5.81	6.36	6.23	0.91	17%
25,000-49,999	4	5.42	5.62	5.90	6.02	0.60	11%
50,000 or more	7	5.26	5.71	6.43	6.79	1.53	29%
All Cities	**120**	**5.22**	**5.61**	**6.25**	**6.38**	**1.16**	**22%**

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon
Description: Count of Parcels (Residential Class 100)/Unprohibitive Acres. Data is filtered on Yr Built, Improved and General Land Classification. The Yr Built Filter excludes Null and 0. Improved: property classification code improved AND assessed improved value >$10,000. The Generalized Land Classification filter keeps Residential, which includes structures with <5 units. Parcels >0.5 acres are excluded.

Variability among cities is a key consideration related to simplified methods. More variation makes developing simplified methods more difficult. Table 4-2 shows central tendency data (e.g., averages, maximum, minimum, and standard deviation) for improved single-family and plex densities in the 120 sample cities for 2008-2012. The results are interesting: cities over 25,000 show considerably less variability than cities below 25,000. This may be, in part, due to a smaller number of cities, but it suggests that cities tend to get more similar in terms of single-family and plex density as they get bigger.

Table 4-2. Central tendencies, Improved Single Family and Plex Average Density by City Size, 2003-2007, Tier 3 cities (n=120)

		2003-2007			
City Size	Number of Cities	Average	Maximum	Minimum	Standard Deviation
<1,000	20	4.80	8.29	2.90	1.53
1,000-4,999	45	5.32	8.44	2.06	1.29
5,000-9,999	27	6.46	15.54	3.83	2.22
10,000-24,999	17	6.10	9.38	3.81	1.60
25,000-49,999	4	6.05	6.56	5.68	0.39
50,000 or more	7	6.49	7.17	5.98	0.37
All Cities	**120**	**5.71**	**15.54**	**2.06**	**1.67**

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon
Description: Count of Parcels (Residential Class 100)/Unprohibitive Acres. Data is filtered on Yr Built, Improved and General Land Classification. The Yr Built Filter excludes Null and 0. Improved: property classification code improved AND assessed improved value >$10,000. The Generalized Land Classification filter keeps Residential, which includes structures with <5 units. Parcels >0.5 acres are excluded.

Tables 4-1 and 4-2 include single-family and plex units combined. Table 4-3 disaggregates the densities for 51 cities where the research team had data that allowed separation of single-family and plex units. The results show that plex densities are typically higher than single-family densities. They also show a general trend of increasing density by city size. Because one-unit single family parcels are dominant, using parcels to convey density rather than units illustrates that single family density and single family+plex density using parcels are very similar.

Table 4-3. Improved Single Family and Plex Average Density by City Size, 2012, Cities in Clackamas, Coos, Deschutes, Jackson, Linn, Polk, Washington, Yamhill (n=51)

		Coos, Clackamas, Deschutes,Hood River, Jackson, Josephine, Lane, Linn, Washington, Yamhill			
City Size	Number of Cities	Single Family	Single Family+ Plex (Using Units)	Single Family + Plex (Using Parcels)	Plex
<1,000	2	3.59	3.65	3.59	9.01
1,000-4,999	24	3.30	3.37	3.24	5.89
5,000-9,999	11	4.62	4.83	4.60	10.03
10,000-24,999	6	4.92	5.14	4.88	9.53
25,000-49,999	3	4.17	4.39	4.22	9.73
50,000 or more	5	4.40	4.89	4.43	11.25
All Cities	**51**	**4.33**	**4.68**	**4.35**	**10.34**

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon
Description: Count of Parcels (Residential Class 100)/Unprohibitive Acres. Data is filtered on Yr Built, Improved and General Land Classification. The Yr Built Filter excludes Null and 0. Improved: property classification code improved AND assessed improved value >$10,000. The Generalized Land Classification filter keeps Residential, which includes structures with <5 units. Parcels >0.5 acres are excluded. Includes cities in counties with address point or unit count data.

Table 4-4 shows average density of single-family and plex units by region for four five-year periods (e.g., each period represents the average density of all dwellings for that period). The results show that more variability exists in single-family/plex densities by region than by city size. As a result, the predictive value of regions is less useful.

Table 4-4. Improved Single Family and Plex Average Density by Region, by five-year periods, Tier 3 cities (n=120)

		Improved Single Family & Plex Parcels/Unprohibited Acres				Change 1993-97 to 2008-12	
City Size	Number of Cities	1993-1997	1998-2002	2003-2007	2008-2012	DU/Acre	Percent
Central Oregon	9	4.77	5.19	6.27	6.48	1.70	36%
North Coastal Oregon	12	5.92	5.55	7.65	6.20	0.28	5%
Northeast Oregon	12	4.51	4.80	4.73	4.86	0.36	8%
South Coastal Oregon	6	4.60	4.49	5.71	5.53	0.93	20%
Southeast Oregon	6	4.44	4.46	4.42	4.92	0.49	11%
Southern Oregon	17	5.34	5.41	6.14	6.01	0.67	12%
Willamette Valley	58	5.35	6.01	6.34	6.69	1.34	25%
All Cities	**120**	**5.22**	**5.61**	**6.25**	**6.38**	**1.16**	**22%**

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon
Description: Count of Parcels (Residential Class 100)/Unprohibitive Acres. Data is filterd on Yr Built, Improved and General Land Classification. The Yr Built Filter excludes Null and 0. Improved: property classification code improved AND assessed improved value >$10,000. The Generalized Land Classification filter keeps Residential, which includes structures with <5 units. Parcels >0.5 acres are excluded.

Table 4-5 shows central tendency data (e.g, averages, maximum, minimum, and standard deviation) for improved single-family and plex densities in the 120 sample cities for 2008-2012. Cities in Southeast Oregon show less variation than other regions. Cities in North Coastal Oregon show the greatest variation.

Table 4-5. Central tendencies, Improved Single Family and Plex Average Density by Region, 2008-12, Tier 3 cities (n=120)

		2008-2012			
City Size	Number of Cities	Average	Maximum	Minimum	Standard Deviation
Central Oregon	9	6.45	10.08	3.90	2.03
North Coastal Oregon	12	6.67	14.88	3.99	2.90
Northeast Oregon	12	4.68	6.88	2.97	1.27
South Coastal Oregon	6	4.97	7.16	2.99	1.39
Southeast Oregon	6	4.60	5.20	4.16	0.51
Southern Oregon	17	5.41	7.98	3.48	1.40
Willamette Valley	58	6.06	13.98	2.06	1.75
All Cities	**120**	**5.80**	**14.88**	**2.06**	**1.85**

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon
Description: Count of Parcels (Residential Class 100)/Unprohibitive Acres. Data is filtered on Yr Built, Improved and General Land Classification. The Yr Built Filter excludes Null and 0. Improved: property classification code improved AND assessed improved value >$10,000. The Generalized Land Classification filter keeps Residential, which includes structures with <5 units. Parcels >0.5 acres are excluded.

Multifamily Density

Multifamily densities present an analytical challenge. Most assessors do not include counts of multifamily dwelling units in their assessment databases. We present two levels of data: multifamily counts from assessor's data and address files when available (Tables 4-6 and 4-7) and Goal 10 Housing studies (Table 4-8s and 4-9.)

Due to data limitations, the tax assessor's sample represents 26 cities from counties for which we could obtain taxlot data with necessary fields: improvement value, property classification, and number of units or addresses associated with each taxlot. Table 4-6 shows that multifamily development for all developments in the 26 cities averaged about 12 dwelling units per net acre. Density was highest in cities 10,000-24,999 and cities over 50,000.

Table 4-6. Average density of multifamily housing by city size, 2012 (n=26)

City Size	Number of Cities	Number of Units	Density (DU/Net Ac)
<1,000	0	na	na
1,000-4,999	11	1,260	5.34
5,000-9,999	8	2,963	6.36
10,000-24,999	3	3,172	11.58
25,000-49,999	1	1,560	7.94
50,000 or more	3	31,717	14.47
Total	26	40,672	12.09

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon

Table 4-7 shows multifamily density for 26 cities in four regions. Several regions have very small samples, making it difficult to generalize about trends in densities. Of regions with more than one observation, density was highest in the Willamette Valley.

Table 4-7 Average density of multifamily housing by region, 2012 (n=26)

City Size	Number of Cities	Number of Units	Density (DU/Net Ac.)
Central Oregon	1	213	3.65
North Coastal Oregon			
Northeast Oregon			
South Coastal Oregon	1	558	14.36
Southeast Oregon			
Southern Oregon	10	7,110	8.13
Willamette Valley	14	32,791	13.70
All Cities	**26**	**40,672**	**12.09**

Source: Oregon Explorer; county tax lot and assessment data; analysis by University of Oregon

To supplement the small sample size in Tables 4-6 and 4-7, the research team reviewed Goal 10 housing studies. We reviewed about 30 studies completed since 2000; 22 of those studies included analysis of multifamily densities. Consistent with the definition of needed housing types in ORS 197.303, the results presented in the following tables include all forms of multifamily housing (duplexes, other plexes, multifamily units, etc.).

While the analysis shown in Table 4-6 and Table 4-7 suggests that densities increase as population increases, the size of the samples do not allow any reliable conclusions to be drawn based on city size or region. Our assessment is that the Goal 10 studies provide more reliable results than the tax lot analysis. Our rationale is that those studies used more rigorous review of the data for quality. That said, we believe the average densities from both methods provide a reasonable basis for development assumptions for incorporation into a simplified land need method.

Table 4-8 shows the results of our review of these studies. We included the number of units and density, the time period for the analysis, and whether the city was in the original pool of 26 cities. The results show an unweighted average density of 13.3 dwelling units per net acre. Because the number of units varied considerably by city, and some studies did not include a unit count, we also calculated a weighted average for those cities with unit counts. The weighted average for the 18 cities that included unit counts was 15.3 dwelling units per net acre.

Table 4-8. Average Density of multifamily housing as reported in Goal 10 studies (n=22)

City	Units	Density (DU/net ac)	Time Period	In Tier 3 Analysis
Albany	1,321	15.3	1990-2001	N
Ashland	167	9.3	1990-2001	Y
Aumsville		8.0	1986-1996	N
Bend		17.7	1998-2008	N
Columbia City	16	6.7	1992-2000	N
Eugene	2,029	14.1	2001-2008	Y
Grants Pass	740	10.0	1999-2006	N
Harrisburg	67	9.3	all housing	N
Hermiston		15.3	1999-2004	N
Independence		9.9	1987-1999	N
Junction City	76	17.5	2000-2008	Y
La Grande	385	14.6	1990-2000	N
Medford	2,564	16.6	1996-2009	Y
Monmouth	231	12.6	1990-2000	N
Newberg	516	15.7	1990-2003	N
Newport	226	18.7	2000-2010	N
Ontario	65	12.1	1996-2004	N
Redmond	533	8.8	2000-2004	N
Salem	2,506	18.3	1999-2009	N
Keizer	2,833	17.8	1999-2009	N
Sandy	672	11.0	1998-2006	Y
Springfield	1,051	11.1	1999-2008	Y
Average	**889**	**13.2**		
Weighted Average (for cities with unit counts)		**15.3**		
Minimum		6.7		
Maximum		18.7		
St.Dev.		3.8		

Source: City Goal 10 Housing Needs Analysis Studies collected by DLCD and the UO research team
NOTE: These averages do not separate medium- and high-density residential development, so the averages reported in this table reflect all multifamily housing units. The inconsistent categorization in Goal 10 studies made separation infeasible.

To better understand relationships between density and city size and region, we cross-tabulated the data from the 18 studies that included unit counts. Table 4-9 presents data from the studies by city size. While the sample size is small for each size class, the results follow the general pattern of increasing density with more population that we observed with single-family densities. Densities for cities over 10,000 persons averaged very close to 15 dwelling units per net acre.

Table 4-9, Density of multifamily housing as reported in Goal 10 studies, by city size (n=18)

Population	Number of Cities	Units	Weighted Density (DU/net ac)
<1,000	0	-	na
1,000-4,999	2	83	8.8
5,000-9,999	3	979	11.9
10,000-24,999	5	1,359	14.9
25,000-49,999	3	4,106	15.2
50,000 or more	5	9,471	15.7
Total/Average	**18**	**15,998**	**15.3**

Source: City Goal 10 Housing Needs Analysis Studies collected by DLCD and the UO research team

Because 14 of 18 Goal 10 housing studies were located in the Willamette Valley, we have limited variation among regions and refrain from reporting regional data on multifamily housing from Goal 10 studies.

The results of our review of multifamily densities reported in Goal 10 studies shows that the studies generally reported densities higher than what we found in the taxlot analysis. This could be explained by the fact that most Goal 10 studies use building permits for the density analysis and go through a more rigorous review than we have conducted to date. The results of the studies are in line with our expectations: densities increase with city size; larger cities average around 15 dwelling units per net acre.

The tax lot level analysis of 26 cities resulted in an average multifamily density of 12 dwelling units per net acre. The 18 Goal 10 studies show an average weighted density of about 15 dwelling units per net acre. The two methods begin to suggest a range of 12 to 15 units per acre for average multifamily densities, though the studies did not separate medium and high density residential.

CHAPTER 5: EMPLOYMENT LAND USE EFFICIENCY

This chapter presents an analysis of land use efficiency on employment lands. The analysis generally reports employment densities in employees per acre (EPA).

Findings

This chapter presents analysis of employment densities for Tier 1 and Tier 2 cities. Using Tier 1 cities, the research team was able to analyze changes in employment density over time for all land within city limits. Using Tier 2 data, we were able to analyze employment density for land that had employment in 2012.[14]

Note that all of the analysis in this section is based on data from the Quarterly Census of Employment and Wages (QCEW) and only includes employees "covered" by unemployment insurance. Total employment is typically about 25% higher than covered employment, and typically undercounts agricultural employment, real estate, and services, which are less likely to be considered "covered" and include a higher proportion of self-proprietors. It is not possible to estimate where uncovered employment is located but many of the underreported fields occur in areas outside UGBs or in home occupations. In the counties in our study, the share of total employment included in QCEW data ranges from 57% in Curry County to 84% in Marion County.

The research team decided to not make adjustments to covered employment data to reflect total employment. Our rationale is that (1) we observe wide variations in the ratio of covered to total employment by county, and (2) these ratios include employment outside city limits. It is reasonable to assume that in rural agricultural counties a higher proportion of non-covered employment exists outside city limits. Without a more accurate method of allocating non-covered employment, we chose to not make covered to total employment adjustments.

Employment Trends

Table 5-1 shows a summary of covered employment by city size in 2005 and 2012. The data show that more than 90% of covered employment is in cities of 5,000 population and larger. More than 50% of covered employment is in the seven cities over 50,000 population. The results show that employment grew only 1% during this period. Growth was uneven by size class, with cities less than 1,000 population experiencing the highest growth rate (32%) and cities over 50,000 losing employment. In 2012, there were 651,491 covered employees in the 216 cities outside the Metro UGB.

[14] We did not have historic taxlot data, so dynamic analysis (e.g., analysis over time) of employment densities at the tax lot level was not possible.

Table 5-1. Covered employment for all non-Metro cities, 2005 and 2012 (n=216)

City Size	Number of Cities	2005 Employment	2005 Percent of Emp	2012 Employment	2012 Percent of Emp	Change, 2005-12 Number	Change, 2005-12 Percent	Change, 2005-12 AAGR
<1,000	81	6,952	1%	9,178	1%	2,226	32%	4.0%
1,000-4,999	79	52,379	8%	53,269	8%	890	2%	0.2%
5,000-9,999	28	76,949	12%	78,566	12%	1,617	2%	0.3%
10,000-24,999	17	125,433	19%	128,840	20%	3,407	3%	0.4%
25,000-49,999	4	44,187	7%	46,297	7%	2,110	5%	0.7%
50,000 or more	7	338,690	53%	335,341	51%	(3,349)	-1%	-0.1%
All Classes	**216**	**644,590**	**100%**	**651,491**	**100%**	**6,901**	**1%**	**0.2%**

Source: Quarterly Census of Employment and Wages, Oregon Explorer, analysis by University of Oregon

Table 5-2 shows basic employment statistics for the 130 Tier 1 cities in 2012. Table 5-2 shows that the 130 Tier 1 cities had 627,441 covered employees, or 96% of all employment within city limits of all 216 cities outside Metro. The results also show considerable variation in the amount of employment exists in cities of all sizes (see maximum, minimum and standard deviation values).

Table 5-2. Covered employment statistics for Tier 1 cities by city size, 2012 (n=130)

City Size	Number of Cities	Total Employment	Average by City	Maximum	Minimum	St. Dev.
<1,000	26	3,220	124	401	4	114
1,000-4,999	48	35,177	733	3,713	98	656
5,000-9,999	28	78,566	2,806	6,214	676	1,468
10,000-24,999	17	128,840	7,579	16,586	3,262	3,254
25,000-49,999	4	46,297	11,574	17,068	5,614	4,896
50,000 or more	7	335,341	47,906	96,570	20,577	29,467
All Classes	**130**	**627,441**	**4,826**	**96,570**	**4**	**12,552**

Source: Quarterly Census of Employment and Wages, Oregon Explorer, analysis by University of Oregon

Table 5-3 shows population, covered employment, and population/employment ratio by city size for 2005 and 2012. Overall, the population/employment ratio trends towards 2:1.The results show that the population/employment ratio generally decreases as population increases. The results suggest that most small cities are “bedroom” communities, with population/employment ratios in the 5:1 range. Cities over 50,000 are employment centers, with population/employment ratios below 2:1. Between 2005 and 2012, population/employment ratios increased for all cities with the exception of cities under 1,000 population. This is consistent with job loss that occurred during the Great Recession.

Table 5-3. Population, covered employment, and population/employment ratio by city size, Tier 1 Cities, 2005 and 2012 (n=130)

City Size	Number of Cities	2005 Population	2005 Employment	2005 Pop/Emp Ratio	2012 Population	2012 Employment	2012 Pop/Emp Ratio
<1,000	26	13,914	2,444	5.7	14,805	3,220	4.6
1,000-4,999	48	102,190	34,691	2.9	114,025	35,177	3.2
5,000-9,999	28	201,795	76,949	2.6	218,885	78,566	2.8
10,000-24,999	17	268,645	125,433	2.1	285,375	128,840	2.2
25,000-49,999	4	110,850	44,187	2.5	130,255	46,297	2.8
50,000 or more	7	588,975	338,690	1.7	633,395	335,341	1.9
All Classes	**130**	**1,286,369**	**622,394**	**2.1**	**1,396,740**	**627,441**	**2.2**

Source: Quarterly Census of Employment and Wages, Oregon Explorer, analysis by University of Oregon

Employment by Land Use Classification

This section presents analysis of employment by property classifications. Table 5-4 shows that the majority of covered employment in all of the study cities is in lands with commercial property classifications (59% for all 127 Tier 2 cities). Exempt land accounted for 18% of employment, and industrial land 14%. Seven percent of employment was on land with residential property classifications (note this is not the same as plan designations or zoning), and 2% on other (farm, forest, tract).

Table 5-4. Covered employment by generalized property classification by city size, Tier 2 Cities, 2012 (n=127)

City Size	Number of Cities	Generalized Property Classification: Services	Industrial	Residential	Exempt	Other	Total
Total Employment							
<1,000	25	1,072	194	156	625	91	2,138
1,000-4,999	46	14,540	4,463	2,042	5,176	1,874	28,095
5,000-9,999	28	33,723	6,463	7,121	12,048	1,536	60,891
10,000-24,999	17	47,487	10,623	5,347	19,618	1,099	84,174
25,000-49,999	4	20,160	5,461	2,816	8,698	867	38,002
50,000 or more	7	143,596	35,410	13,005	31,612	2,419	226,042
All Classes	**127**	**260,578**	**62,614**	**30,487**	**77,777**	**7,886**	**439,342**
Percent of Employment							
<1,000	20%	50%	9%	7%	29%	4%	100%
1,000-4,999	36%	52%	16%	7%	18%	7%	100%
5,000-9,999	22%	55%	11%	12%	20%	3%	100%
10,000-24,999	13%	56%	13%	6%	23%	1%	100%
25,000-49,999	3%	53%	14%	7%	23%	2%	100%
50,000 or more	6%	64%	16%	6%	14%	1%	100%
All Classes	**100%**	**59%**	**14%**	**7%**	**18%**	**2%**	**100%**

Source: Quarterly Census of Employment and Wages, Oregon Explorer, analysis by University of Oregon
Note: only includes employment that was associated with a taxlot.

A key issue related to developing a simplified employment land need methodology is the relationship between employment by industry and land use (as indicated by

property classifications). This analysis allowed the research team to better understand the mix of industries that occurs by within cities as well as land use types. The research team used North American Industrial Classification System (NAICS) codes to conduct the analysis. To simplify the analysis, we created four meta-groupings of industries:

- Industrial: 11, 21, 22, 23, 31-33, 42, 48
- Retail: 44-45
- Services: 51, 52, 53, 54, 55, 56, 61, 62, 71, 72, 81
- Government: 92 and Public Ownership

To conduct this analysis, the research team used a different analysis than for the previous analyses in this section. To retain the industry codes, the research team joined tax lot data to the employment records (the other Tier 2 analysis joined employment data to tax lots).

Table 5-5 shows covered employment for all 216 cities outside of Metro by property classification and generalized employment sector. The results show a high degree of mixing of employment by land use (all of the generalized sectors except government had some employment in every property classification) as well as a high degree of employment sectors within individual land use categories. For example, 9% of industrial employment as measured by NAICS codes was on land classified as commercial; 18% of commercial employment was on land classified as industrial.

Table 5-5. Covered employment by generalized employment sector and property classification, Tier 2 cities, 2012 (n=127)

	Generalized Employment Sector					
Property Classification	**Services**	**Government**	**Industrial**	**Retail**	**Total Employment**	**Percent by Prop Class**
Covered Employment						
Commercial	214,158	14,380	29,900	79,545	337,983	62%
Exempt	63,701	13,414	5,605	615	83,335	15%
Farm	287	47	1,195	40	1,569	0%
Forest	79		25	1	105	0%
Industrial	13,120	776	57,837	3,098	74,831	14%
Misc	3,158	123	4,283	276	7,840	1%
Multi-Family	8,675	12	861	230	9,778	2%
Recreation	182		5	21	208	0%
Residential	17,839	636	9,628	1,587	29,690	5%
Tract	2,123		896	67	3,086	1%
Total	**323,322**	**29,388**	**110,235**	**85,480**	**548,425**	**100%**
Percent of Covered Employment by Employment Sector						
Commercial	63%	4%	9%	24%	100%	
Exempt	76%	16%	7%	1%	100%	
Farm	18%	3%	76%	3%	100%	
Forest	75%		24%	1%	100%	
Industrial	18%	1%	77%	4%	100%	
Misc	40%	2%	55%	4%	100%	
Multi-Family	89%		9%	2%	100%	
Recreation	88%		2%	10%	100%	
Residential	60%	2%	32%	5%	100%	
Tract	69%		29%	2%	100%	
Total	**59%**	**5%**	**20%**	**16%**	**100%**	

Source: Quarterly Census of Employment and Wages, Oregon Explorer, analysis by University of Oregon
Note: only includes employment that was associated with a taxlot

Tables 5-5 and 5-6 show covered employment by generalized employment sector and city size. The results show some interesting patterns. First, commercial employment both in real terms and as a percent of total employment increases as city size increases. Retail follows a similar pattern, with the exception of cities over 50,000. This suggests that as cities grow they provide a broader spectrum of commercial services. Industrial employment decreases as a percentage of total employment as city size increases. Government accounts for a pretty consistent percentage of employment for all cities—between 6% and 10%.

Table 5-6. Covered employment by generalized employment sector by city size, Tier 2 cities, 2012 (n=127)

	Generalized Employment Sector				
Population Class	**Services**	**Retail**	**Industrial**	**Government**	**Total Employment**
Total Employment					
<1,000	4,799	773	2,996	967	9,535
1,000-4,999	27,759	7,145	19,585	4,370	58,859
5,000-9,999	46,603	13,552	17,286	4,847	82,288
10,000-24,999	78,940	22,111	27,374	9,491	137,916
25,000-49,999	26,514	8,147	8,953	3,047	46,661
50,000 or more	217,240	45,603	60,049	27,679	350,571
All Classes	**401,855**	**97,331**	**136,243**	**50,401**	**685,830**
Percent of Employment					
<1,000	50%	8%	31%	10%	100%
1,000-4,999	47%	12%	33%	7%	100%
5,000-9,999	57%	16%	21%	6%	100%
10,000-24,999	57%	16%	20%	7%	100%
25,000-49,999	57%	17%	19%	7%	100%
50,000 or more	62%	13%	17%	8%	100%
All Classes	**59%**	**14%**	**20%**	**7%**	**100%**

Source: Quarterly Census of Employment and Wages, Oregon Explorer, analysis by University of Oregon
Note: only includes employment that was associated with a taxlot.

The research team also analyzed employment by region. The results show a high degree of consistency in the mix of employment by region (Table 5-7).

Table 5-7. Covered employment by generalized employment sector by region, Tier 2 cities, 2012 (n=127)

	Generalized Employment Sector				
Region	Services	Retail	Industrial	Government	Total Employment
Total Employment					
Central Oregon	45,144	12,198	14,783	4,107	76,232
North Coastal Oregon	20,593	5,774	5,365	2,701	34,433
Northeast Oregon	20,575	5,690	11,083	4,192	41,540
South Coastal Oregon	16,582	4,502	4,357	1,685	27,126
Southeast Oregon	16,652	4,925	6,342	2,797	30,716
Southern Oregon	63,423	16,801	17,181	6,213	103,618
Willamette Valley	218,886	47,441	77,132	28,706	372,165
Total	**401,855**	**97,331**	**136,243**	**50,401**	**685,830**
Percent of Covered Employment by Sector					
Central Oregon	59%	16%	19%	5%	100%
North Coastal Oregon	60%	17%	16%	8%	100%
Northeast Oregon	50%	14%	27%	10%	100%
South Coastal Oregon	61%	17%	16%	6%	100%
Southeast Oregon	54%	16%	21%	9%	100%
Southern Oregon	61%	16%	17%	6%	100%
Willamette Valley	59%	13%	21%	8%	100%
Total	**59%**	**14%**	**20%**	**7%**	**100%**

Source: Quarterly Census of Employment and Wages, Oregon Explorer, analysis by University of Oregon
Note: only includes employment that was associated with a taxlot.

Density of Lands Used for Employment

Table 5-8 shows acres in city limits (excluding prohibitively constrained acres), covered employment, and covered employment per acre by city size in 2005 and 2012. This analysis allows analysis of relative employment densities over time, but is limited in that it includes all land in city limits, not just land in employment uses.

The results show that employment density increases by city size, with employment density in cities over 50,000 persons being nine times the density in cities under 1,000 in 2012. The results also show that overall employment density decreased between 2005 and 2012. This is consistent with the employment data presented in Table 5-3.

Table 5-8. Covered employment density for all acres in city limits by city size, all cities outside the Portland Metro UGB, 2005 and 2012 (n=216)

		2005			2012			Change 2005-12		
City Size	Number of Cities	Acres in City Limit *	Covered Emp	Emp/Ac	Acres in City Limit *	Covered Emp	Emp/Ac	Acres in City Limit *	Employment	Emp/Ac
<1,000	81	29,401	6,952	0.24	30,086	9,178	0.31	685	2,226	0.069
1,000-4,999	79	69,059	52,379	0.76	72,407	53,269	0.74	3,348	890	(0.023)
5,000-9,999	28	67,119	76,949	1.15	73,108	78,566	1.07	5,989	1,617	(0.072)
10,000-24,999	17	73,488	125,433	1.71	78,425	128,840	1.64	4,937	3,407	(0.064)
25,000-49,999	4	26,442	44,187	1.67	28,031	46,297	1.65	1,589	2,110	(0.019)
50,000 or more	7	117,882	338,690	2.87	121,453	335,341	2.76	3,571	(3,349)	(0.112)
All Classes	**216**	**383,391**	**644,590**	**1.68**	**403,510**	**651,491**	**1.61**	**20,118**	**6,901**	**(0.067)**

Source: Quarterly Census of Employment and Wages, Oregon Explorer, analysis by University of Oregon
Note: Acres in city limit excludes acres that are "prohibitively constrained." Prohibitively constrained acres are acres in water (lakes, rivers, etc.) or FEMA floodways. The methodology uses property classifications and improvement values to identify improvements. As such, the analysis does not make any judgments about the development status of land (e.g., whether any of the land would be classified as "partially vacant" as some land inventories do. We note that OAR 660-009-0005 does not include any provisions for assessment of partially vacant land.

A more useful measure of employment density is based on employees per developed acre of employment land. The research team used Tier 2 data for 127 cities to conduct this analysis. It is based on covered employment as reported by the Quarterly Census of Employment and Wages (QCEW) and taxlot data. The acreages are acres in taxlots with employment, excluding prohibitive constraints.

Table 5-9 shows covered employment density for developed commercial and industrial land by city size in 2012. The results show an average density of 17.2 employees per net acre for commercial employment, and 8.7 employees per net acre for industrial employment. These results are in the range of those reported in the Goal 9 workbook.[15]

Unlike residential densities, the results do not show any discernable pattern by city size. In fact, the results show that cities under 1,000 population had densities that are similar to larger cities.

[15] The Goal 9 workbook suggests the following density assumptions: commercial – 12 to 20; light industrial – 10 to 15; heavy industrial – 7 to 12

Table 5-9. Covered employment density for developed commercial and industrial land by city size, Tier 2 cities, 2012 (n=127)

		Commercial			Industrial		
City Size	Number of Cities	Developed Acres *	Employment	Emp/Dev Ac	Developed Acres *	Employment	Emp/Dev Ac
<1,000	25	67	1,072	16.1	20	194	9.7
1,000-4,999	46	1,314	14,578	11.1	1,027	4,471	4.4
5,000-9,999	28	2,547	33,730	13.2	1,071	6,480	6.0
10,000-24,999	17	2,789	47,607	17.1	1,241	10,623	8.6
25,000-49,999	4	1,352	20,160	14.9	438	5,461	12.5
50,000 or more	7	7,116	143,596	20.2	3,364	35,410	10.5
All Classes	**127**	**15,184**	**260,743**	**17.2**	**7,161**	**62,639**	**8.7**

Source: Quarterly Census of Employment and Wages, Oregon Explorer, analysis by University of Oregon
Note: Developed acres excludes acres that are "prohibitively constrained." Prohibitively constrained acres are acres in water (lakes, rivers, etc.) or FEMA floodways. We use developed to indicate taxlots with improvements.

Table 5-10 shows statistics for employment density for commercial land by city size. The results show considerable variation by city size (as evidenced by the maximum, minimum and standard deviations). The results also clearly show that variation decreases as size increases (as measured by standard deviation).

Table 5-10. Covered employment statistics for developed commercial land by city size, Tier 2 cities, 2012 (n=101)

City Size	Number of Cities	Developed Acres *	Employment	Emp/Dev Ac	Max EPA	Min EPA	Std. Dev EPA
<1,000	13	67	1,072	16.1	81.9	9.6	18.8
1,000-4,999	41	1,314	14,578	11.1	104.8	2.2	17.7
5,000-9,999	22	2,547	33,730	13.2	37.9	4.7	8.9
10,000-24,999	15	2,789	47,607	17.1	27.9	10.0	5.1
25,000-49,999	3	1,352	20,160	14.9	17.1	12.9	2.2
50,000 or more	7	7,116	143,596	20.2	24.6	15.4	3.2
All Classes	**101**	**15,184**	**260,743**	**17.2**	**104.8**	**2.2**	**14.1**

Source: Quarterly Census of Employment and Wages, Oregon Explorer, analysis by University of Oregon
Note: Developed acres excludes acres that are "prohibitively constrained." Prohibitively constrained acres are acres in water (lakes, rivers, etc.) or FEMA floodways. We use developed to indicate taxlots with improvements.
Note: 101 of 127 Tier 2 cities had land with a commercial property classification (2XX)

Table 5-11 shows statistics for employment density for industrial land by city size. The results show considerable variation by city size (as evidenced by the maximum, minimum and standard deviations). The results also clearly show that variation decreases as size increases (as measured by standard deviation).

Table 5-11. Covered employment statistics for developed industrial land by city size, Tier 2 cities, 2012 (n=77)

City Size	Number of Cities	Developed Acres *	Employment	Emp/Dev Ac	Max EPA	Min EPA	Std. Dev EPA
<1,000	5	20	194	9.7	60.7	0.7	25.8
1,000-4,999	28	1,027	4,471	4.4	89.8	0.4	17.7
5,000-9,999	20	1,071	6,480	6.0	33.5	1.6	7.4
10,000-24,999	14	1,241	10,623	8.6	28.1	2.1	6.8
25,000-49,999	3	438	5,461	12.5	23.2	9.3	7.0
50,000 or more	7	3,364	35,410	10.5	18.2	6.7	3.6
All Classes	**77**	**7,161**	**62,639**	**8.7**	**89.8**	**0.4**	**13.2**

Source: Quarterly Census of Employment and Wages, Oregon Explorer, analysis by University of Oregon
Note: Developed acres excludes acres that are "prohibitively constrained." Prohibitively constrained acres are acres in water (lakes, rivers, etc.) or FEMA floodways. We use developed to indicate taxlots with improvements.
Note: 77 or 127 Tier 2 cities had an industrial property classification (3XX)

Table 5-12 shows covered employment density for developed commercial and industrial land by region in 2012. The results show that commercial densities are more consistent across regions than industrial densities. Central Oregon shows the highest commercial density (20.3 employees per net developed acre), while the South Coastal region shows the lowest (12.1 employees per net developed acre). The South Coastal region showed the highest industrial density (18.9 employees per net developed acre), while the Southeast region showed the lowest (4.5 employees per net developed acre).

Table 5-12. Covered employment density for developed commercial and industrial land by region, Tier 2 cities, 2012 (n=127)

		Commercial			Industrial		
City Size	Number of Cities	Developed Acres *	Employment	Emp/Dev Ac	Developed Acres *	Employment	Emp/Dev Ac
Central Oregon	12	1,597	32,484	20.3	1,299	11,440	8.8
North Coastal Oregon	14	794	15,574	19.6	159	1,338	8.4
Northeast Oregon	12	312	4,290	13.7	74	451	6.1
South Coastal Oregon	6	887	10,702	12.1	58	1,086	18.9
Southeast Oregon	6	486	7,934	16.3	450	2,026	4.5
Southern Oregon	17	2,953	46,914	15.9	386	4,644	12.0
Willamette Valley	60	8,155	142,845	17.5	4,736	41,654	8.8
Total	**127**	**15,184**	**260,743**	**17.2**	**7,161**	**62,639**	**8.7**

Source: Quarterly Census of Employment and Wages, Oregon Explorer, analysis by University of Oregon
Note: Developed acres excludes acres that are "prohibitively constrained." Prohibitively constrained acres are acres in water (lakes, rivers, etc.) or FEMA floodways. We use developed to indicate taxlots with improvements.

CHAPTER 6: FINDINGS AND IMPLICATIONS

This chapter summarizes the key findings of our research and discusses some of the implications for development of a simplified land need methodology. It begins with a discussion regarding the scope of the research and how the UO research team worked to ensure that the work is as comprehensive and accurate as possible. It then discusses the key findings of the research in the context of the HB 2254 requirements. It concludes with a discussion of the implications of our research and how the results might be applied to development of a simplified land need methodology.

Scope of the Research

It is helpful to put the scope of this project in context of previous research efforts in Oregon and of how other states have addressed the issue of monitoring and evaluation of land use and growth management policies.

In Oregon, the most comprehensive evaluation of land use efficiency was completed in 1991. The **Urban Growth Management Study**, conducted by ECONorthwest, used a case study approach, in part due to the limitations of data at that time. The case studies included Portland Metro, Bend, Brookings, and Medford. The conclusions were that significant residential development was occurring outside some of the case study UGBs. The study found that 70% of new residential development was occurring in areas the study defined as "contiguous to the urban core." More important to our study, residential densities were less than those allowed by comprehensive plans. Between 1985 and 1989, single-family development in the "Urban Area" (the incorporated area within the UGB) averaged 3.6 dwelling units per net acre in Medford, 2.5 dwelling units per net acre in Bend, and 3.6 dwelling units per net acre in Medford. While a small sample, the case study results compared to the results of this study suggest Oregon cities have increased residential densities since the late 1980s.

In 2007, DLCD sponsored a project called the "Big Look," which was intended as a comprehensive review of the statewide land use program. While considerable effort was put into the work, it did not include any empirical analysis of land use efficiency. It did include a literature review that was coordinated by the Institute for Natural Resources (INR) at Oregon State University. The INR published "**The Oregon Land Use Program: An Assessment of Selected Goals**" in 2008. The study concluded:

> "Studies of urban form vary greatly in their methodology; they utilize different measures (e.g., density, street connectivity) and different techniques (e.g., cross-sectional and longitudinal data comparisons, econometric modeling; GIS-based analyses.) Judging just on the criterion of population density (as an indicator of more compact urban form), most studies find positive impacts (that is, increasing or more slowly decreasing population densities) either for the UGBs under study or for the type of growth management

implemented by the State of Oregon. The GIS-based studies find some physical evidence for compact urban form (greater connectivity, pedestrian-accessible commercial development)—these studies, however, have been only conducted for the Portland region (Washington County) and cannot be used as evidence for the other UGBs of the state as local level implementation has been shown (at least in 1991) to play a critical role in physical outcomes. The literature does raise continued concern about the performance of the Bend UGB in achieving higher densities and compact urban form."

Outside of Oregon, **Washington's Buildable Lands Program** is a review and evaluation program that requires certain counties and their cities to evaluate whether they have an adequate amount of residential, commercial, and industrial land to meet the forecasted growth. The Buildable Lands Program requires counties and cities to collect data to evaluate the amount and density of development occurring within their jurisdictions. The purpose of the analysis is to determine if jurisdictions are achieving targeted urban densities within urban growth areas consistent with county policies and density targets.[16]

Relying on statewide parcel data (Maryland PropertyView), the **Maryland Department of Planning** publishes annual data on the parcels and acres of residential development inside and outside Priority Funding Areas.[17]

In 2009, the Lincoln Institute of Land Policy published a book called ***Smart Growth Policies: An Evaluation of Programs and Outcomes***. In this study, scholars from across the country examined four states with growth management programs and four states without growth management programs, focusing on several key evaluation areas including population and employment growth patterns, natural resources and environmental quality, transportation, affordable housing, and fiscal dimensions. The section on population and employment growth patterns parallels our work in this report. Relying on nationally available consistent data for 1990-2000, authors considered the change in population and employment density, land consumption, and concentration. The data on population and employment growth patterns convey evidence of declining land consumption in Oregon. The authors conclude, "Data on development patterns in Oregon may indicate more smart growth success there than in any other state. While not among the fastest-growing states, Oregon posted a decade-long decline in developed land per capita. In addition, it was the only state where population and employment became more concentrated during the 1990s and where employment deconcentrated the least." (Ingram et. al, 2009, p. 43.) While these data provided a consistent method for measuring differences across the states, the study was limited to relying on population from Census data at the block group level. In this study, we use tax lot

[16] See http://www.commerce.wa.gov/Services/localgovernment/GrowthManagement/Growth-Management-Planning-Topics/Pages/Buildable-Lands.aspx.

[17] See: http://www.mdp.state.md.us/msdc/PFA/Resid_Growth/PFA_resid_growth_idx.shtml .

data from County Assessor offices to examine the development of parcels, offering a more refined measure of density.

In short, this research represents the most detailed analysis of land use efficiency in the history of the Oregon land use program. The analysis is based on extensive analysis of about 750,000 tax lots in about 130 Oregon cities outside the Portland Metro UGB.

Quality Control

The UO research team took painstaking effort to ensure the accuracy of the data and analysis presented in this report. The quality review process extended through all phases of the research. Quality review began during the data collection process; the team spent considerable time reviewing the data sets and evaluating their potential for use in the research. We concluded that several data sets (including the statewide zoning layer) were not suitable for use in the study. We also eliminated cities that were under population 5,000 and grew less than 1% annually to reduce the effects of development on legacy lands (e.g., lots that were previously platted).

After conducting the analysis, we reviewed several cities that were outliers in terms of land use efficiency and other measures.

- **Residential Density**. A few cities were outliers on single-family residential density. For example, the results show that Seaside had an average single-family and plex density of over 15 dwelling units per net acre. Upon further review, the research team discovered that some types of condominiums had single-family property classifications. Thus, our analysis is correct in the sense that it accurately represents how the Clatsop County Assessor classified those lands, but if these condominiums are in multi-family buildings they would be classified for planning purposes in Oregon as multi-family. On the low side, Lyons had a single-family/plex density of around two units per net acre. Upon review, the research team confirmed that finding; the City has allowed very low-density subdivisions in the recent past.

- **Constraints**. The research team's analysis of residential densities on constrained lands produced an unexpected result: densities on fully constrained tax lots (e.g., lots that are 100% within a constrained area) had higher overall densities than those on partially-constrained or unconstrained land. Upon review, the research team discovered that the higher densities are a result of legacy development that occurred primarily in floodplains in the early 20th century. Development on partially constrained lands appears to result in lower densities (see Appendix C). We note that a relatively small percentage (~2%) of recent development has occurred on constrained lands.

- **Exempt land**. The research team's analysis of exempt lands identified several cities that had high percentages of exempt lands. Upon review, the results are correct and reflect how those lands are classified. Cities with airports, ports, beaches or other large publicly held lands have more land in exempt classifications.

The research team's quality assurance efforts identified some anomalies in the data, but verified that the analysis of the data is correct. Those efforts suggest that some variations exist in how county assessors are classifying land. More important, we confirmed that the outliers represent such a small portion of the overall development analyzed that they do not have a significant influence on the results.

In summary, the analysis presented in this report represents the most comprehensive and accurate analysis possible in the context of the objectives outlined in HB 2254.

Key Findings

This section presents the key findings of our research on land use efficiency. Section 4(3)(b) of the bill requires that the determination of supply and development capacity within UGBs:

> *Be based on an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state.*

In Chapter 2 we described the framework the UO research team used to measure land use efficiency and trends in land use efficiency. The simplest way to measure land use efficiency is in persons or employees per unit area (typically square miles or acres). Following are conclusions about population and employment densities by type:

- **Smaller cities have a proportionally larger share of land in their city limits**. In 2012, 160 of the 216 (75%) cities had a population of less than 5,000 residents. Those cities accounted for 15% of the population and 25% of the total acres within city limits in UGBs. Conversely, 11 cities had a population over 25,000 people 34% of acreage within UGBs. Cities with populations between 5,000 and 25,000 contain 40% of the acreage in UGBs.

- **Smaller cities have lower population and employment densities**. Table 6-1 shows that population density increases as city size increases.

Table 6-1. Population Density by City Size, All Cities Outside the Portland Metro UGB, 2012

	2012 Population		2012 City Limit		
City Size	Number	Percent	Sq Mi	Percent	Persons Per Acre
<1,000	33,772	2%	49.73	7%	679
1,000-4,999	181,620	12%	123.32	18%	1,473
5,000-9,999	218,885	15%	130.76	19%	1,674
10,000-24,999	285,375	19%	132.43	20%	2,155
25,000-49,999	130,255	9%	44.85	7%	2,904
50,000 or more	633,395	43%	197.80	29%	3,202
Total	**1,483,302**	**100%**	**678.89**	**100%**	**2,185**

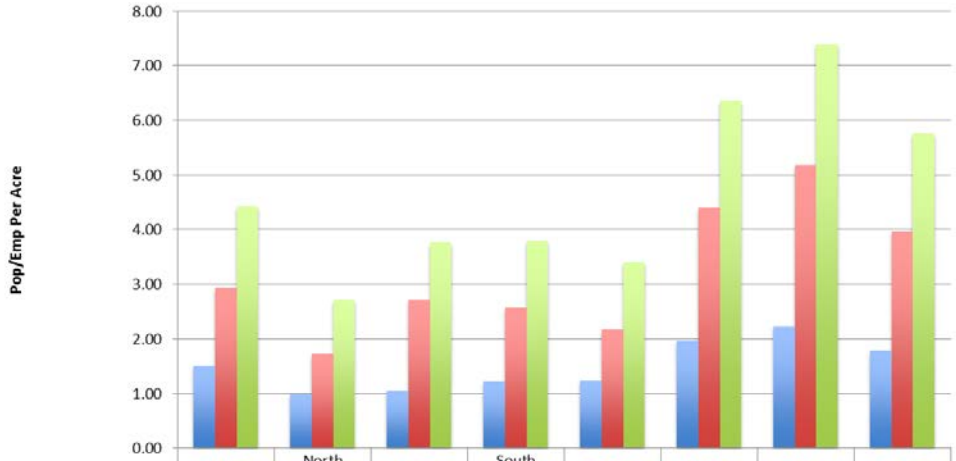
- **Between 2005 and 2012, population increased faster than employment**. Based on covered employment data, the 216 cities outside of the Portland Metro UGB added about 5,900 jobs between 2005 and 2012. Employment grew at a rate much slower than population. Between 2005 and 2012, employment for the 216 cities outside the Portland Metro UGB increased 1.1%; population increased 7.9%. This difference is certainly influenced by the Great Recession, where employment dropped while population remained about the same.

- **Population densities within city limits increased over the 2005 through 2012 period**. For the 130 cities outside the Portland Metro UBG included in the study, population density within city limits (inside UGBs) increased by 12%. Population density for all land in city limits increased from 3.86 persons per acre (2,474 persons per square mile) to 4.32 persons per acre (2,763 persons per square mile).

- **Employment densities within city limits increased over the 2005 through 2012 period.** For the 130 cities outside the Portland Metro UBG included in the study, employment density within city limits increased by 4%. Employment density for all land within city limits increased from 1.86 employees per acre (1,188 employees per square mile) to 1.94 employees per acre (1,240 employees per square mile).

- **Regional differences exist**. Figure 6-1 shows that cities in rural regions generally have lower population and employment densities (as measured in persons or employees per acre). Cities in the Willamette Valley and Southern Oregon region had higher average population and employment densities than other regions. Those regional differences, however, do not control for size or other variables that might explain density.

Figure 6-1. Population and Employment Density for Tier 1 Cities By Region, 2012 (n=130)



	Central Oregon	North Coastal Oregon	Northeast Oregon	South Coastal Oregon	Southeast Oregon	Southern Oregon	Willamette Valley	Total
Employment Density	1.50	0.98	1.05	1.22	1.24	1.96	2.23	1.78
Population Density	2.93	1.73	2.72	2.58	2.17	4.40	5.18	3.98
Pop+Emp Density	4.44	2.72	3.77	3.80	3.41	6.36	7.41	5.76

- **Larger cities account for the majority of population growth.** Between 2005 and 2012, nearly 60% of the population growth in the 216 cities outside the Portland Metro UGB occurred in cities over 25,000 (11 cities) and 75% occurred in cities over 10,000 (28 cities). Seventy-one percent of the 2012 population in cities that are not in the Portland Metro UGB was in cities over 10,000. In this sense, those cities are growing faster on a per unit basis (more new residents per 1,000 existing residents).

- **Population and employment per developed acre vary by city size.** Table 6-2 shows population and employment per improved acre by city size in 2012. The data show that population per improved residential acre generally increases as city size increases. Employment densities show more variation by city size and do not reveal any clear pattern. Analysis by region did not identify any clear patterns in population and employment per improved acre.

Table 6-2. Population and Employment Per Improved Acre by City Size, 2012

City Size	Pop/Ac	Emp/ Comm Ac	Emp/ Ind Ac
<1,000	5.9	16.1	9.7
1,000-4,999	8.3	11.1	4.4
5,000-9,999	11.4	13.2	6.0
10,000-24,999	13.4	17.1	8.6
25,000-49,999	13.0	14.9	12.5
50,000 or more	15.7	20.2	10.5
All Classes	**12.8**	**17.2**	**8.7**

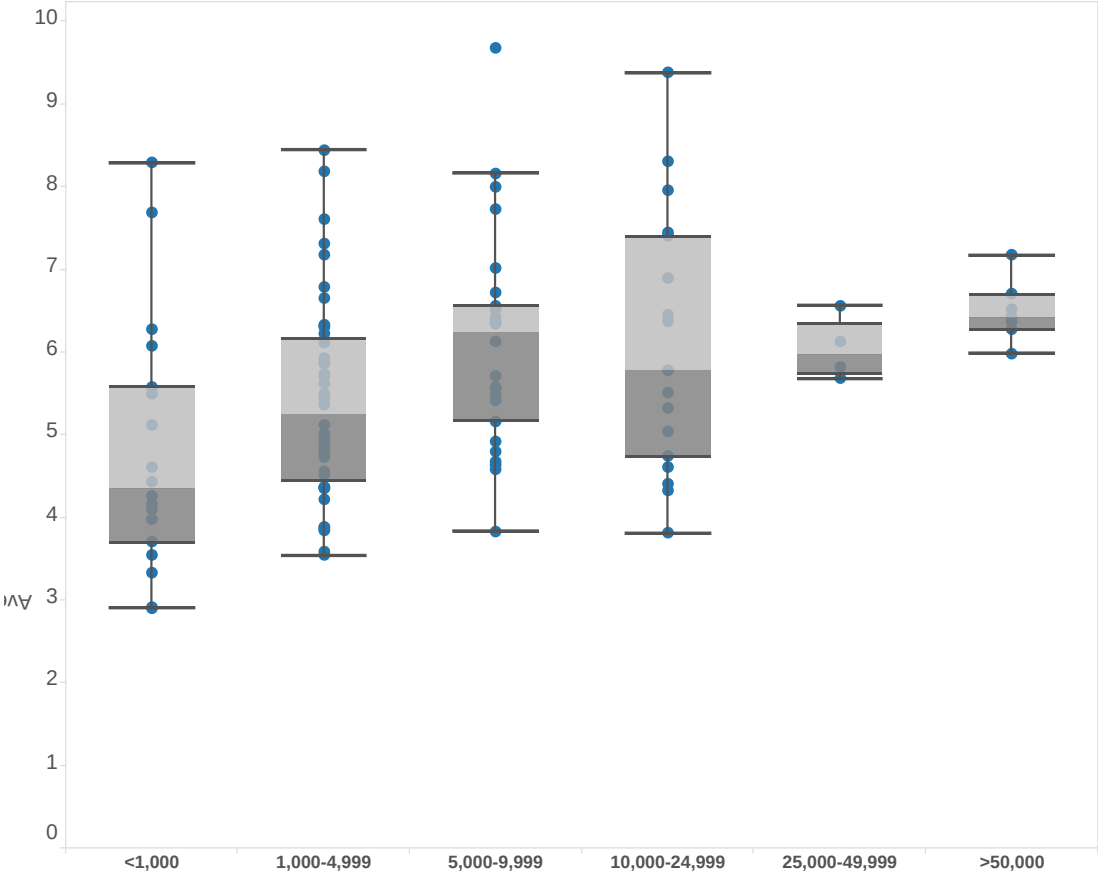
Note: Population density represents 159 cities; commercial employment 101; industrial employment 77

Residential Land Use Efficiency

The analysis of residential densities generally shows that single-family and plex densities have increased over time—for all city sizes and all regions. It also shows that considerable variation exists in single-family and plex densities among cities. Due to data limitations, the research team was not able to analyze trends in multifamily density.

Figure 6-2 shows box-and-whisker plots for single-family and plex density by city size for the 120 Tier 3 cities. Each point represents a city; high and low outliers, including Seaside and Lyons, were excluded. The observations (cities) are divided into quartiles, where each bar represents a quartile and the line between the light and dark gray represents the median value. The narrow bands around values for cities between 25,000-49,999 and cities over 50,000 in population reiterates that larger cities convey less variation than smaller cities. However, these graphics show that densities across the state exist in a narrow band – most cities range from 5 to 7 parcels per unprohibitive acre.

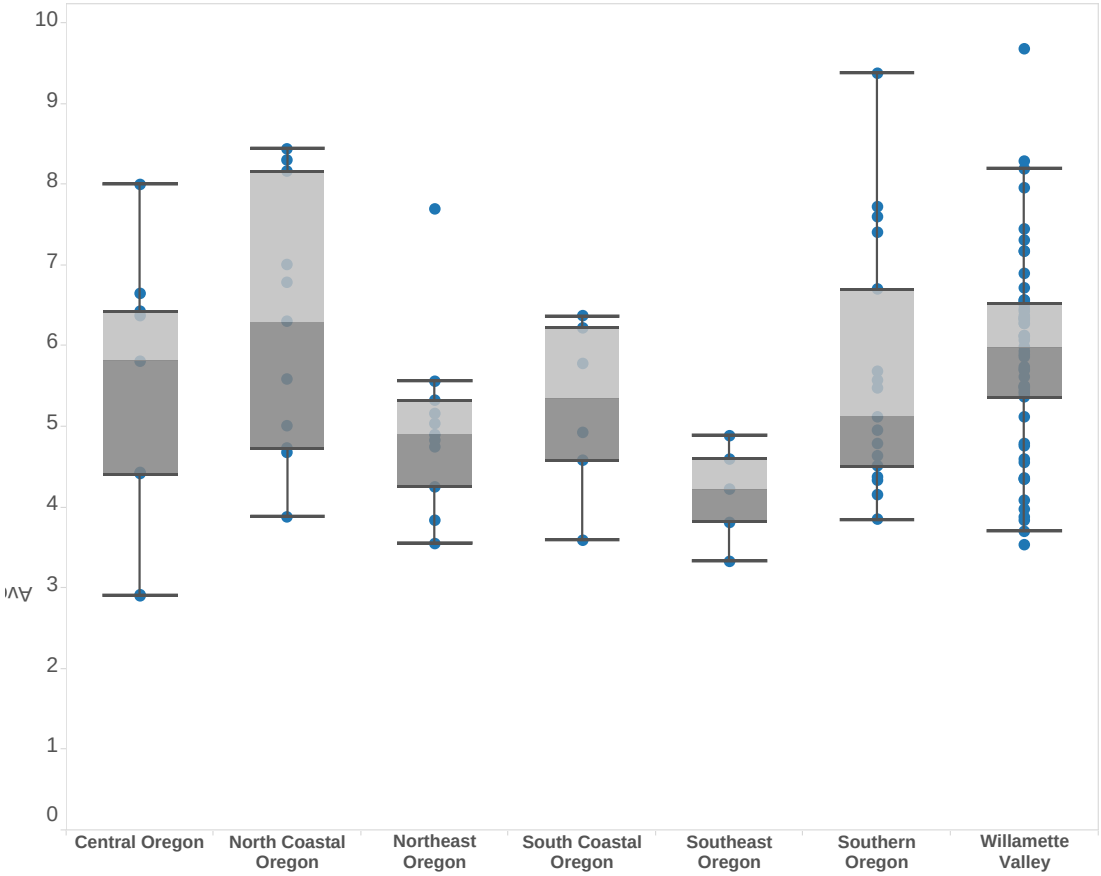
Figure 6-2. Box and Whisker Plot of Single Family & Plex Density by City Size, 2003-2007, Tier 3 cities (n=118)



Excludes Outliers: Lyons, Seaside.

Figure 6-3 shows a box-and-whisker plot by region. The graphic illustrates great variation by region, particularly in the Willamette Valley and Southern Oregon. Northeast and Southeast Oregon show less variation overall, as cities have a narrow range of values.

Figure 6-3. Box and Whisker Plot of Single Family & Plex Density by Region, 2003-2007 (n=118)



Excludes Outliers: Lyons, Seaside

Employment Land Use Efficiency

Chapter 5 provided a detailed analysis of employment densities. Drawing trend conclusions from the employment data are limited by (1) the data, and (2) the impact of the Great Recession on employment in Oregon. The employment data presented in this report only represent so-called "covered" employment—employment that is covered by unemployment insurance. Covered employment represents about 75% of total employment in Oregon. Thus, the employment densities in this report are systematically low.

Figure 6-4 shows box-and-whisker plots for **commercial** employment density by city size for 128 Tier 2 cities. The narrow bands around values for cities between 25,000-49,999 and cities over 50,000 in population underscores that larger cities have less variation than smaller cities. The graphic shows that commercial densities across the state have considerable variation. Looking at averages by city size, most cities range from 11 to 21 employees per net acre. Commercial employment densities averaged 17.1 employees per net acre for all 128 cities and ranged from a low of 11.1 employees per net acre for cities with populations between 1,000 and 4,999, to a high of 20.9 for cities with populations over 50,000.

Figure 6-4. Box and Whisker Plot of <u>Commercial</u> Employment Density by City Size, 2003-2007 (n=128)

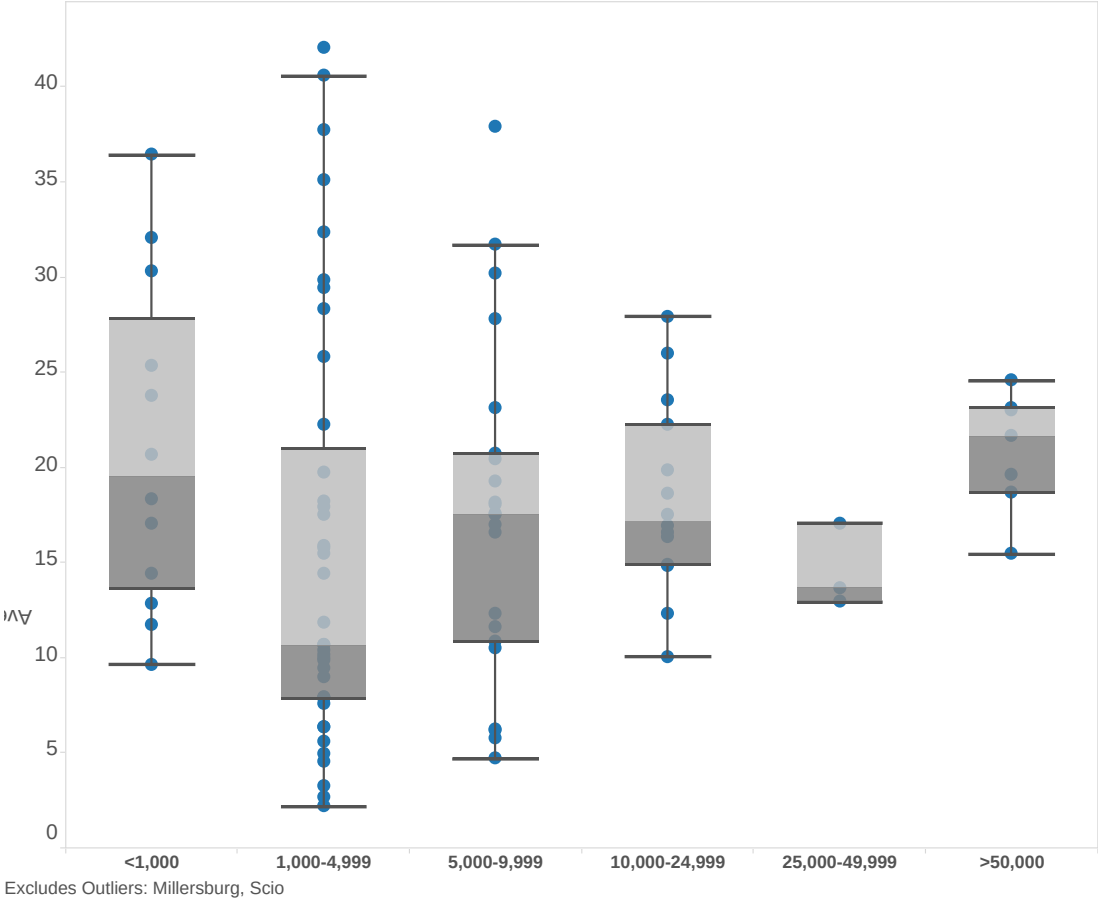


Figure 6-5 shows box-and-whisker plots for **industrial** employment density by city size for 128 Tier 2 cities. The shaded bands around values for cities between 25,000-49,999 and cities over 50,000 in population shows that the smallest and largest cities have less variation than other cities. The graphic shows that industrial densities across the state show considerable variation. Averages by population class show that industrial densities generally range from 4.4 to 12.5 employees per net acre. Industrial employment densities averaged 8.7 employees per net acre for all 128 cities and ranged from a low of 4.4 employees per net acre for cities with populations less than 1,000, to a high of 12.5 for cities with populations between 25,000 and 49,999.

Figure 6-5. Box and Whisker Plot of <u>Industrial</u> Employment Density by City Size, 2003-2007 (n=128)

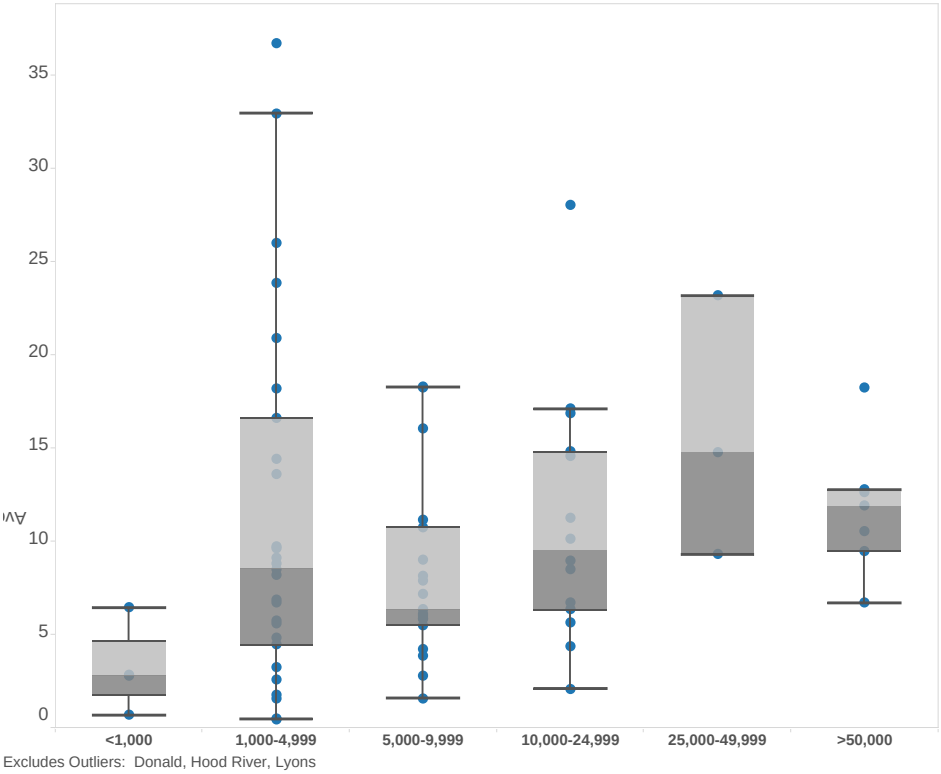
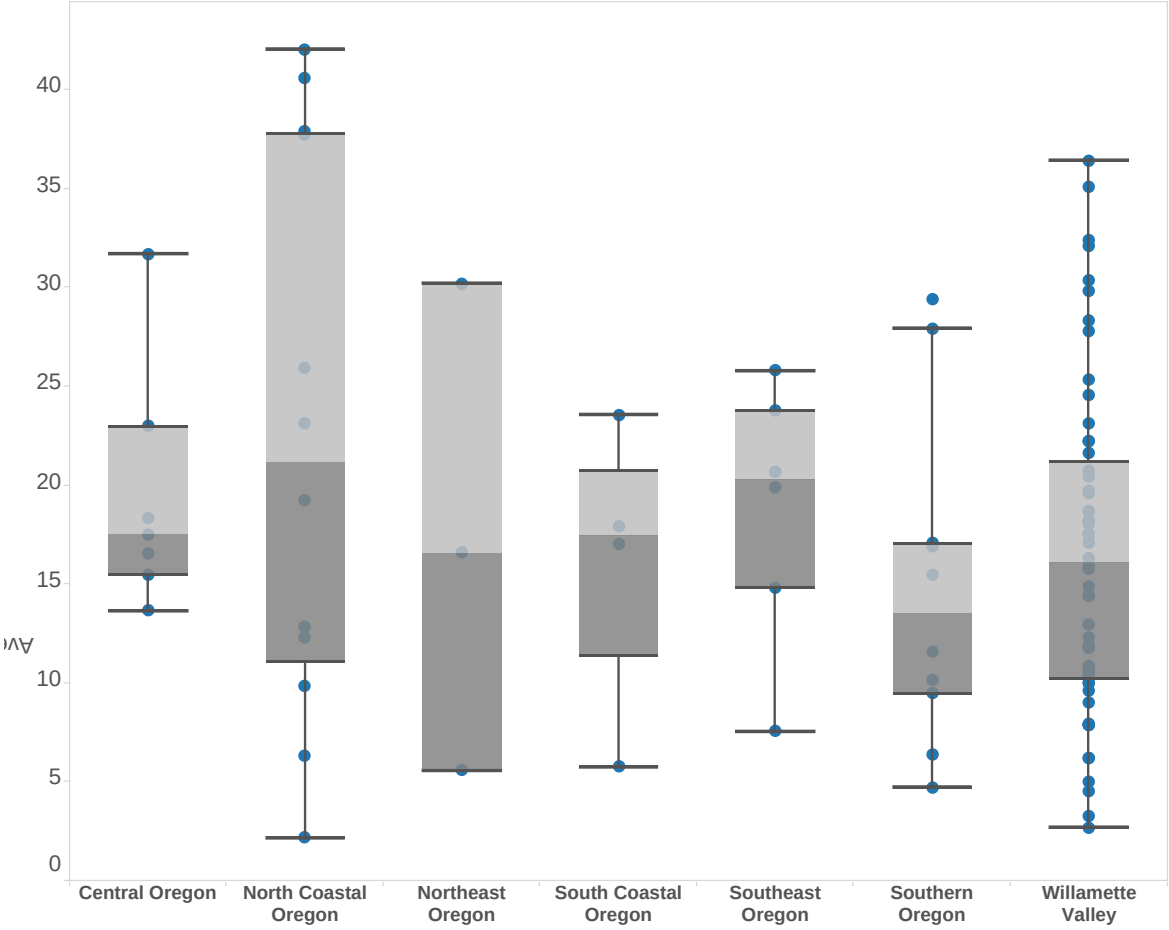


Figure 6-6 shows a box-and-whisker plot of **commercial** employment density by region. The graphic illustrates great variation by region, particularly in the Willamette Valley and North Coast regions.

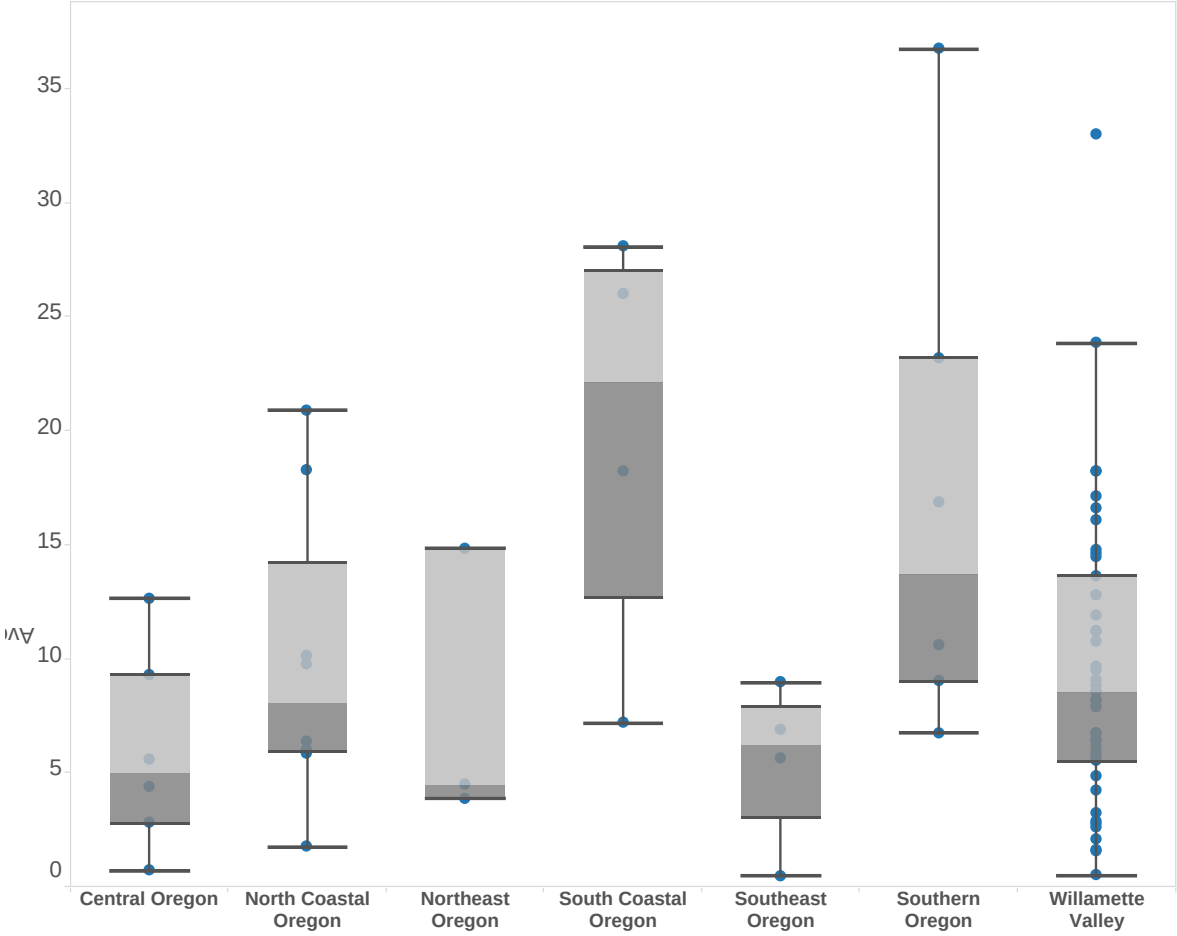
Figure 6-6. Box and Whisker Plot of <u>Commercial</u> Employment Density by Region, 2003-2007 (n=128)



Excludes outliers: Millersburg & Scio

Figure 6-7 shows a box-and-whisker plot of **industrial** employment by region. The graphic illustrates great variation by region, particularly in the Willamette Valley and Southern Oregon regions.

Figure 6-7. Box and Whisker Plot of Industrial Employment Density by Region, 2003-2007



Excludes Outliers: Donald, Hood River, Lyons

Statistical Relationships

Of interest to the H.B. 2254 Rulemaking Advisory Committee was whether simple statistical relationships existed that could explain the influence of city size or region on land use efficiency. To better understand whether those relationships exist, the UO Team developed several simple linear regression models. The results were conclusive: housing and employment density is a function of more than just population or region. The implication is that developing a deterministic statistical model that meets the objectives of this study (e.g., a simple method of determining land need) is not possible. We note that development of a deterministic statistical model was never an objective of this research and is not mentioned in the legislation.

The key issue is the amount of variability that exists among cities. Based on the simple statistical models, that variability is a function of more than population and region. While the UO Team did not find simple statistical models that fit, the data still show patterns that are relevant and useful for the purposes of the research and legislation.

Implications

The results of the research have utility for the rulemaking process, but do not obviate the need for difficult policy choices. The results show that cities are becoming more efficient over time. The policy choice about whether cities should become more efficient in the future is embedded in the legislation; the approach the rule takes will need to incorporate this requirement.

Following is a summary of implications developed by the UO research team:

- **Smaller cities, on average, are less dense than larger cities.** This suggests that methodologies that incorporate city size may be appropriate. Moreover, population appears to be a strong determinant of the amount of variability in land use efficiency. The data clearly show that smaller cities have more variability in both housing and employment density than larger cities. This variability makes it difficult to develop simple linear functions that would serve as predictors of future densities.

  OAR 660-024a provides density and housing mix "safe harbor" thresholds that vary by city size. OAR 660-007 has a similar system for cities in the Portland Metro UGB. The rule provides sample calculations for calculating the needed density and mix of housing. The methodology provides an example of one possible approach to simplify land need estimates. While we do not have empirical data on the number of cities that have used this methodology, our general sense is that most cities have opted for the standard path. It is worth considering why jurisdictions have selected the standard pathway over the OAR 660-024-0040(8)(a) methodology.

- **The density analysis provides baseline data that can inform density thresholds.** No previous studies in Oregon have included such a broad and comprehensive review of land use efficiency. Accompanying this report is a set of tables that provides data for each city included in the study. That data provides a point-in-time snapshot of the efficiency of residential and employment development for each city. This baseline data provides a foundation that can be used to establish density thresholds. The two obvious variations for setting thresholds are by city size (similar to OAR 660-024a) and by region.

- **Larger cities account for the majority of population growth**. Between 2005 and 2012, 75% of population growth occurred in cities over 10,000. Because these cities are growing, they are the most likely to use a simplified UGB methodology. If the intent of UGB streamlining is to develop simpler methods to estimate land need, methodologies that consider city size and growth rates have merit.

- **Regional differences exist, and could be incorporated into a simplified methodology**. The results show that cities in Northeast and Southeast

Oregon have consistently lower residential and employment densities than other regions. A simplified methodology could recognize these differences and establish density thresholds based on location.

- **Limits to efficiency increases should be recognized and incorporated into the methodology**. Focusing on one element of the analysis—single-family and plex efficiency—the data clearly show that on average cities are generally becoming more efficient. Upper bounds to single-family efficiency exist and are a simple function of lot and dwelling sizes. As a general rule of thumb, single-family densities of 8 to 10 units per net acre represent a reasonable upper bound. This equates to average lot sizes of 4,300 to 3,630 square feet. While smaller lot sizes are possible, achieving average single-family densities in this range implies a much different urban form. In short, the rule should recognize these limits to density and not assume a straight linear function for all time.

- **Limited data on multifamily densities creates complications for estimating multifamily land need**. Few counties had dwelling unit counts associated with tax lots, and those that did we found unreliable. Simplified methods for determining multifamily land need are still possible and should be considered in the context of overall housing density and mix. A combination of census data and multifamily density assumptions is one possibility:

    - Use the Census data analysis by city size as a baseline for housing mix.

    - Consider establishing a "standard" multifamily density that gets scaled by city size. In studies the UO research team reviewed as part of this research, most cities are achieving densities of 15+ dwelling units per net acre.

    - Consider incentives for small cities to create exclusive multifamily zones. Many small cities allow single-family detached dwellings as an outright use in multifamily zones. While this provides flexibility in the market, having dedicated multifamily zones provides greater certainty that cities will meet identified needs for multifamily housing.

- **Employment shows dispersion patterns similar to housing by city size**. The average employment figures track pretty closely with employment densities DLCD recommends in the Goal 9 workbook. These average densities could be used as thresholds or nominal assumptions. Because industrial densities are so much different that other employment types, we recommend disaggregating by industrial and other employment consistent with the guidance in OAR 660-009.

- **Methodologies for roads and public lands should apply to all lands within city limits, not only residential lands**. Current state policy (OAR

660-024) allows cities to use a safe harbor assumption of 25% for roads, schools and parks. The research suggests that these uses do not always occur in residential areas and that a factor applied to all land might provide a more consistent and accurate approach. Due to limitations with zoning data, the UO research team was unable to analyze the amount of exempt land by zone.

- **Simplified methods that use a population or employment factor per improved acre are possible**. Tables 6-2 and 6-3 show average population and employment per improved acre by city size and region.

Table 6-2. Average population and employment per improved acre, by city size, 2012

City Size	Pop/Ac	Emp/ Comm Ac	Emp/ Ind Ac
<1,000	5.9	16.1	9.7
1,000-4,999	8.3	11.1	4.4
5,000-9,999	11.4	13.2	6.0
10,000-24,999	13.4	17.1	8.6
25,000-49,999	13.0	14.9	12.5
50,000 or more	15.7	20.2	10.5
All Classes	**12.8**	**17.2**	**8.7**

Note: Population density represents 159 cities; commercial employment 101; industrial employment 77

Table 6-3. Average population and employment per improved acre, by region, 2012

Region	Pop/Ac	Emp/Comm Ac	Emp/Ind Ac
Central Oregon	10.7	20.3	8.8
North Coastal Oregon	10.6	19.6	8.4
Northeast Oregon	10.3	13.7	6.1
South Coastal Oregon	8.9	12.1	18.9
Southeast Oregon	14.0	16.3	4.5
Southern Oregon	10.4	15.9	12.0
Willamette Valley	15.8	17.5	8.8
Total	**12.8**	**17.2**	**8.7**

Note: Population density represents 159 cities; commercial employment 101; industrial employment 77

A simplified method using population and employment per acre factors would have four steps. It would require a population forecast and an employment forecast that disaggregates employment by commercial and industrial land use. Following is an example using the factors from Tables 6-2 and 6-3:

1. City X has a population forecast that adds 10,000 persons for the 20 year period. Total residential land need is 781 acres (10,000 divided by 12.8 persons per acre)).

2. City X has an employment forecast of 5,000. Disaggregated, 3,500 employees need commercial land and 1,500 need industrial land.
    a. Commercial land need is 204 acres (3,500 divided by 17.2 employees per acre)
    b. Industrial land need is 171 acres (1,500 divided by 8.7)
3. Total land need for population and employment is 1,156 acres (781 + 204 + 171)
4. Land need for roads, schools, parks, and all other government uses is 472 acres (1,156 acres divided by 1 minus 29% from Table 3-12) equals 472 acres (1,628 minus 1,156)
5. Total land need is 1,628 acres. This equates to 9.21 persons+employees per acre (10,000 persons plus 5,000 employees equals 15,000; 15,000 divided by 1,628 equals 9.21).

In summary, the analysis presented in this report represents the most comprehensive and accurate analysis possible in the context of the objectives outlined in HB 2254. We recognize considerable variation exists among cities; that variability underscores the normative decisions that accompany this effort to simplify the need determination. To the extent the data allow, it provides the foundation to address the requirement that the method.

APPENDIX A: ORS 197A

Chapter 197A —

Comprehensive Land Use Planning II

2013 EDITION

COMPREHENSIVE LAND USE PLANNING II

MISCELLANEOUS MATTERS

197A.300 Definitions for ORS 197A.300 to 197A.325

197A.302 Purposes; rules

197A.305 Amendment of urban growth boundaries outside Metro; rules

197A.310 Cities with population of less than 10,000; rules

197A.312 Cities with population of 10,000 or more; rules

197A.315 Expansion study areas; notice; urban services agreements

197A.320 Priority of land to be included within urban growth boundaries outside Metro; rules

197A.325 Review of final decision of city; rules

Note: Definitions in 197.015 apply to ORS chapter 197A.

197A.300 Definitions for ORS 197A.300 to 197A.325. As used in ORS 197A.300 to 197A.325:

(1) "Buildable lands" means land in urban or urbanizable areas that are suitable for urban uses.

(2) "Serviceable" means, with respect to land, that:

(a) Adequate sewer, water and transportation capacity for planned urban development is available or can be either provided or made subject to committed financing; or

(b) Committed financing can be in place to provide adequate sewer, water and transportation capacity for planned urban development. [2013 c.575 §1]

Note: 197A.300 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.302 Purposes; rules. The purpose of ORS 197A.300 to 197A.325 is to direct the Land Conservation and Development Commission to develop and adopt simplified methods

for a city that is outside Metro to evaluate or amend the urban growth boundary of the city. The commission should design the methods to:

(1) Become, as a result of reduced costs, complexity and time, the methods that are used by most cities with growing populations to manage the urban growth boundaries of the cities;

(2) Encourage, to the extent practicable given market conditions, the development of urban areas in which individuals desire to live and work and that are increasingly efficient in terms of land uses and in terms of public facilities and services;

(3) Encourage the conservation of important farm and forest lands, particularly lands that are needed to sustain agricultural and forest products industries;

(4) Encourage cities to increase the development capacity within the urban growth boundaries of the cities;

(5) Encourage the provision of an adequate supply of serviceable land that is planned for needed urban residential and industrial development; and

(6) Assist residents in understanding the major local government decisions that are likely to determine the form of a city's growth. [2013 c.575 §2]

Note: 197A.302 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.305 Amendment of urban growth boundaries outside Metro; rules. (1) In addition to and not in lieu of the method prescribed in ORS 197.295 to 197.314 and the statewide land use planning goals, the Land Conservation and Development Commission shall adopt by rule methods by which a city that is outside Metro may evaluate or amend the urban growth boundary of the city.

(2) A city outside Metro may use the methods adopted pursuant to:

(a) ORS 197A.310 if the city has a population of less than 10,000.

(b) ORS 197A.312 if the city has a population of 10,000 or more.

(3) A city that elects to include land within the urban growth boundary of the city under a method established pursuant to ORS 197A.310 or 197A.312:

(a) May use the method again when:

(A) The population of the city has grown by at least 50 percent of the amount of growth forecast to occur in conjunction with the previous use of the method by the city; or

(B) At least one-half of the lands identified as buildable lands during the previous use of the method by the city have been developed.

(b) Shall evaluate whether the city needs to include within the urban growth boundary additional land for residential or employment uses before the population of the city has grown by 100 percent of the population growth forecast to occur in conjunction with the previous use of the method by the city.

(4) A city that elects to use a method established pursuant to ORS 197A.310 or 197A.312 shall notify the Department of Land Conservation and Development of the election in the manner required by ORS 197.610 for notice of a post-acknowledgment plan amendment. The city may revoke the election until the city makes a final decision whether to amend the urban growth boundary of the city. A city that has initiated, but not completed, an amendment of its urban growth boundary before January 1, 2014, may withdraw the proposed amendment and use a method established pursuant to ORS 197A.310 or 197A.312 by filing notice of the election with the department in the manner required by ORS 197.610 and 197.615 for notice of a post-acknowledgment plan amendment.

(5) Beginning on or before January 1, 2023, the commission shall:

(a) Evaluate, every five years, the impact of the implementation of ORS 197A.310 (2) and 197A.312 (2) on the population per square mile, livability in the area, the provision and cost of urban facilities and services, the rate of conversion of agriculture and forest lands and other considerations;

(b) Consider changes to the statewide land use planning goals or rules to address adverse outcomes; and

(c) Make recommendations to the Legislative Assembly, as necessary, for statutory changes. [2013 c.575 §3]

Note: 197A.305 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.310 Cities with population of less than 10,000; rules. (1) In addition to and not in lieu of the method prescribed in ORS 197.295 to 197.314 and the statewide land use planning goals, the Land Conservation and Development Commission shall adopt a method by which a city outside Metro that has a population of less than 10,000 may evaluate or amend its urban growth boundary.

(2) The commission shall design the method so that:

(a) A city using the method:

(A) Will have within its boundaries sufficient buildable lands and other development capacity, including land and capacity for needed housing and employment opportunities, to meet the growth in population and employment forecast to occur over a 14-year period.

(B) Will not become less efficient in its use of land as a result of a change to the urban growth boundary.

(b) The urban population per square mile will continue, subject to market conditions, to increase over time on a statewide basis and in major regions of the state, including that portion of the Willamette Valley outside of Metro.

(c) The rate of conversion of agricultural and forest lands to urban uses does not increase over time in any major region of the state.

(3) Under the method adopted by the commission:

(a) A city's determination of the amount of buildable lands needed for housing, employment and other urban uses must be based on the population and employment growth forecast to occur over a 14-year period.

(b) A city's determination of the supply and development capacity of lands within its urban growth boundary must be based on:

(A) A simple inventory of vacant and partially vacant buildable lands within the urban growth boundary;

(B) The comprehensive plan designation and the zoning of the portion of the buildable lands that is urban; and

(C) Simple factors established by the commission for forecasting:

(i) The development and redevelopment capacity of urbanizable lands within the urban growth boundary; and

(ii) The redevelopment capacity of developed urban lands within the urban growth boundary.

(c) A city's determination of the supply and development capacity of lands the city proposes to include within the urban growth boundary must be based on:

(A) A simple inventory of vacant and partially vacant lands; and

(B) Simple factors established by the commission for forecasting the development and redevelopment capacity of the lands.

(d) A city shall demonstrate that lands included within the urban growth boundary:

(A) Include sufficient serviceable land for at least a seven-year period.

(B) Can all be serviceable over a 14-year period.

(e) Lands included within the urban growth boundary:

(A) Must be planned and zoned for categories of land uses in amounts that are roughly proportional to the land need determined for each category of use;

(B) Must be planned and zoned for an intensity of use that is generally consistent with the estimates that were used to determine the amount of land needed;

(C) Must be planned and zoned to meet the requirements for needed housing, and those requirements must be specified by rule of the commission in a manner that is as objective as practicable; and

(D) May be either:

(i) Planned and zoned, or otherwise conditioned, to avoid significantly affecting a state highway, a state highway interchange or a freight route designated in the Oregon Highway Plan; or

(ii) Allowed to significantly affect a state highway, a state highway interchange or a freight route designated in the Oregon Highway Plan subject to mitigation, consistent with rules of the commission, if the lands are planned and zoned for compact urban development or industrial uses.

(4) For purposes of subsection (3)(a) of this section, population growth must be forecast as provided in ORS 195.033. Employment growth must be forecast based on the population growth forecast for the city or the employment growth forecast issued by the Employment Department for the county or region. The commission shall establish factors, by rule, for converting the forecasted population and employment growth into forecasts of land need for housing, employment and other categories of uses. The factors must:

(a) Be based on an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state;

(b) Reflect consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state;

(c) Be designed to encourage an increase in the land use efficiency of a city, subject to market conditions; and

(d) Provide a range of policy choices for a city about the form of its future growth.

(5) For purposes of subsection (3)(b) of this section, the commission shall establish factors for supply and development capacity that are:

(a) Based on an empirical evaluation of the population and employment growth that has occurred on similarly situated lands through development and redevelopment;

(b) Based on consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state;

(c) Designed to encourage an increase in the land use efficiency of the city, subject to market conditions; and

(d) Designed to provide a range of policy choices for a city about the form of its future growth.

(6) For purposes of subsection (3)(c) of this section, the commission shall establish factors that are:

(a) Based on an empirical evaluation of the population and employment growth that has occurred on similarly situated lands through development and redevelopment;

(b) Based on consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in each major region of the state;

(c) Designed to encourage an increase in the land use efficiency of the city, subject to market conditions; and

(d) Designed to provide a range of policy choices for a city about the form of its future growth.

(7) For lands that are included within an urban growth boundary pursuant to this section and not made serviceable within 20 years after the date of their inclusion, the commission may provide by rule that:

(a) The lands must be removed from within the urban growth boundary the next time the city evaluates the urban growth boundary; or

(b) The planned development capacity of the lands must be reduced if there are significant increases in the cost of making the lands serviceable.

(8) When lands included within the urban growth boundary pursuant to this section are planned and zoned for industrial or residential uses, the lands must remain planned and zoned for the use unless a rule of the commission allows a change in planning and zoning based on a significant change in circumstance. [2013 c.575 §4; 2013 c.575 §9]

Note: 197A.310 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.312 Cities with population of 10,000 or more; rules. (1) In addition to and not in lieu of the method prescribed in ORS 197.295 to 197.314 and the statewide land use planning goals, the Land Conservation and Development Commission shall adopt a method by which a city outside Metro that has a population of 10,000 or more may evaluate or amend its urban growth boundary.

(2) The commission shall design the method so that:

(a) A city using the method:

(A) Will have within its boundaries sufficient buildable lands and other development capacity, including land and capacity for needed housing and employment opportunities, to meet the growth in population and employment forecast to occur over a 14-year period.

(B) Will not become less efficient in its use of land as a result of a change to the urban growth boundary.

(b) The urban population per square mile will continue to increase over time on a statewide basis and in major regions of the state, including that portion of the Willamette Valley outside of Metro.

(c) The rate of conversion of agricultural and forest lands to urban uses does not increase over time in any major region of the state.

(3) Under the method adopted by the commission:

(a) A city's determination of the amount of buildable lands needed for housing, employment and other urban uses must be based on the population and employment growth forecast to occur over a 14-year period.

(b) A city's determination of the supply and development capacity of lands within its urban growth boundary must be based on:

(A) An inventory of vacant and partially vacant buildable lands within the urban growth boundary;

(B) The comprehensive plan designation and the zoning of the portion of the buildable lands that is urban; and

(C) Factors established by the commission for forecasting:

(i) The development and redevelopment capacity of urbanizable lands within the urban growth boundary; and

(ii) The redevelopment capacity of developed urban lands within the urban growth boundary.

(c) A city shall consider a range or combination of measures identified by rule of the commission to accommodate future need for land within the urban growth boundary and implement at least one measure or satisfy an alternate performance standard established by the commission. The commission shall design the alternate performance standard so that the standard is satisfied when the city:

(A) Has a development code that contains specified provisions designed to encourage the development of needed housing; and

(B) Demonstrates that, during the preceding planning period, the city:

(i) If located in the Willamette Valley, exceeded the median rate of redevelopment and infill for cities with a population of 10,000 or more in the Willamette Valley that are outside of the boundaries of Metro by an amount set by commission rule; and

(ii) If located outside of the Willamette Valley, exceeded the median rate of redevelopment and infill for cities with a population of 10,000 or more that are outside the Willamette Valley by an amount set by commission rule.

(d) A city shall demonstrate that lands included within the urban growth boundary:

(A) Include sufficient serviceable land for at least a seven-year period.

(B) Can all be serviceable over a 14-year period.

(e) Lands included within the urban growth boundary:

(A) Must be planned and zoned for categories of land uses in amounts that are roughly proportional to the land need determined for each category of use;

(B) Must be planned and zoned for an intensity of use that is generally consistent with the estimates that were used to determine the amount of land needed;

(C) Must be planned and zoned to meet the requirements for needed housing, and those requirements must be specified by rule of the commission in a manner that is as objective as practicable; and

(D) May be either:

(i) Planned and zoned, or otherwise conditioned, to avoid significantly affecting a state highway, a state highway interchange or a freight route designated in the Oregon Highway Plan; or

(ii) Allowed to significantly affect a state highway, a state highway interchange or a freight route designated in the Oregon Highway Plan subject to mitigation, consistent with rules of the commission, if the lands are planned and zoned for compact urban development or industrial uses.

(4) For purposes of subsection (3)(a) of this section, population growth must be forecast as provided in ORS 195.033. Employment growth must be forecast based on the population growth forecast for the city or the employment growth forecast issued by the Employment Department for the county or region. The commission shall establish factors, by rule, for converting the forecasted population and employment growth into forecasts of land need for housing, employment and other categories of uses. The factors must:

(a) Be based on an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state;

(b) Reflect consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state;

(c) Be designed to encourage an increase in the land use efficiency of a city, subject to market conditions; and

(d) Provide a range of policy choices for a city about the form of its future growth.

(5) For purposes of subsection (3)(b) of this section, the commission shall establish factors for supply and development capacity that are:

(a) Based on an empirical evaluation of the population and employment growth that has occurred on similarly situated lands through development and redevelopment;

(b) Based on consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state;

(c) Designed to encourage an increase in the land use efficiency of the city, subject to market conditions; and

(d) Designed to provide a range of policy choices for a city about the form of its future growth.

(6) For purposes of subsection (3)(c) of this section, the commission shall establish factors that are:

(a) Based on an empirical evaluation of the population and employment growth that has occurred on similarly situated lands through development and redevelopment;

(b) Based on consideration by the commission of any significant changes occurring or expected to occur in the markets for urban land uses in each major region of the state;

(c) Designed to encourage an increase in the land use efficiency of the city, subject to market conditions; and

(d) Designed to provide a range of policy choices for a city about the form of its future growth.

(7) For lands that are included within an urban growth boundary pursuant to this section and not made serviceable within 20 years after the date of their inclusion, the commission may provide by rule that:

(a) The lands must be removed from within the urban growth boundary the next time the city evaluates the urban growth boundary; or

(b) The planned development capacity of the lands must be reduced if there are significant increases in the cost of making the lands serviceable.

(8) When lands included within the urban growth boundary pursuant to this section are planned and zoned for industrial or residential uses, the lands must remain planned and zoned for the use unless a rule of the commission allows a change in planning and zoning based on a significant change in circumstance. [2013 c.575 §5; 2013 c.575 §10]

Note: 197A.312 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.315 Expansion study areas; notice; urban services agreements. (1) As used in this section, “district” means:

(a) A domestic water supply district organized under ORS chapter 264.

(b) A parks and recreation district organized under ORS chapter 266.

(c) A sanitary district organized under ORS 450.005 to 450.245.

(d) A rural fire protection district organized under ORS chapter 478.

(2) When a city evaluates or amends the urban growth boundary of the city under ORS 197A.312, the city shall notify:

(a) Each district that has territory within the study area established under ORS 197A.320.

(b) Each county that has land use jurisdiction over any portion of the study area.

(3) The notification must:

(a) Include a map showing the study area; and

(b) State that, in order to execute or amend an urban services agreement concerning the study area, the district shall respond to the notice within 60 days of the date the notice is mailed if the district enters into or amends an urban services agreement concerning the study area.

(4) An urban services agreement executed under this section must satisfy the requirements of ORS 195.065 (1)(a) to (f). When a city and a district execute an urban services agreement pursuant to this section, the city and the district are not required to participate in the negotiation of an urban service agreement under ORS 195.065 to 195.085.

(5) Before executing the urban service agreement, the city and the district shall consult with community planning organizations that are recognized by the governing body of the city and whose boundaries include territory in the study area that may be affected by the urban service agreement.

(6) If the special district chooses not to negotiate an urban service agreement or does not respond to the notice within 60 days, the city may withdraw from the service territory of the district any portion of the study area that is included within the urban growth boundary of the city and annexed to the city.

(7) If the district responds in writing to the notice within 60 days and requests to execute an urban service agreement for the study area with the city, the city and the district shall meet to develop the agreement within 60 days after the district responds.

(8) If the city and district are unable to develop the agreement within 180 days after the date of the first meeting, the city or the district may require mediation. If mediation is required, the city and the district shall each designate an individual to work with the city and the district to develop an agreement. The city and the district are each responsible for the costs of the mediator it selects.

(9) If the city and the district are unable to develop the agreement after an additional 180 days, the city or the district may require arbitration. The mediators selected under subsection (8) of this section shall jointly select a third individual, and the three individuals shall constitute an arbitration panel to develop the urban services agreement. If the mediators are unable to agree on the third individual, the Director of the Department of Land Conservation and Development shall select an individual from a list of qualified arbitrators provided by the Land Conservation and Development Commission. The city and the district shall bear the cost of the third individual equally. The arbitration panel:

(a) Shall consider the provisions of ORS 222.460, 222.465, 222.510 to 222.570, 222.575 and 222.580; and

(b) May not:

(A) Require the city or the district to pay the other party as part of the urban services agreement unless:

(i) The urban services agreement requires a transfer of physical assets, in which case the agreement may require the payment of fair market value for the assets; or

(ii) A party has offered a payment as part of prior negotiations and the arbitrators incorporate all or a portion of the negotiated payment in the agreement;

(B) Prevent a city from including land within the urban growth boundary of the city; or

(C) Prohibit a city from annexing territory that is within the urban growth boundary of the city.

(10) A city may not withdraw territory from the service territory of a district:

(a) Unless the district does not respond to the notice required by subsection (2) of this section; or

(b) Until the city and the district develop an urban services agreement under this section.

(11) Decisions related to the execution of an urban service agreement under this section are not land use decisions subject to the jurisdiction of the Land Use Board of Appeals. [2013 c.575 §6]

Note: 197A.315 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.320 Priority of land to be included within urban growth boundaries outside Metro; rules. (1) Notwithstanding the priority in ORS 197.298 for inclusion of land within an urban growth boundary, a city outside of Metro shall comply with this section when determining which lands to include within the urban growth boundary of the city pursuant to ORS 197.295 to 197.314, 197A.310 or 197A.312.

(2) The Land Conservation and Development Commission shall provide, by rule, that:

(a) When evaluating lands for inclusion within the urban growth boundary, the city shall establish a study area that includes all land that is contiguous to the urban growth boundary and within a distance specified by commission.

(b) The city shall evaluate all land in the study area for inclusion in the urban growth boundary as provided in subsection (4) of this section, except for land excluded from the study area because:

(A) It is impracticable, as provided in subsection (3) of this section, to provide necessary public facilities or services to the land.

(B) The land is subject to significant development hazards, including a risk of land slides, a risk of flooding because the land is within the 100-year floodplain or is subject to inundation during storm surges or tsunamis, and other risks determined by the commission.

(C) The long-term preservation of significant scenic, natural, cultural or recreational resources requires limiting or prohibiting urban development of the land that contains the resources.

(D) The land is owned by the federal government and managed primarily for rural uses.

(c) When evaluating the priority of land for inclusion under paragraph (b) of this subsection:

(A) The city shall evaluate the land within the study area that is designated as an urban reserve under ORS 195.145 in an acknowledged comprehensive plan, land that is subject to an acknowledged exception under ORS 197.732 or land that is nonresource land and select as much of the land as necessary to satisfy the need for land using criteria established by the commission and criteria in an acknowledged comprehensive plan and land use regulations.

(B) If the amount of land appropriate for selection under subparagraph (A) of this paragraph is not sufficient to satisfy the need for land, the city shall evaluate the land within the study area that is designated as marginal land under ORS 197.247 (1991 Edition) in the acknowledged comprehensive plan and select as much of the land as necessary to satisfy the need for land using criteria established by the commission and criteria in an acknowledged comprehensive plan and land use regulations.

(C) If the amount of land appropriate for selection under subparagraphs (A) and (B) of this paragraph is not sufficient to satisfy the amount of land needed, the city shall evaluate

land within the study area that is designated for agriculture or forest uses in the acknowledged comprehensive plan that is not predominantly high-value farmland, as defined in ORS 195.300, or does not consist predominantly of prime or unique soils, as determined by the United States Department of Agriculture Natural Resources Conservation Service, and select as much of that land as necessary to satisfy the need for land:

(i) Using criteria established by the commission and criteria in an acknowledged comprehensive plan and land use regulations; and

(ii) Using the predominant capability classification system or the predominant cubic site class, as appropriate for the acknowledged comprehensive plan designation, to select lower capability or cubic site class lands first.

(D) If the amount of land appropriate for selection under subparagraphs (A) to (C) of this paragraph is not sufficient to satisfy the need for land, the city shall evaluate land within the study area that is designated as agricultural land in an acknowledged comprehensive plan and is predominantly high value farmland and select as much of that land as necessary to satisfy the need for land. A local government may not select land that is predominantly made up of prime or unique farm soils, as defined by the United States Department of Agriculture Natural Resources Conservation Service, unless there is an insufficient amount of other land to satisfy its land need.

(3) For purposes of subsection (2)(b)(A) of this section, the commission shall determine impracticability by rule, considering the likely amount of development that could occur on the lands within the planning period, the likely cost of facilities and services, physical, topographical or other impediments to service provision and whether urban development has occurred on similarly situated lands such that it is likely that the lands will be developed at an urban level during the planning period. When impracticability is primarily a result of existing development patterns, the rules of the commission shall require that the lands be included within the study area, but may allow the development capacity forecast for the lands to be specified at a lower level over the planning period. The rules of the commission must be based on an evaluation of how similarly situated lands have, or have not, developed over time.

(4) For purposes of subsection (2)(b)(C) of this section, the commission by rule shall determine the circumstances in which and the resources to which this exclusion will apply.

(5) Notwithstanding subsection (2)(c)(D) of this section, the rules must allow land that would otherwise be excluded from an urban growth boundary to be included if:

(a) The land contains a small amount of resource land that is not important to the commercial agricultural enterprise in the area and the land must be included to connect a nearby and significantly larger area of land of higher priority for inclusion within the urban growth boundary; or

(b) The land contains a small amount of resource land that is not predominantly high-value farmland or predominantly made up of prime or unique farm soils and the land is completely surrounded by land of higher priority for inclusion into the urban growth boundary.

(6) When the primary purpose for expansion of the urban growth boundary is to accommodate a particular industry use that requires specific site characteristics, or to accommodate a public facility that requires specific site characteristics and the site characteristics may be found in only a small number of locations, the city may limit the study area to land that has, or could be improved to provide, the required site characteristics. Lands included within an urban growth boundary for a particular industrial use, or a particular public facility, must remain planned and zoned for the intended use:

(a) Except as allowed by rule of the commission that is based on a significant change in circumstance or the passage of time; or

(b) Unless the city removes the land from within the urban growth boundary.

(7) Notwithstanding any other provision of this section, the commission may adopt rules that specify circumstances under which a city may exchange land within the urban growth boundary of the city for land that is outside of the urban growth boundary and that is designed to avoid adverse effects of an exchange on agricultural or forest operations in the surrounding area. [2013 c.575 §7]

Note: 197A.320 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

197A.325 Review of final decision of city; rules. (1) Notwithstanding ORS 197.626, when a city evaluates or amends the urban growth boundary of the city pursuant to ORS 197A.310 or 197A.312, the Land Use Board of Appeals has jurisdiction for review of a final decision of the city.

(2) The board shall review the final decision of the city under ORS 197A.300 to 197A.325 as provided in ORS 197.805 to 197.855, except that:

(a) In circumstances in which the Land Conservation and Development Commission has specified by rule a number or a range of numbers that the city may use:

(A) The city is not required to adopt findings to support the use of the number or a number within the range of numbers; and

(B) The board's review of the number may determine only that the city has used a number that is allowed by the rule.

(b) The board shall affirm an interpretation by a local government of its comprehensive plan or land use regulations unless that interpretation is clearly erroneous.

(3) Notwithstanding ORS 197.628 and 197.629, when a city evaluates or amends the urban growth boundary of the city pursuant to ORS 197A.310 or 197A.312, the city is not required to commence or complete periodic review. The commission shall, by rule, specify alternate means to ensure that the comprehensive plan and land use regulations of the city comply with the statewide land use planning goals and are updated over time to reflect changing conditions and needs. [2013 c.575 §8]

Note: 197A.325 becomes operative January 1, 2016. See section 13, chapter 575, Oregon Laws 2013, as amended by section 14, chapter 575, Oregon Laws 2013.

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APPENDIX B: LIST OF CITIES BY TIER

Table B-1: List of Cities by Tier

Tier 1 excludes counties where cities are small & not growing; Tier 2 excludes counties where cities are small & not growing and counties omitted from ORMAP; Tier 3 excludes counties where cities are small & not growing & counties for which we lack quality or accessible data; cities lacking single family residential parcels are also excluded. Note: 1=Yes

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Baker City		Baker County	Northeast Oregon	3	0	1	1	1
Greenhorn		Baker County	Northeast Oregon	1	1	0	0	0
Haines		Baker County	Northeast Oregon	1	1	0	0	0
Halfway		Baker County	Northeast Oregon	1	1	0	0	0
Huntington		Baker County	Northeast Oregon	1	1	0	0	0
Richland		Baker County	Northeast Oregon	1	1	0	0	0
Sumpter		Baker County	Northeast Oregon	1	0	1	1	1
Unity		Baker County	Northeast Oregon	1	1	0	0	0
Adair Village		Benton County	Willamette Valley	1	0	1	1	1
Corvallis		Benton County	Willamette Valley	6	0	1	1	1
Monroe		Benton County	Willamette Valley	1	0	1	1	1
Philomath		Benton County	Willamette Valley	2	0	1	1	1
Albany	1	Benton & Linn County	Willamette Valley	6	0	1	1	1
Barlow		Clackamas County	Willamette Valley	1	1	0	0	0
Canby		Clackamas County	Willamette Valley	4	0	1	1	1
Estacada		Clackamas County	Willamette Valley	2	0	1	1	1
Molalla		Clackamas County	Willamette Valley	3	0	1	1	1
Sandy		Clackamas County	Willamette Valley	3	0	1	1	1

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Astoria		Clatsop County	North Coastal Oregon	3	0	1	1	1
Cannon Beach		Clatsop County	North Coastal Oregon	2	0	1	1	1
Gearhart		Clatsop County	North Coastal Oregon	2	0	1	1	1
Seaside		Clatsop County	North Coastal Oregon	3	0	1	1	1
Warrenton		Clatsop County	North Coastal Oregon	3	0	1	1	1
Clatskanie		Columbia County	Willamette Valley	2	1	0	0	0
Columbia City		Columbia County	Willamette Valley	2	0	1	1	1
Prescott		Columbia County	Willamette Valley	1	1	0	0	0
Rainier		Columbia County	Willamette Valley	2	1	0	0	0
Scappoose		Columbia County	Willamette Valley	3	0	1	1	1
St Helens		Columbia County	Willamette Valley	4	0	1	1	1
Vernonia		Columbia County	Willamette Valley	2	1	0	0	0
Bandon		Coos County	South Coastal Oregon	2	0	1	1	1
Coos Bay		Coos County	South Coastal Oregon	4	0	1	1	1
Coquille		Coos County	South Coastal Oregon	2	1	0	0	0
Lakeside		Coos County	South Coastal Oregon	2	1	0	0	0
Myrtle Point		Coos County	South Coastal Oregon	2	1	0	0	0
North Bend		Coos County	South Coastal Oregon	3	0	1	1	1
Powers		Coos County	South Coastal Oregon	1	1	0	0	0
Prineville		Crook County	Central Oregon	3	0	1	1	1
Brookings		Curry County	South Coastal Oregon	3	0	1	1	1
Gold Beach		Curry County	South Coastal Oregon	2	0	1	1	1

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Port Orford		Curry County	South Coastal Oregon	2	1	0	0	0
Bend		Deschutes County	Central Oregon	6	0	1	1	1
Redmond		Deschutes County	Central Oregon	5	0	1	1	1
Sisters		Deschutes County	Central Oregon	2	0	1	1	1
Canyonville		Douglas County	Southern Oregon	2	0	1	1	1
Drain		Douglas County	Southern Oregon	2	1	0	0	0
Elkton		Douglas County	Southern Oregon	1	0	1	1	1
Glendale		Douglas County	Southern Oregon	1	0	1	1	1
Myrtle Creek		Douglas County	Southern Oregon	2	1	0	0	0
Oakland		Douglas County	Southern Oregon	1	1	0	0	0
Reedsport		Douglas County	South Coastal Oregon	2	1	0	0	0
Riddle		Douglas County	Southern Oregon	2	1	0	0	0
Roseburg		Douglas County	Southern Oregon	4	0	1	1	1
Sutherlin		Douglas County	Southern Oregon	3	0	1	1	1
Winston		Douglas County	Southern Oregon	3	0	1	1	1
Yoncalla		Douglas County	Southern Oregon	2	0	1	1	1
Arlington		Gilliam County	Northeast Oregon	1	0	0	0	0
Condon		Gilliam County	Northeast Oregon	1	1	0	0	0
Lone Rock		Gilliam County	Northeast Oregon	1	0	0	0	0
Canyon City		Grant County	Northeast Oregon	1	1	0	0	0
Dayville		Grant County	Northeast Oregon	1	1	0	0	0
Granite		Grant County	Northeast Oregon	1	0	0	0	0

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
John Day		Grant County	Northeast Oregon	2	1	0	0	0
Long Creek		Grant County	Northeast Oregon	1	1	0	0	0
Monument		Grant County	Northeast Oregon	1	1	0	0	0
Mt Vernon		Grant County	Northeast Oregon	1	1	0	0	0
Prairie City		Grant County	Northeast Oregon	1	1	0	0	0
Seneca		Grant County	Northeast Oregon	1	1	0	0	0
Burns		Harney County	Southeast Oregon	2	1	0	0	0
Hines		Harney County	Southeast Oregon	2	1	0	0	0
Cascade Locks		Hood River County	Central Oregon	2	1	0	0	0
Hood River		Hood River County	Central Oregon	3	0	1	1	1
Ashland		Jackson County	Southern Oregon	4	0	1	1	1
Butte Falls		Jackson County	Southern Oregon	1	1	0	0	0
Central Point		Jackson County	Southern Oregon	4	0	1	1	1
Eagle Point		Jackson County	Southern Oregon	3	0	1	1	1
Gold Hill		Jackson County	Southern Oregon	2	1	0	0	0
Jacksonville		Jackson County	Southern Oregon	2	0	1	1	1
Medford		Jackson County	Southern Oregon	6	0	1	1	1
Phoenix		Jackson County	Southern Oregon	2	0	1	1	1
Rogue River		Jackson County	Southern Oregon	2	1	0	0	0
Shady Cove		Jackson County	Southern Oregon	2	0	1	1	1
Talent		Jackson County	Southern Oregon	3	0	1	1	1
Culver		Jefferson County	Central Oregon	2	0	1	1	0

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Madras		Jefferson County	Central Oregon	3	0	1	1	0
Metolius		Jefferson County	Central Oregon	1	0	1	1	0
Cave Junction		Josephine County	Southern Oregon	2	0	1	1	1
Grants Pass		Josephine County	Southern Oregon	5	0	1	1	1
Bonanza		Klamath County	Southeast Oregon	1	0	1	1	1
Chiloquin		Klamath County	Southeast Oregon	1	1	0	0	0
Klamath Falls		Klamath County	Southeast Oregon	4	0	1	1	1
Malin		Klamath County	Southeast Oregon	1	1	0	0	0
Merrill		Klamath County	Southeast Oregon	1	1	0	0	0
Lakeview		Lake County	Southeast Oregon	2	1	0	0	0
Paisley		Lake County	Southeast Oregon	1	1	0	0	0
Coburg		Lane County	Willamette Valley	2	0	1	1	1
Cottage Grove		Lane County	Willamette Valley	3	0	1	1	1
Creswell		Lane County	Willamette Valley	2	0	1	1	1
Dunes City		Lane County	South Coastal Oregon	2	1	0	0	0
Eugene		Lane County	Willamette Valley	6	0	1	1	1
Florence		Lane County	South Coastal Oregon	3	0	1	1	1
Junction City		Lane County	Willamette Valley	3	0	1	1	1
Lowell		Lane County	Willamette Valley	2	0	1	1	1
Oakridge		Lane County	Willamette Valley	2	1	0	0	0
Springfield		Lane County	Willamette Valley	6	0	1	1	1
Veneta		Lane County	Willamette Valley	2	0	1	1	1

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Westfir		Lane County	Willamette Valley	1	1	0	0	0
Depoe Bay		Lincoln County	North Coastal Oregon	2	0	1	1	1
Lincoln City		Lincoln County	North Coastal Oregon	3	0	1	1	1
Newport		Lincoln County	North Coastal Oregon	4	0	1	1	1
Siletz		Lincoln County	North Coastal Oregon	2	1	0	0	0
Toledo		Lincoln County	North Coastal Oregon	2	1	0	0	0
Waldport		Lincoln County	North Coastal Oregon	2	0	1	1	1
Yachats		Lincoln County	North Coastal Oregon	1	0	1	1	1
Gates	1	Linn & Marion County	Willamette Valley	1	1	0	0	0
Brownsville		Linn County	Willamette Valley	2	0	1	1	1
Halsey		Linn County	Willamette Valley	1	0	1	1	1
Harrisburg		Linn County	Willamette Valley	2	0	1	1	1
Lebanon		Linn County	Willamette Valley	4	0	1	1	1
Lyons		Linn County	Willamette Valley	2	0	1	1	1
Millersburg		Linn County	Willamette Valley	2	0	1	1	1
Scio		Linn County	Willamette Valley	1	0	1	1	1
Sodaville		Linn County	Willamette Valley	1	0	1	1	1
Sweet Home		Linn County	Willamette Valley	3	0	1	1	1
Tangent		Linn County	Willamette Valley	2	0	1	1	1
Waterloo		Linn County	Willamette Valley	1	0	1	1	1
Idanha	1	Linn& Marion County	Willamette Valley	1	1	0	0	0

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Mill City	1	Linn& Marion County	Willamette Valley	2	1	0	0	0
Adrian		Malheur County	Southeast Oregon	1	0	1	1	1
Jordan Valley		Malheur County	Southeast Oregon	1	1	0	0	0
Nyssa		Malheur County	Southeast Oregon	2	0	1	1	1
Ontario		Malheur County	Southeast Oregon	4	0	1	1	1
Vale		Malheur County	Southeast Oregon	2	0	1	1	1
Aumsville		Marion County	Willamette Valley	2	0	1	1	1
Aurora		Marion County	Willamette Valley	1	0	1	1	1
Detroit		Marion County	Willamette Valley	1	1	0	0	0
Donald		Marion County	Willamette Valley	1	0	1	1	1
Gervais		Marion County	Willamette Valley	1	0	1	1	1
Hubbard		Marion County	Willamette Valley	2	0	1	1	1
Jefferson		Marion County	Willamette Valley	2	0	1	1	1
Keizer		Marion County	Willamette Valley	5	0	1	1	1
Mt Angel		Marion County	Willamette Valley	2	1	0	0	0
Scotts Mills		Marion County	Willamette Valley	1	0	1	1	1
Silverton		Marion County	Willamette Valley	3	0	1	1	1
St Paul		Marion County	Willamette Valley	1	0	1	1	1
Stayton		Marion County	Willamette Valley	3	0	1	1	1
Sublimity		Marion County	Willamette Valley	2	0	1	1	1
Turner		Marion County	Willamette Valley	2	0	1	1	1
Woodburn		Marion County	Willamette Valley	4	0	1	1	1

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Salem	1	Marion& Polk County	Willamette Valley	6	0	1	1	1
Boardman		Morrow County	Northeast Oregon	2	0	1	0	0
Heppner		Morrow County	Northeast Oregon	2	1	0	0	0
Ione		Morrow County	Northeast Oregon	1	0	1	0	0
Irrigon		Morrow County	Northeast Oregon	2	0	1	0	0
Lexington		Morrow County	Northeast Oregon	1	1	0	0	0
Willamina	1	Polk &Yamhill County	Willamette Valley	1	1	0	0	0
Dallas		Polk County	Willamette Valley	4	0	1	1	1
Falls City		Polk County	Willamette Valley	1	1	0	0	0
Independence		Polk County	Willamette Valley	3	0	1	1	1
Monmouth		Polk County	Willamette Valley	3	0	1	1	1
Grass Valley		Sherman County	Northeast Oregon	1	1	0	0	0
Moro		Sherman County	Northeast Oregon	1	1	0	0	0
Rufus		Sherman County	Northeast Oregon	1	1	0	0	0
Wasco		Sherman County	Northeast Oregon	1	1	0	0	0
Bay City		Tillamook County	North Coastal Oregon	2	0	1	1	1
Garibaldi		Tillamook County	North Coastal Oregon	1	1	0	0	0
Manzanita		Tillamook County	North Coastal Oregon	1	1	0	0	0
Nehalem		Tillamook County	North Coastal Oregon	1	1	0	0	0
Rockaway Beach		Tillamook County	North Coastal Oregon	2	0	1	1	0
Tillamook		Tillamook County	North Coastal Oregon	2	1	1	1	1
Wheeler		Tillamook County	North Coastal Oregon	1	0	1	1	0

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Adams		Umatilla County	Northeast Oregon	1	0	1	1	1
Athena		Umatilla County	Northeast Oregon	2	1	0	0	0
Echo		Umatilla County	Northeast Oregon	1	0	1	1	1
Helix		Umatilla County	Northeast Oregon	1	0	1	1	1
Hermiston		Umatilla County	Northeast Oregon	4	0	1	1	1
Milton-Freewater		Umatilla County	Northeast Oregon	3	0	1	1	1
Pendleton		Umatilla County	Northeast Oregon	4	0	1	1	1
Pilot Rock		Umatilla County	Northeast Oregon	2	1	0	0	0
Stanfield		Umatilla County	Northeast Oregon	2	0	1	1	1
Ukiah		Umatilla County	Northeast Oregon	1	1	0	0	0
Umatilla		Umatilla County	Northeast Oregon	3	0	1	1	1
Weston		Umatilla County	Northeast Oregon	1	1	0	0	0
Cove		Union County	Northeast Oregon	1	1	0	0	0
Elgin		Union County	Northeast Oregon	2	1	0	0	0
Imbler		Union County	Northeast Oregon	1	1	0	0	0
Island City		Union County	Northeast Oregon	2	0	1	1	1
La Grande		Union County	Northeast Oregon	4	0	1	1	1
North Powder		Union County	Northeast Oregon	1	1	0	0	0
Summerville		Union County	Northeast Oregon	1	1	0	0	0
Union		Union County	Northeast Oregon	2	1	0	0	0
Enterprise		Wallowa County	Northeast Oregon	2	1	0	0	0
Joseph		Wallowa County	Northeast Oregon	2	1	0	0	0

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Lostine		Wallowa County	Northeast Oregon	1	1	0	0	0
Wallowa		Wallowa County	Northeast Oregon	1	1	0	0	0
Antelope		Wasco County	Central Oregon	1	0	1	1	1
Dufur		Wasco County	Central Oregon	1	1	0	0	0
Maupin		Wasco County	Central Oregon	1	1	0	0	0
Mosier		Wasco County	Central Oregon	1	0	1	1	1
Shaniko		Wasco County	Central Oregon	1	0	1	1	1
The Dalles		Wasco County	Central Oregon	4	0	1	1	1
Banks		Washington County	Willamette Valley	2	0	1	1	1
Gaston		Washington County	Willamette Valley	1	1	0	0	0
North Plains		Washington County	Willamette Valley	2	0	1	1	1
Fossil		Wheeler County	Northeast Oregon	1	1	0	0	0
Mitchell		Wheeler County	Northeast Oregon	1	1	0	0	0
Spray		Wheeler County	Northeast Oregon	1	1	0	0	0
Amity		Yamhill County	Willamette Valley	2	0	1	1	1
Carlton		Yamhill County	Willamette Valley	2	0	1	1	1
Dayton		Yamhill County	Willamette Valley	2	0	1	1	1
Dundee		Yamhill County	Willamette Valley	2	0	1	1	1
Lafayette		Yamhill County	Willamette Valley	2	0	1	1	1
McMinnville		Yamhill County	Willamette Valley	5	0	1	1	1
Newberg		Yamhill County	Willamette Valley	4	0	1	1	1
Sheridan		Yamhill County	Willamette Valley	3	0	1	1	1

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Yamhill		Yamhill County	Willamette Valley	2	0	1	1	1
Totals (out of 216 cities)					84	130	127	122

APPENDIX C: EFFECT OF CONSTRAINTS ON RESIDENTIAL DENSITY

A question posed by the Rulemaking Advisory Committee was whether physical constraints have measureable effects on housing density. This appendix presents analysis of constraints for 120 cities where data were available to analyze constraints. For this analysis, the research team coded lands with single-family and plex dwellings into three categories:

1. Unconstrained – no constraints are present
2. Partially constrained – between 0.0001% and 99.9999% of the taxlot has a constraint
3. Fully constrained – the taxlot is 100% within a constrained area

To conduct the analysis the research team lumped all constraints together. It includes land in water or floodways (prohibitive constraints) and land in 100-year floodplains, slopes over 25%, or wetlands as documented in the National Wetlands Inventory.

Table C-1 shows average single-family and plex densities by city size for 120 study cities by constraint status. The results show a lot of variation by city size and constraint status (see percent of unconstrained density columns). Partially constrained densities are all less than unconstrained densities and show less variation than fully constrained taxlots. Densities in partially constrained taxlots averaged 82% of unconstrained densities.

Table C-1. Average improved single-family and plex density for taxlots <0.5 acres by city size and constraint status, Tier 3 cities, 2012

		Improved Single Family & Plex Single Family Parcels/Acres				Percent of Unconstrained Density		
City Size	Number of Cities	Fully Constrained	Partially Constrained	Unconstrained	All Parcels	Fully Constrained	Partially Constrained	All Parcels
<1,000	20	4.15	3.92	4.79	4.58	87%	82%	96%
1,000-4,999	45	6.30	4.21	5.22	5.10	121%	81%	98%
5,000-9,999	27	6.58	4.84	5.52	5.44	119%	88%	99%
10,000-24,999	17	4.73	4.32	5.64	5.45	84%	77%	97%
25,000-49,999	4	5.65	4.22	5.17	5.08	109%	82%	98%
50,000 or more	7	6.19	4.34	5.37	5.26	115%	81%	98%
Total	**120**	**5.98**	**4.41**	**5.41**	**5.29**	**111%**	**82%**	**98%**

Analysis by constraint status shows that the average density of improved taxlots per acre for fully constrained land is higher than that of unconstrained land (with the exception of cities in the Northeast and Southern Oregon). Partially constrained taxlots generally had lower taxlot per acre densities than unconstrained taxlots.

Tables C-2 shows average single-family and plex densities by city size for 120 study cities by region and constraint status. Similar to the analysis by city size, the

densities show a lot of variation by region and constraint status (see percent of unconstrained density columns). Partially constrained densities are all less than unconstrained densities and show less variation than fully constrained taxlots. Densities in partially constrained taxlots averaged 82% of unconstrained densities, while aggregate density averages 98% of unconstrained densities, meaning that constraints do not significantly impact average densities.

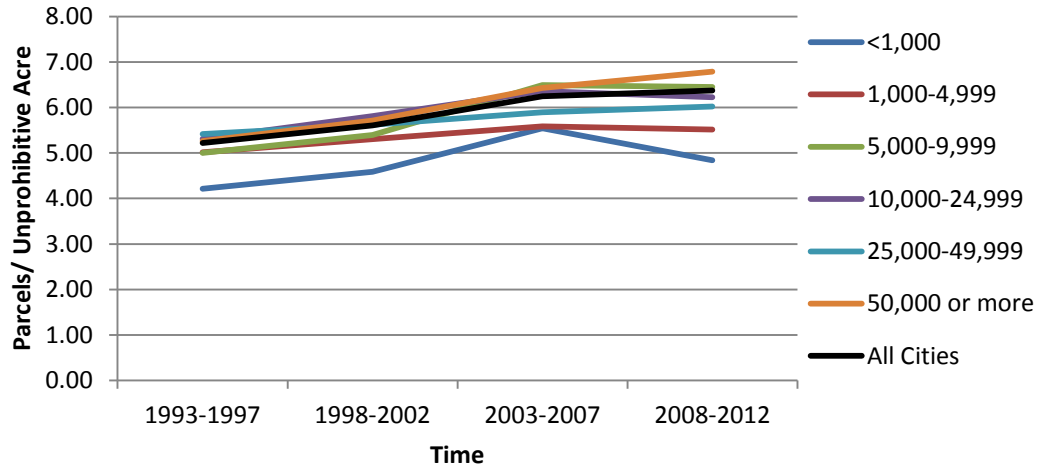
Table C-2. Lots, acres, and parcels/acre by constraint status for improved single-family and plex taxlots for taxlots <0.5 acres, by region constraint case study cities, 2012

		Improved Single Family & Plex Single Family Parcels/Acres				Percent of Unconstrained Density		
City Size	Number of Cities	Fully Constrained	Partially Constrained	Unconstrained	All Parcels	Fully Constrained	Partially Constrained	All Parcels
Central Oregon	9	6.59	4.08	5.19	5.08	127%	79%	98%
North Coastal Oregon	12	8.52	5.19	7.33	6.52	116%	71%	89%
Northeast Oregon	12	4.31	4.38	5.29	5.17	81%	83%	98%
South Coastal Oregon	6	6.00	4.08	5.45	5.21	110%	75%	96%
Southeast Oregon	6	6.26	4.56	5.34	5.27	117%	85%	99%
Southern Oregon	17	4.98	3.92	5.19	5.02	96%	76%	97%
Willamette Valley	58	5.89	4.42	5.42	5.32	109%	81%	98%
All Cities	**120**	**5.98**	**4.41**	**5.41**	**5.29**	**111%**	**82%**	**98%**

Appendix D: Additional Data on City Characteristics

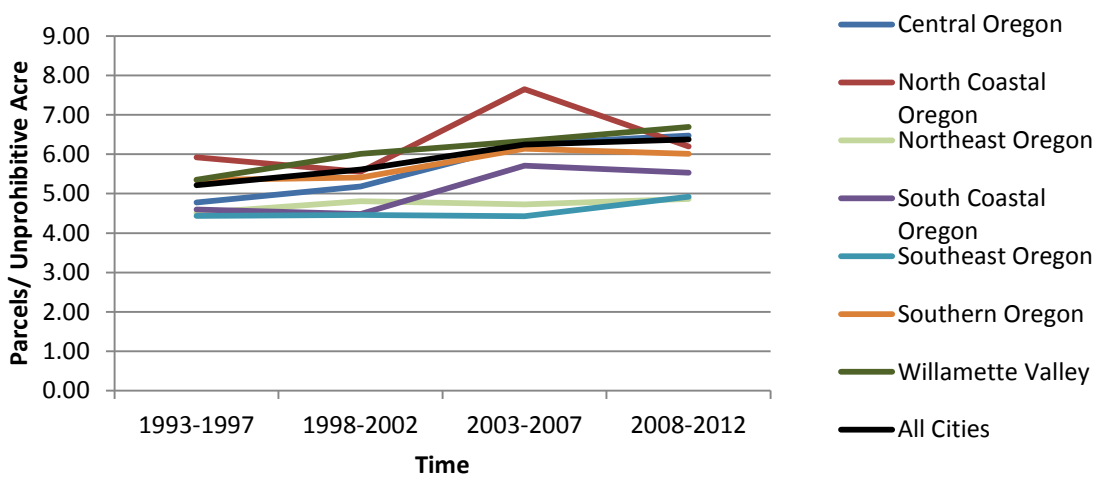
Part 1: Residential

Figure D-1. Improved Single Family and Plex Density by City Size, Tier 3 Cities, 1993-2012



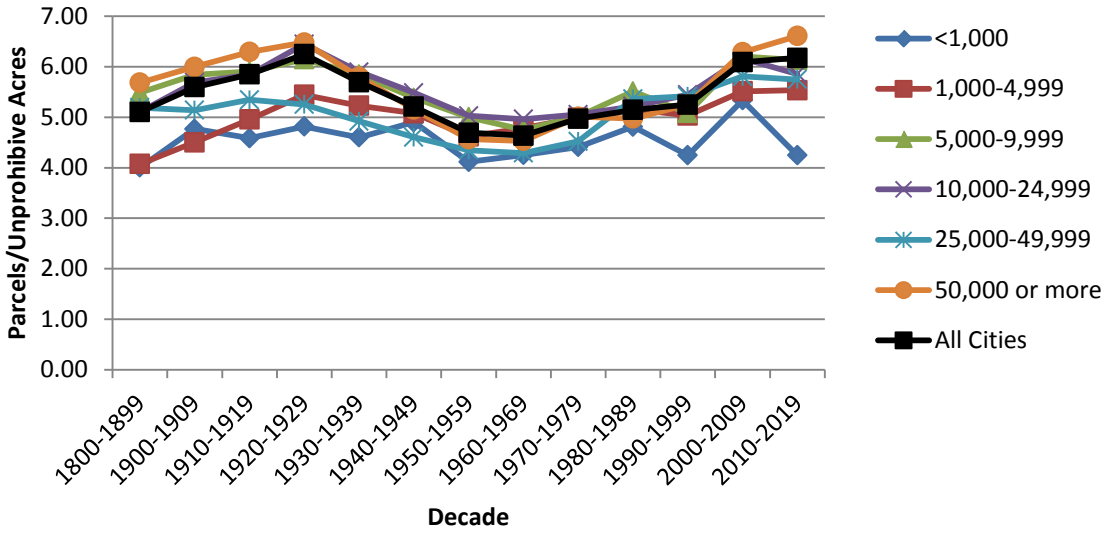
Description: Count of Parcels (Residential Class 100)/Unprohibitive Acres. Data is filterd on Yr Built, Improved and General Land Classification. The Yr Built Filter excludes Null and 0. Improved: property classification code improved AND assessed improved value >$10,000. The Generalized Land Classification filter keeps Residential, which includes structures with <5 units. Parcels >0.5 acres are excluded.

Figure D-2. Improved Single Family and Plex Average Density by Region, Tier 3 Cities, 1993-2012



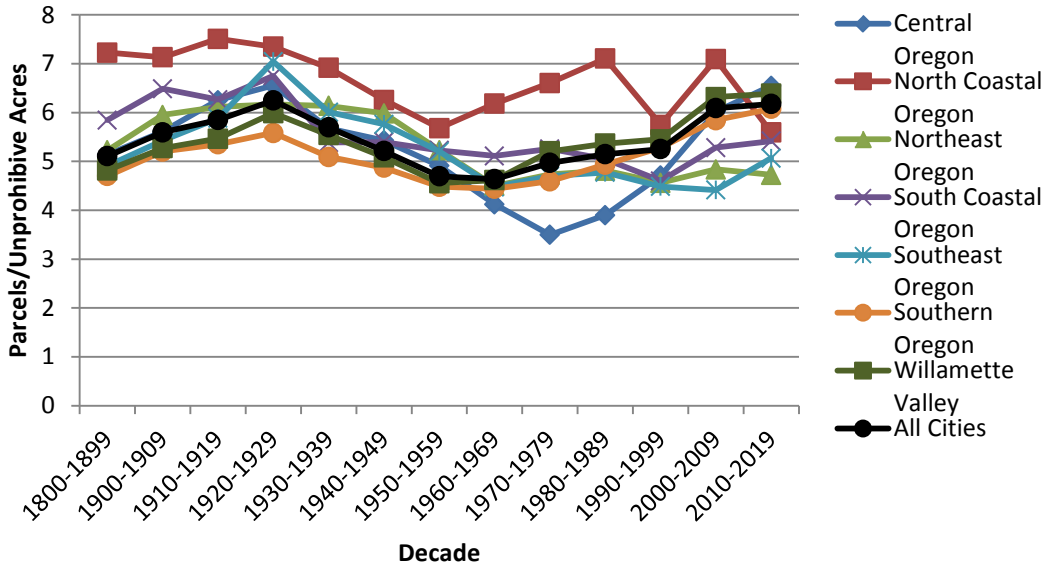
Description: Count of Parcels (Residential Class 100)/Unprohibitive Acres. Data is filterd on Yr Built, Improved and General Land Classification. The Yr Built Filter excludes Null and 0. Improved: property classification code improved AND assessed improved value >$10,000. The Generalized Land Classification filter keeps Residential, which includes structures with <5 units. Parcels >0.5 acres are excluded.

Figure D-3. Improved Single Family and Plex Average Density by City Size by Decade, Tier 3 Cities, 1800-2012



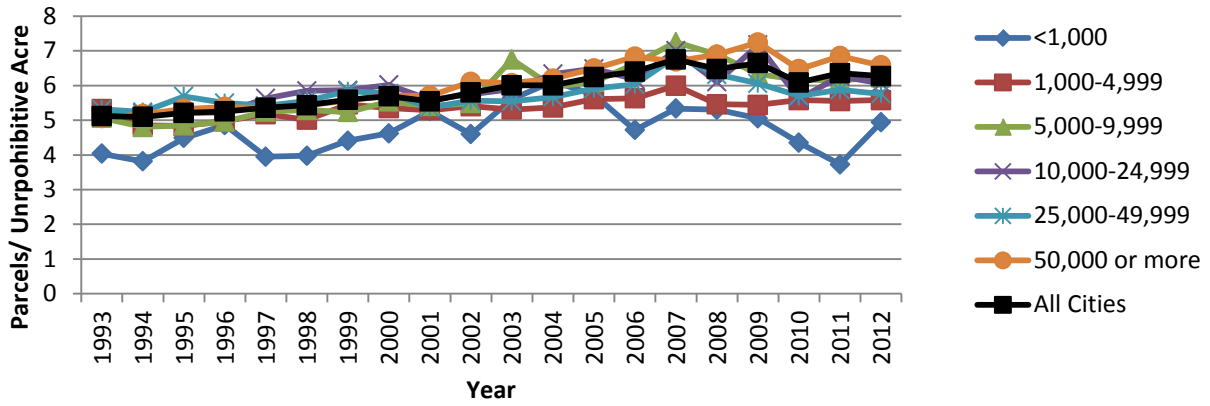
Description: Count of Parcels (Residential Class 100)/Unprohibitive Acres. Data is filtered on Yr Built, Improved and General Land Classification. The Yr Built Filter excludes Null and 0. Improved: property classification code improved AND assessed improved value >$10,000. The Generalized Land Classification filter keeps Residential, which includes structures with <5 units. Parcels >0.5 acres are excluded.

Figure D-4. Improved Single Family and Plex Average Density by Region by Decade, Tier 3 Cities, 1800-2012



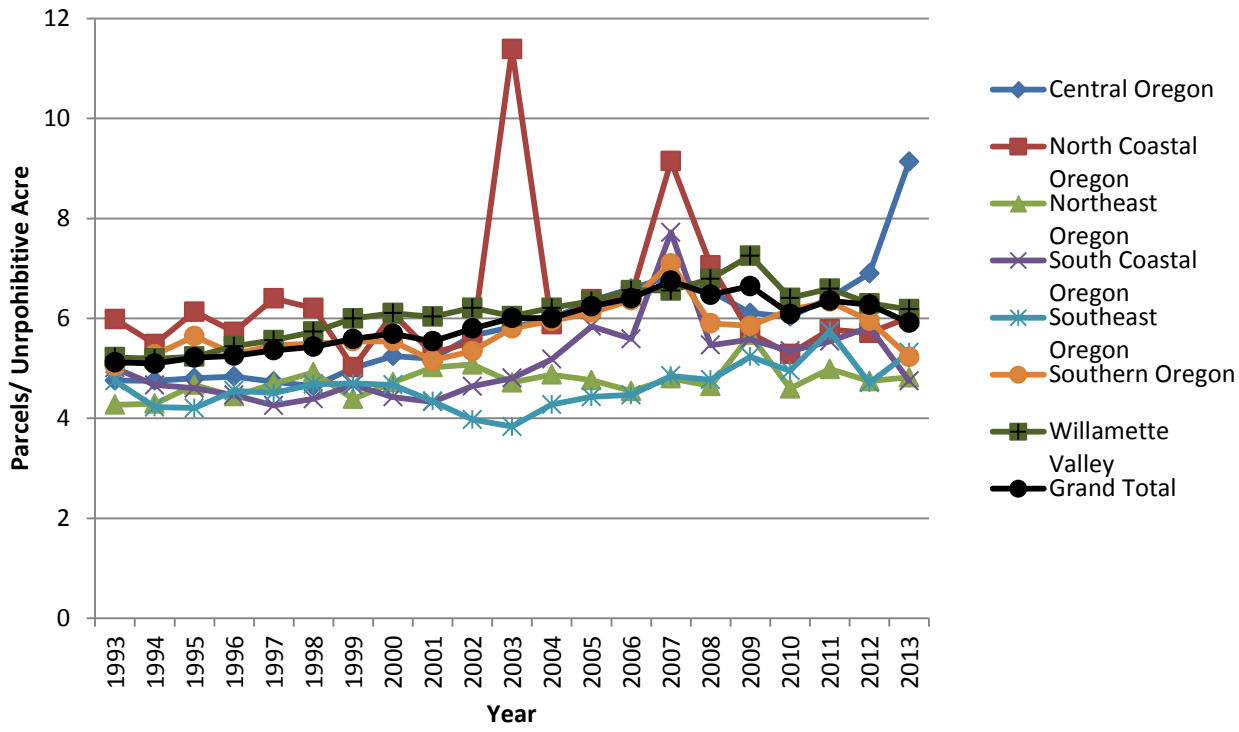
Description: Count of Parcels (Residential Class 100)/Unprohibitive Acres. Data is filtered on Yr Built, Improved and General Land Classification. The Yr Built Filter excludes Null and 0. Improved: property classification code improved AND assessed improved value >$10,000. The Generalized Land Classification filter keeps Residential, which includes structures with <5 units. Parcels >0.5 acres are excluded.

Figure D-5. Improved Single Family and Plex Average Density by City Size by Year, Tier 3 Cities, 1993-2012



Description: Count of Parcels (Residential Class 100)/Unprohibitive Acres. Data is filterd on Yr Built, Improved and General Land Classification. The Yr Built Filter excludes Null and 0. Improved: property classification code improved AND assessed improved value >$10,000. The Generalized Land Classification filter keeps Residential, which includes structures with <5 units. Parcels >0.5 acres are excluded.

Figure D-6. Improved Single Family and Plex Average Density by Region by Year, Tier 3 Cities, 1993-2012



Description: Count of Parcels (Residential Class 100)/Unprohibitive Acres. Data is filterd on Yr Built, Improved and General Land Classification. The Yr Built Filter excludes Null and 0. Improved: property classification code improved AND assessed improved value >$10,000. The Generalized Land Classification filter keeps Residential, which includes structures with <5 units. Parcels >0.5 acres areexcluded.

Part 2: Employment

Table D-1. Covered employment for all cities outside the Metro UGB by region, 2005 and 2012

		2005		2012		Change, 2005-12		
Region	Number of Cities	Employment	Percent of Emp	Employment	Percent of Emp	Number	Percent	AAGR
Central Oregon	15	72,721	11%	75,204	12%	2,483	3%	0.5%
North Coastal Oregon	19	31,476	5%	34,064	5%	2,588	8%	1.1%
Northeast Oregon	56	36,434	6%	39,336	6%	2,902	8%	1.1%
South Coastal Oregon	13	27,733	4%	25,170	4%	(2,563)	-9%	-1.4%
Southeast Oregon	14	26,221	4%	25,555	4%	(666)	-3%	-0.4%
Southern Oregon	24	103,239	16%	97,664	15%	(5,575)	-5%	-0.8%
Willamette Valley	75	346,766	54%	354,498	54%	7,732	2%	0.3%
Total	**216**	**644,590**	**100%**	**651,491**	**100%**	**6,901**	**1%**	**0.2%**

Table D-2. Population and employment by city size, all cities outside the Metro UGB 2005 and 2012

		2005			2012		
City Size	Number of Cities	Population	Employment	Pop/Emp Ratio	Population	Employment	Pop/Emp Ratio
<1,000	81	38,650	6,952	5.6	38,317	9,178	4.2
1,000-4,999	79	166,360	52,379	3.2	177,075	53,269	3.3
5,000-9,999	28	201,795	76,949	2.6	218,885	78,566	2.8
10,000-24,999	17	268,645	125,433	2.1	285,375	128,840	2.2
25,000-49,999	4	110,850	44,187	2.5	130,255	46,297	2.8
50,000 or more	7	588,975	338,690	1.7	633,395	335,341	1.9
All Classes	**216**	**1,375,275**	**644,590**	**2.1**	**1,483,302**	**651,491**	**2.3**

Table D-3. Population and employment by region, all cities outside the Metro UGB 2005 and 2012

		2005			2012		
Region	Number of Cities	Population	Employment	Pop/Emp Ratio	Population	Employment	Pop/Emp Ratio
Central Oregon	15	130,175	72,721	1.8	148,015	75,204	2.0
North Coastal Oregon	19	58,435	31,476	1.9	60,910	34,064	1.8
Northeast Oregon	56	101,876	36,434	2.8	104,362	39,336	2.7
South Coastal Oregon	13	60,515	27,733	2.2	61,355	25,170	2.4
Southeast Oregon	14	47,747	26,221	1.8	48,195	25,555	1.9
Southern Oregon	24	205,982	103,239	2.0	224,510	97,664	2.3
Willamette Valley	75	770,545	346,766	2.2	835,955	354,498	2.4
Total	**216**	**1,375,275**	**644,590**	**2.1**	**1,483,302**	**651,491**	**2.3**

Table D-4. Employment statistics by city size, all cities outside the Metro UGB, 2012

City Size	Number of Cities	Total Employment	Average by City	Maximum	Minimum	St. Dev.
<1,000	81	9,178	113	476	-	103
1,000-4,999	79	53,269	674	3,713	32	573
5,000-9,999	28	78,566	2,806	6,214	676	1,468
10,000-24,999	17	128,840	7,579	16,586	3,262	3,254
25,000-49,999	4	46,297	11,574	17,068	5,614	4,896
50,000 or more	7	335,341	47,906	96,570	20,577	29,467
All Classes	**216**	**651,491**	**3,016**	**96,570**	**-**	**9,978**

Table D-5. Employment statistics by region, all cities outside the Metro UGB, 2012

Region	Number of Cities	Total Employment	Average by City	Maximum	Minimum	St. Dev.
Central Oregon	15	75,204	5,014	40,115	10,265	75,204
North Coastal Oregon	19	34,064	1,793	7,390	2,219	34,064
Northeast Oregon	56	39,336	702	8,093	1,638	39,336
South Coastal Oregon	13	25,170	1,936	8,833	2,492	25,170
Southeast Oregon	14	25,555	1,825	12,360	3,621	25,555
Southern Oregon	24	97,664	4,069	41,697	9,341	97,664
Willamette Valley	75	354,498	4,727	96,570	15,055	354,498
Total	**216**	**651,491**	**3,016**	**96,570**	**9,978**	**651,491**

Part 3: Relationship Between City Size and Density

Figure D-8. Scatterplot of population and percent single-family detached housing, Tier 3 cities

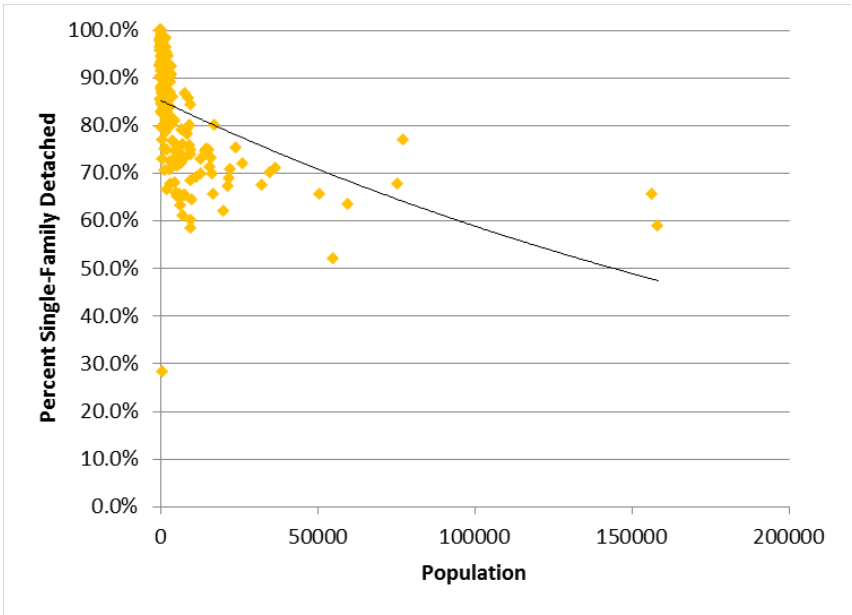


Figure D-9. Scatterplot: Population v. Average SF and Plex Density 2003-2007, Tier 3 cities

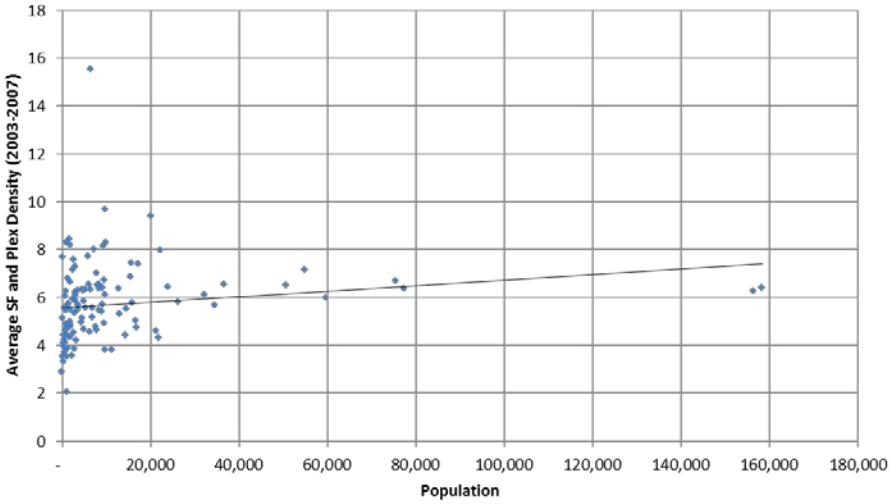


Figure D-10. Commercial density (EPA) by population, Tier 2 cities, 2012

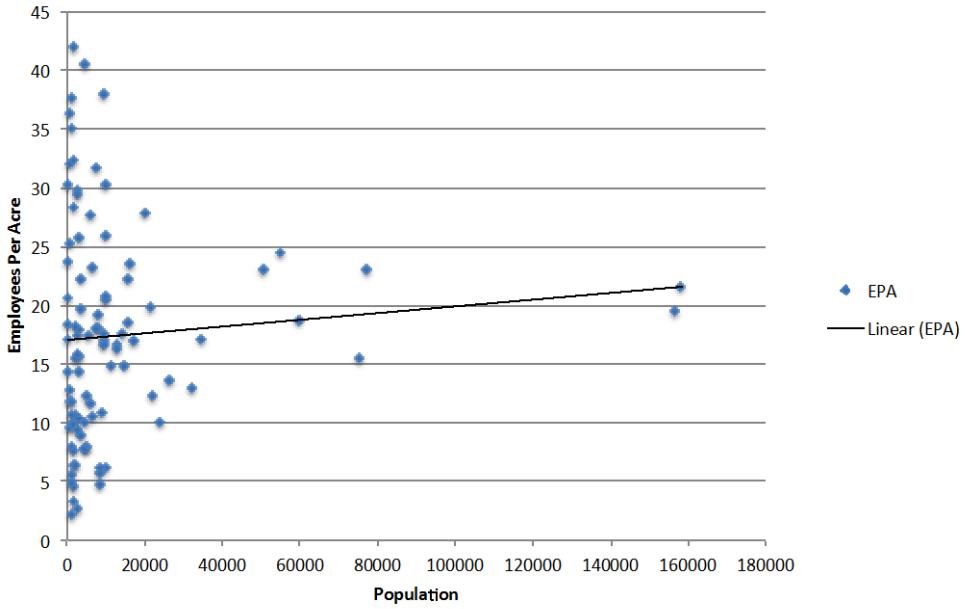
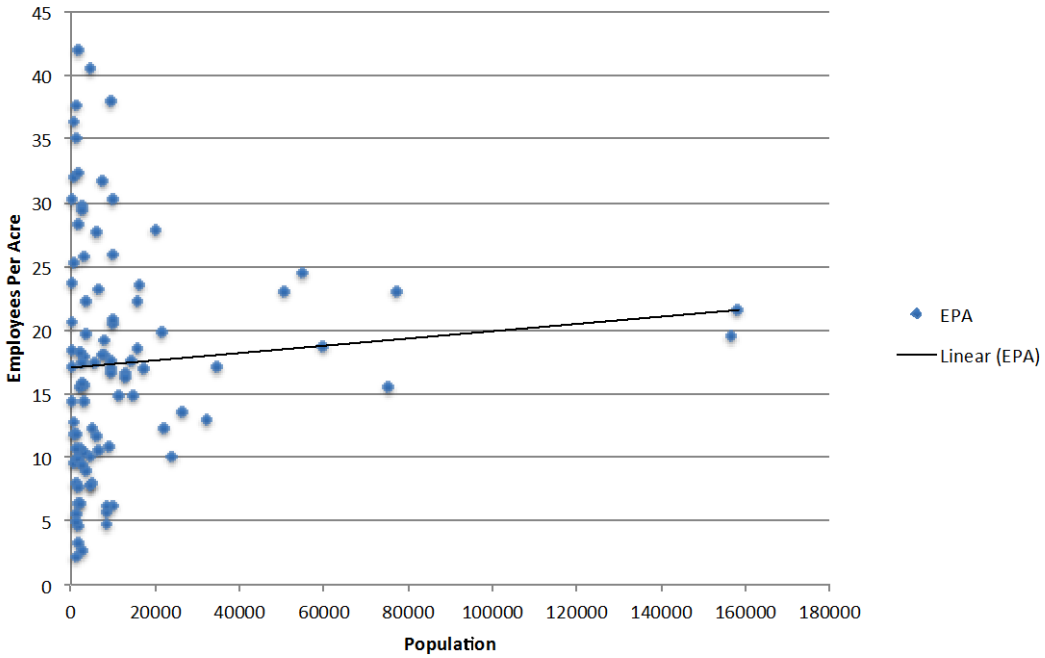


Figure D-11. Industrial density (EPA) by population, Tier 2 cities, 2012



Analysis of Development on Rural Residential Lands:

A Report to the HB 2254 Rules Advisory Committee

September 2015

Final Report

Prepared for:

HB 2254 Rules Advisory Committee

Department of Land Conservation & Development

Prepared by:

University of Oregon
Community Service Center
Department of Planning, Public Policy and Management

UNIVERSITY OF OREGON

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EXECUTIVE SUMMARY

This report presents analysis of development on lands that were brought into UGBs and/or annexed in Oregon cities to support development of a simplified land need methodology for use in urban growth boundary (UGB) review. The analysis is intended to address parts of the research requirements stated in House Bill 2254 (codified as ORS 197A) relating to historic land use efficiency.[1]

Overview

In response to the growing complexity of UGB amendment process, the 2013 legislature enacted HB 2254 (codified at ORS 197A) to provide for new, simplified methods for growing cities to evaluate the capacity of their UGBs. The law requires the LCDC to adopt rules to establish these methods before January 1, 2016. LCDC appointed a Rules Advisory Committee (RAC) to assist in development of these rules.

To support this analysis, the research team conducted a survey about residential development on exceptions lands and analyzed historic and current parcel data to examine trends in parcelization, development and density on exceptions lands.

Findings

This section summarizes responses to the survey and trends from spatial analysis of development between 1999-2012. The research team received 98 responses to survey questions about development on exceptions lands.

Survey

- **UGB expansions for residential land tend to be small and infrequent**. Only 22% of cities reported expanding UGBs to accommodate residential land needs between 1999-2012 and mid-sized cities (5,000-25,000) and cities in Central Oregon and the Willamette Valley more commonly expanded UGBs for residential land need. Half of cities that added land to UGBs provided data UGB expansions indicating that 1,710 acres were added and 102 new dwellings were constructed on land added to UGBs.

- **Cities are annexing rural residential land, but it is not developing immediately**. About 25% of cities outside the Portland Metropolitan UGB annexed rural residential land between 1999-2012. Large cities and cities in Southern Oregon and the Willamette Valley more frequently annexed this type of land. Half of the cities that annexed rural residential land provided data indicating that 4,211 acres were annexed and 398 units were built on annexed rural residential land. Only 10 percent of cities reported

[1] https://www.oregonlegislature.gov/bills_laws/lawsstatutes/2013ors197A.html

development on unincorporated rural residential land that was added to UGBs between 1999-2012.

- **Most cities do not monitor development activity**. Less than 20% of cities reported they monitor development on formerly rural residential land and small cities monitor more often than large cities.

- **Planners think rural residential development in unincorporated areas is problematic**. Planning directors generally indicated that residential development in unincorporated areas reduces the potential for future urban development and poses problems for the future but feel that urban growth management agreements adequately manage the issue.

Spatial Analysis of Development Activity

- **UGBs are growing much more slowly than population**. Between 2000 and 2012, about 11,573 acres were added to the 216 UGBs outside the Portland Metropolitan Region—an increase of 2.0%. Population increased by 15.3% (228,000) during that same time period.

- **More resource land was added to UGBs than exceptions land**. Most of the land added to UGBs was Resource Land and most of the parcelization occurred on Resource Lands that were over 20 acres in size. Still, only 132 parcels were developed on 212 acres added to UGBs, meaning the density of development was very low. Very few parcels and acres in historic rural residential zones were added to UGBs between 1999-2012, little parcelization occurred, and a very low level of development occurred in these areas between 1999-2012.

- **Land added to UGBs is not developing right away**. While case study cities added about 800 parcels and 4,000 acres to UGBs, only 132 parcels were developed after 2000 and only 75 parcels were developed and annexed after being added to UGBs. There is a lag between adding land to UGBs, annexing land, and developing land.

- **Lots under two acres are much less likely to divide and develop at urban densities than lots over two acres**. In historic Rural Residential land annexed to cities between 1996-2012, lots over two acres were mostly likely to subdivide during the period. There were very few large lots (over 5 acres) in historic rural residential zones, but these frequently lots subdivide. In total, 1,525 taxlots were created of 475 historic taxlots. The density of development varies by city size and region, but increases by city size and was much higher in Central Oregon and the Willamette Valley. In general the density of development in Rural Residential land that was annexed averaged 5.6 units per net acre between 1997-2014.

- **Most development is occurring on lands that are zoned for future urban use after annexation rather than rural residential use.** Across all zones in all regions and city size classes, density of new construction on annexed land was higher than density of new construction for land already in city limits. Further, over 40 percent of all new development occurred on

annexed land. In Future Urban zones, nearly 3,500 parcels were annexed and about 70 percent of these parcels were developed after annexation. The density of development in Future Urban Zones averaged 5.6 units per acre, which approximates urban densities shown generally across cities. The density of development varied across cities and regions. Only the Willamette Valley and Central Oregon annexed land in Future Urban Zones.

- **Little residential development is occurring in unincorporated areas within UGBs.** Development and density on unincorporated land in rural residential zones, future urban zones and all other? zones dropped after the implementation of the Statewide Planning Program. Still, some cities in Southern Oregon show relatively high levels of development in unincorporated areas at densities of 3 to 5 units per net acre.

Implications

- Since 2000, a very small amount of land was added to UGBs and very little of that land was in Rural Residential (exceptions) zones prior to inclusion. An even smaller amount was annexed or developed from Rural Residential zones. **Cities are rarely adding Rural Residential lands to UGBs.** Note that the research team did not evaluate individual UGB amendments. We assume that amendments are compliant with statewide policy since they were acknowledged by LCDC.

- There are few cities that maintain Rural Residential zones inside UGBs—most apply city plan designations and some type of transitional zoning. While not many cities have Rural Residential zones development within these zones in the past few decades averaged about 1.75 parcels per net acre. **Most cities create urban transition zones (called future urban for the purpose of this study) as holding zones after lands added to UGBs but prior to annexation.**

- A significant amount of historic rural residential land that was already in UGBs in 1999 was annexed between 1999-2012 and over 1,500 parcels were developed at an average of about 3 units per net acre. **Legacy Rural Residential Lands are annexed to UGBs and develop at about the same density as urban densities (between 5-6 units per acre.)**

- Across all zones, parcelization of lots (e.g., land divisions) less than 1 acre is very infrequent. Within Rural Residential zones, 2 to 5 acre parcels are the most common to parcelize. **If cities are adding existing developed Rural Residential subdivisions with lots less than 2 acres, it is not likely that any capacity exists on these lands.**

- Development and parcelization in all unincorporated areas inside UGBs has slowed tremendously since the implementation of the Statewide Planning Program but is still occurring in some jurisdictions. Continued development in incorporated areas, particularly on parcels less than 2 acres, will have long term implications for UGB expansion as parcels less than 2 acres are unlikely to subdivide inside UGBs.

CHAPTER 1: INTRODUCTION

This report presents analysis of development on lands that were brought into UGBs and/or annexed to Oregon cities. The analysis presented in this report supports development of a simplified land need methodology for use in urban growth boundary (UGB) review. The analysis is intended to address parts of the research requirements stated in House Bill 2254 (codified as ORS 197A) relating to historic land use efficiency.[2]

Background

HB 2254 requires the Land Conservation and Development Commission (LCDC) produce an administrative rule that provides an alternative, simplified, pathway to UGB amendments for cities outside the Portland Metropolitan UGB. As part of the rulemaking process, the bill requires the LCDC establish factors for converting forecasted population and employment growth into estimates of land need for housing, employment and other categories of uses. The bill requires the factors:

- Be based on an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state;
- Reflect consideration by the Commission of any significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state;
- Be designed to encourage an increase in the land use efficiency of a city, subject to market conditions; and
- Provide a range of policy choices for a city about the form of its future growth.

The bill also requires "an empirical evaluation of the relation between population and employment growth and the rate and trends of land utilization in the recent past in the applicable major region of the state. Reflect significant changes occurring or expected to occur in the markets for urban land uses in that major region of the state." Based on this requirement, DLCD staff identified the following research objectives for the first phase of the rulemaking project:

1. Determine the historical rate of "land efficiency" and land consumption (per person/acre).
2. Determine past employment growth rates/trends of land utilization.
3. Determine significant changes "occurring or expected to occur" in markets for urban land uses.

[2] https://www.oregonlegislature.gov/bills_laws/lawsstatutes/2013ors197A.html

As part of this process, the DLCD contracted with the UO to analyze "land use efficiency." Our research focused on land use efficiency of residential and employment growth in Oregon cities outside the Metro UGB and is presented in the report titled *Analysis of Land Use Efficiency in Oregon Cities: A Report to the HB 2254 Rules Advisory Committee*.

Purpose and Methods

With the passage of Senate Bill 100, the Oregon statewide land-use program became law in 1973. Its iconic requirement is that every city establish an Urban Growth Boundary (UGB) to (1) protect resource lands outside the boundary, and (2) encourage more efficient (denser) development patterns inside the boundary.

Exceptions lands pose interesting dilemmas related to UGB expansion. ORS 197.298 establishes the following priority scheme for evaluation of lands in UGB amendments: (1) urban reserves, (2) exceptions lands, (3) marginal lands (only for marginal land counties), and (4) resource lands. Exceptions lands are lands zoned for rural residential or employment uses that typically have pre-existing development. Because most cities do not have urban reserves established through OAR 660-021, exception lands are typically the highest priority lands for consideration. For residential purposes, these are lands were historically zoned rural residential and are usually in low-density rural residential uses (many are parcels less than 5 acres). A key question that cities struggle with is how much development capacity to assign to these exceptions lands. This analysis looks at the historical performance of rural residential lands that are within UGBs or were added to UGBs after the original boundary was established.

Management of land within unincorporated areas of UGBs is a key issue for many jurisdictions. Because analysis of land use efficiency on unincorporated lands in UGBs was not included in the initial scope of work, the *Land Use Efficiency* report did not address the efficiency of development on lands that were added to urban growth boundaries or recently annexed lands. This report examines three elements related to land management within unincorporated areas of UGBs: (1) the rate and density of single-family development achieved on lands that were formerly rural residential; (2) the rate and density of single-family development in unincorporated areas of UGBs; and (3) the rate and density of single-family development on lands that were annexed in the recent past.

This research pertains to one of DLCD's "locational" analysis issues. Due to the ORS 197.298 priority scheme. cities cannot exclude such lands as impracticable to serve merely because they are already parcelized or developed with rural residential uses, but can apply a discount factor that reduces the development yield of such lands when they are brought into the UGB.

This research explores the hypothesis that (1) parcelization has an inverse effect on achieving higher housing densities with urbanization (smaller parcels, less density), and (2) actual rural residential development on those parcels has an inverse effect on achieving higher housing densities with urbanization (more rural residences, less density).

In short, this research focuses on how "rural residential" lands, when brought into a UGB, have developed in the past over time. We used data that we assembled for the land use efficiency research to develop a database of development that fits the desired criteria and supplemented this database with historic parcel and zoning data obtained from case study counties including Deschutes, Jackson, Lane, Linn and Marion counties.

The core elements of our work program included two major components: (1) a survey of cities outside the Portland Metropolitan UGB; and (2) empirical analysis of county assessment data using geographic information systems.

Survey of Municipalities

The research team administered an online survey of planning directors with assistance the Oregon Planning Directors Association and the League of Oregon Cities. The purpose of the survey was to gather information about: (1) UGB expansion; (2) annexation; and (3) development on rural residential lands. Additionally, the survey included Likert scale questions about development in unincorporated areas and urban growth management agreements.

The UO team surveyed all 216 incorporated cities outside the Portland Metropolitan UGB and received 111 valid responses—a 51% response rate. Table 1-1 shows survey response numbers and rates by city size. The rates range from a high of 65% for cities between 10,000 and 24,999 to a low of 38% for cities less than 1,000.

Table 1-1. Survey response by city size

City Size	Number of Cities	Number of Responses	Response Rate
<1,000	81	31	38%
1,000-4,999	79	46	58%
5,000-9,999	28	16	57%
10,000-24,999	17	11	65%
25,000-49,999	4	2	50%
50,000 or more	7	5	71%
Total	**216**	**111**	**51%**

Table 1-2 shows survey response rates by region. The rates range from a high of 62% for the South Coastal Region to a low of 39% for the Northeast Oregon region.

Table 1-2. Survey response by region

Region	Number of Cities	Number of Responses	Response Rate
Central Oregon	15	8	53%
North Coastal Oregon	19	11	58%
Northeast Oregon	56	22	39%
South Coastal Oregon	13	8	62%
Southeast Oregon	14	8	57%
Southern Oregon	24	14	58%
Willamette Valley	75	40	53%
Total	**216**	**111**	**51%**

Data Analysis

The UO research team used current and historic parcel data from county assessor's in addition to historic and statewide zoning data to analyze parcelization, density and the rate of development on: (1) land added to UGBs during the study period; (2) land annexed between 1996-2012; and (3) land in 2012 unincorporated areas. The research team reports data on the density and rate of development using current county assessor's data for all 122 Tier 3[3] cities (shown in Appendix A) and shows historic data on parcelization and historic zoning using data for 47 cities in case study counties: Deschutes, Jackson, Linn, Lane, and Marion.

Figure 1-1 uses Harrisburg to show the categories of land we examine in this study. Map 1 shows the 1999 and 2012 city limits in addition to land annexed to UGBs, land annexed and the areas outside the city limits represent unincorporated areas. Map 2 represents parcelization by showing 1999 taxlots, 2014 taxlots, and areas zoned Future Urban or Rural Residential.

The Harrisburg map illustrates that very little residential land was annexed or added to the UGB and little subdivision occurred on those areas annexed for residential uses. But, it is important to note that Harrisburg may not be representative of all cities. We chose Harrisburg because of the existence of annexation, UGB expansion, and Future Urban and Rural Residential zones. By contrast, the Future Urban zone was developed between 1999-2012.

[3] Tier 3 cities include all cities outside of Metro except: counties where cities are small & not growing & counties for which we lack quality or accessible data; cities lacking single family residential parcels are also excluded. The same data were used in UO's report on historic land use efficiency.

Figure 1-1. Categories of Land Examined in this Study

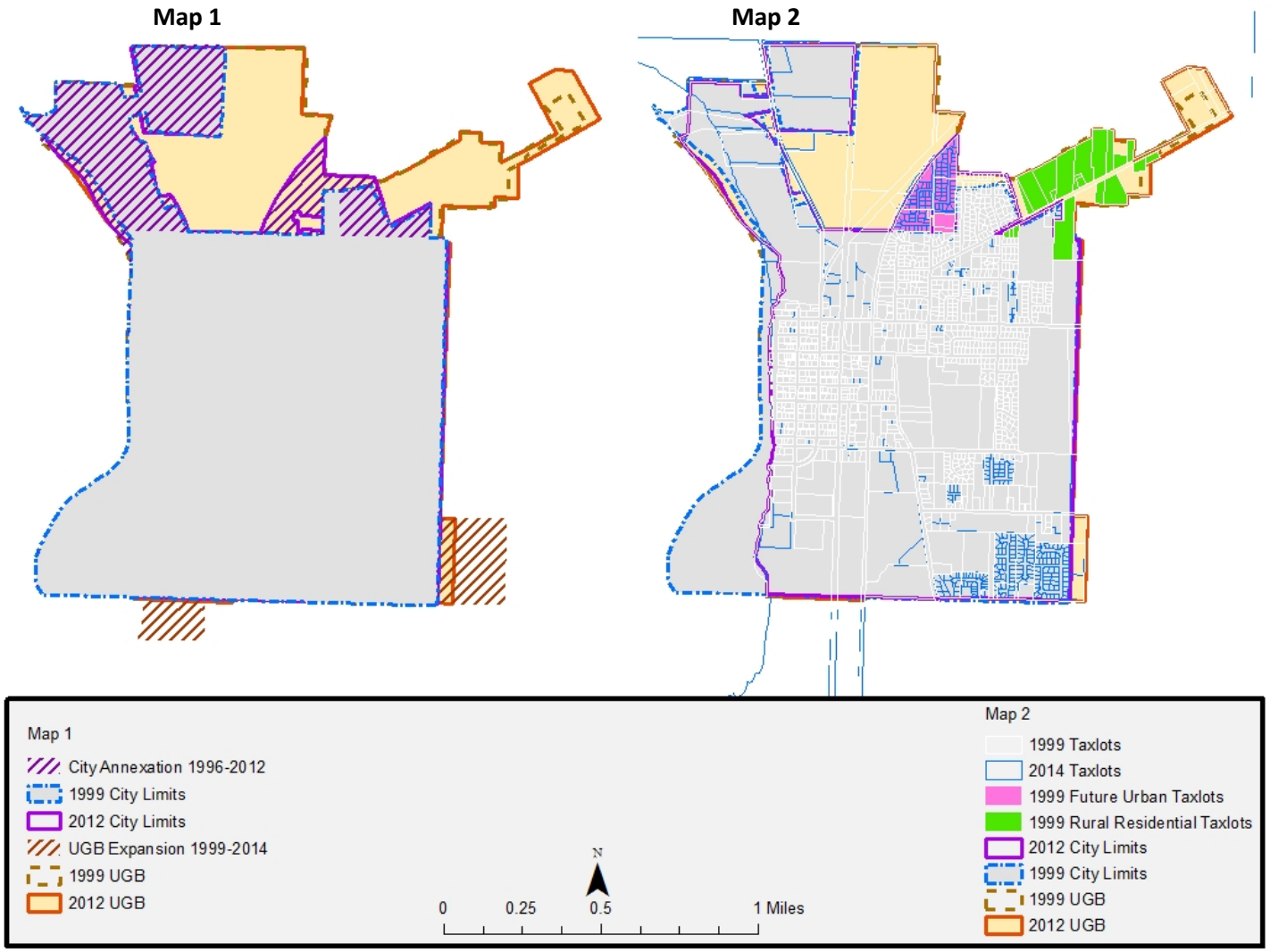


Table 1-3 provides context for the total amount of UGB expansion, annexation and subdivision during the period for 47 case study cities (because the UO research team was unable to obtain data on historic parcels in all cities).[4] Comparing historic parcelization with current (2014) parcelization gives context for the amount of parcelization and subdivisions that occurred.

The total land area inside UGBs in case study cities increased by about 2 percent between 2000-2012. Less than half the parcels added to the UGB were annexed during the time period and only 55 historic parcels were added to the UGB and subsequently subdivided. Only 40 parcels on 583 acres were added to the UGB, subdivided and annexed.

Table 1-3. Parcels and Acres in UGBs and City Limits: Total, Added to UGBs, Annexed, Subdivided, 1999-2012, Case Study Cities.

	Total Acres	Historic Parcels	2014 Parcels
In 2012 UGB	165,250	281,197	312,051
in 1999 UGB	161,200	280,481	310,197
In 2012 City Limits	138,635	252,002	282,792
In 1999 City Limits	115,322	236,843	248,171
Added to UGB	4,050	716	1,854
Added to UGB and Annexed	1,803	388	1,368
Added to UGB and Subdivided	811	55	1,223
Added to UGB and Subdivided and Annexed	583	40	1,036

Source: County taxlot and assessment data, 1999-2002 and 2014; Oregon Spatial Data Library; Department of Land Conservation and Development Urban Growth Boundary Expansions Data; Includes 47 cities in case study counties: Deschutes, Jackson, Linn, Lane, and Marion.

[4] We contacted many planners and county assessors; few counties maintain historical archives of assessment data.

CHAPTER 2: SURVEY RESULTS

The UO research team developed and administered online survey to planners and city administrators for all 216 cities outside the Portland Metro UGB. We received 111 valid responses—a 51% response rate. The purpose of the survey was to gather information from municipalities about (1) UGB expansion; (2) annexation; (3) development on rural residential lands. Additionally, the survey included Likert scale questions about development in unincorporated areas and urban growth management agreements. Each question includes the number of responding cities; not all cities responded to all of the questions.

Past Trends in UGB Expansion

This section of the survey asked respondents to report information about whether city expanded their UGB to accommodate residential land needs between 1999-2012.

A majority of cities surveyed did not amend the UGB to accommodate residential land needs. City size was not a clear indicator for amending UGB for residential lands, however cities of less than 1,000 residents indicated more often than larger cities that they did not know whether the city had amended the UGB (Table 2-1). None of the largest cities (over 50,000) reported expanding their UGB to accommodate residential land needs between 1999-2012.

Table 2-1. Percentage of Cities that Amended UGB to Accommodate Residential Land Needs between 1999-2012 by City Size

City Size	Yes	No	Don't Know	N
<1,000	4%	76%	20%	25
1,000-4,999	29%	71%	0%	42
5,000-9,999	25%	69%	6%	16
10,000-24,999	36%	64%	0%	11
25,000-49,999	100%	0%	0%	1
50,000 or more	0%	100%	0%	3
Total	**22**	**70**	**6**	**98**

Table 2-2 shows cities that reported amending their UGB for residential lands by region. Amending UGBs to accommodate residential land need was more common in Central and Southern Oregon, which is not surprisingly given population growth in these regions. Twenty-four percent of cities in the Willamette Valley reported expanding UGBs for residential needs during the 1999-2012 period. This finding is somewhat surprising since Willamette Valley cities accounted for 60% of population growth outside the Portland Metro UGB between 2005 and 2012.

Table 2-2. Percentage of Cities that Amended UGB to Accommodate Residential Land Needs between 1999-2012 by Region

Region	Yes	No	Don't Know	N
Central Oregon	50%	50%	0%	8
North Coastal Oregon	18%	82%	0%	11
Northeast Oregon	10%	70%	20%	20
South Coastal Oregon	0%	100%	0%	7
Southeast Oregon	29%	57%	14%	7
Southern Oregon	40%	60%	0%	10
Willamette Valley	24%	74%	3%	34
Total	**22**	**69**	**6**	**97**

We asked cities to provide data about the amount of land added, the percentage in residential exceptions areas, the number of new dwellings, and the year(s) when UGB expansions occurred.

Of the twenty-two cities that reported amending their UGB for residential land, eleven of them (50%), reported data on UBG expansions. All of the cities that reported data on a UGB expansion have populations of less than 25,000. Regionally, cities that reported data on UGB expansion were concentrated in the Willamette Valley (five cities) and Central Oregon (three cities), and Northeast and Southern Oregon each containing one city that reported data (Table 2-3).

Table 2-3. Cities that Reported Amending their UGB for Residential Land Between 1999 and 2012 by City Size

City Size	Total Responding Cities	Cities that reported amending their UGB for residential land	Cities that reported data on UGB expansions	Total Added Acres	Average percentage in residential excpetion areas	Total Reported New Dwellings
<1,000	31	1	1	128	103.0	0
1,000-4,999	46	12	4	449	33.3	100
5,000-9,999	16	4	3	773	0.0	0
10,000-24,999	11	4	3	360	12.5	2
25,000-49,999	2	1				
50,000 or more	5					
Total	**111**	**22**	**11**	**1,710**	**NA**	**102**

Note: table presents data provided by respondents and may not include all UGB expansions that occurred during the 1999-2012 period

Northeast Oregon did not report any amount of land in residential exception areas that were added to UGBs. The Willamette Valley, Central Oregon, and Southern Oregon all reported a significant percentage of the land in residential exception areas (averages of 25% to 34%), however only Central Oregon reported a significant number of new dwellings in that land being annexed (100 new dwellings; Table 2-4). North Coastal Oregon, Southeastern Oregon, and South Coastal Oregon did not have any cities that reported data on UGB expansions.

Table 2-4. Cities that Reported Amending their UGB for Residential Land Between 1999 and 2012 by Region

Region	Total Responding Cities	Cities that reported amending their UGB for residential land	Cities that reported data on UGB expansions	Total Added Acres	Average percentage in residential excpetion areas	Total Reported New Dwellings
Central Oregon	8	4	3	706	33.3	100
North Coastal Oregon	11	2				
Northeast Oregon	22	2	1	300	0.0	0
South Coastal Oregon	8					
Southeast Oregon	8	2				
Southern Oregon	13	4	1	60	25.0	2
Willamette Valley	39	8	5	644	34.3	0
Total	**109**	**22**	**10**	**1,710**	**NA**	**102**

Annexation

The next section the survey asked cities to report information about annexation policy and trends. Most cities indicated that annexations do not have to be approved by vote (Table 2-5). Larger cities—those with populations larger than 25,000—indicated that a vote was required for annexations at a higher rate than cities with populations under 25,000. A small but notable number of cities with populations less than 5,000 indicated that they did not know whether or not a vote was required.

Table 2-5. Cities that Require Annexations be Approved by Vote by City Size, 2015

City Size	Yes	No	Don't Know	N
<1,000	28%	40%	32%	25
1,000-4,999	31%	60%	10%	42
5,000-9,999	31%	69%	0%	16
10,000-24,999	27%	73%	0%	11
25,000-49,999	100%	0%	0%	1
50,000 or more	67%	33%	0%	3
Total	**31**	**55**	**12**	**98**

Annexation voting is more common in Central Oregon, the Willamette Valley and Southern Oregon than other regions. A very small number of cities in South Coastal and Southeast Oregon report annexation voting (Table 2-6).

Table 7. Cities that Require Annexations be Approved by Vote by Region, 2015

Region	Yes	No	Don't Know	N
Central Oregon	38%	63%	0%	8
North Coastal Oregon	27%	64%	9%	11
Northeast Oregon	30%	55%	15%	20
South Coastal Oregon	14%	57%	29%	7
Southeast Oregon	14%	71%	14%	7
Southern Oregon	40%	50%	10%	10
Willamette Valley	38%	50%	12%	34
Total	**31**	**54**	**12**	**97**

A majority of responding cities of all sizes reported that they did not annex land zoned rural residential between 1999 and 2012, with the exception of cities over 50,000. Two of the three cities surveyed with populations over 50,000 reported that they annexed land zoned rural residential (Table 2-7). Of all the cities with populations less than 25,000, 18% of the cities indicated that they did not know if the city had annexed land zoned rural residential in those years.

Table 2-7. Cities that Reported Annexing Rural Residential Land between 1999-2012 by City Size

City Size	Yes	No	Don't Know	N
<1,000	4%	64%	32%	25
1,000-4,999	24%	64%	12%	42
5,000-9,999	44%	44%	13%	16
10,000-24,999	36%	45%	18%	11
25,000-49,999	0%	100%	0%	1
50,000 or more	67%	33%	0%	3
Total	**24**	**57**	**17**	**98**

Across regions, more cities in Southern Oregon, South Coastal Oregon and the Willamette Valley reported annexing rural residential lands than all other regions (Table 2-8). Very few cities in Central, North Coastal and Southeast Oregon reported annexing rural residential land. However, several cities in each region were unsure about whether the city had annexed rural residential land during the period.

Table 2-8. Percentage of Cities that Reported Annexing Rural Residential Land between 1999-2012 by Region

Region	Yes	No	Don't Know	N
Central Oregon	13%	75%	13%	8
North Coastal Oregon	9%	73%	18%	11
Northeast Oregon	10%	70%	20%	20
South Coastal Oregon	43%	29%	29%	7
Southeast Oregon	0%	86%	14%	7
Southern Oregon	50%	40%	10%	10
Willamette Valley	35%	47%	18%	34
Total	**24**	**56**	**17**	**97**

The research team asked cities to report data on land annexed and new dwellings built in annexed exception areas between 1999-2012. Half of the cities that reported annexing residential land between 1999 and 2012 reported data on the annexations. There were no cities under 1,000 people or with a population between 25,000 and 49,999 that reported annexing residential land or any data on annexations. Cities with populations between 1,000 and 9,999 were the only cities to report new dwellings (Table 2-9).

Table 2-9. Cities that Reported Annexing Residential Land between 1999-2012 by City Size, 2015

City Size	Total Responding Cities	Cities that reported annexing residential land 1999-2012	Cities that reported data on annexations	Total Added Acres	Reported New Dwellings
<1,000	31	1			
1,000-4,999	46	10	5	193.46	21
5,000-9,999	16	7	3	242	377
10,000-24,999	11	4	2	1260.75	
25,000-49,999	2				
50,000 or more	5	2	2	2515	
Total	**111**	**24**	**12**	**4,211**	**398**

Of the 398 total reported new dwellings between 1999 and 2012, cities in the Willamette Valley reported adding the most new dwellings, at 370 dwellings. The South Coastal Oregon was the only other region that reported the addition of new dwellings, reporting 28 new dwellings. Cities reported adding a total of 4,211 acres of residential land. A majority of the acres were concentrated in Southern Oregon and primarily in the Willamette Valley, which reported 3,203 of the 4,211 added acres (Table 2-10).

Table 2-10. Cities that Reported Annexing Residential Land between 1999-2012 by Region, 2015

Region	Total Responding Cities	Cities that reported annexing residential land 1999-2012	Cities that reported data on annexations	Total Added Acres	Reported New Dwellings
Central Oregon	8	1			
North Coastal Oregon	11	1			
Northeast Oregon	22	2	1	0	0
South Coastal Oregon	8	3	2	145	28
Southeast Oregon	8				
Southern Oregon	13	5	3	863.46	0
Willamette Valley	39	12	6	3202.75	370
Total	**109**	**24**	**12**	**4,211**	**398**

Development Monitoring

We asked respondents whether their city monitors development on formerly rural residential lands within the UGB. A majority of respondents indicated that their city does not monitor the development of formerly rural residential lands within the UGB (Table 3-12). Cities with populations of less than 10,000 were more likely to indicate the city does monitor such development. Of the thirteen cities with populations over 10,000, just one city indicated that they do some level of monitoring.

Table 2-11. Cities that Monitor Development on Formerly Rural Residential Lands by City Size

City Size	Yes	No	Don't Know	N
<1,000	17%	58%	25%	24
1,000-4,999	27%	68%	5%	41
5,000-9,999	20%	80%	0%	15
10,000-24,999	0%	90%	10%	10
25,000-49,999	0%	100%	0%	1
50,000 or more	0%	100%	0%	3
Total	**18**	**67**	**9**	**94**

Table 2-12 shows whether cities monitor development on rural residential lands in their UGB by region. Monitoring was more commonly reported in South Costal and Southern Oregon but the share of cities monitoring by region is very small.

Table 2-12. Cities that Monitor Development on Formerly Rural Residential Lands by Region

Region	Yes	No	Don't Know	N
Central Oregon	13%	88%	0%	8
North Coastal Oregon	20%	80%	0%	10
Northeast Oregon	21%	74%	5%	19
South Coastal Oregon	33%	67%	0%	6
Southeast Oregon	29%	57%	14%	7
Southern Oregon	30%	60%	10%	10
Willamette Valley	12%	70%	18%	33
Total	**18**	**66**	**9**	**93**

Development Activity in Unincorporated Areas

The next section of the survey asked cities about residential development on unincorporated areas on formerly rural residential lands that were added to UGBs between 1999-2012. Of the responding cities, a vast majority reported they had not experienced any residential development on formerly rural residential lands that were added to the UGB between 1999 and 2012. Only nine of the ninety-five cities that answered indicated that they had residential development on formerly rural residential lands (Table 2-13). This did not vary across the different size ranges of cities. A notable number of respondents, especially from the smaller cities, did not know.

Table 2-13. Cities with Residential Development on Formerly Rural Residential Lands that were added to the UGB between 1999 and 2012 by City Size

City Size	Yes	No	Don't Know	N
<1,000	4%	75%	21%	24
1,000-4,999	12%	68%	20%	41
5,000-9,999	7%	87%	7%	15
10,000-24,999	9%	55%	36%	11
25,000-49,999	100%	0%	0%	1
50,000 or more	0%	100%	0%	3
Total	**9**	**68**	**18**	**95**

A larger share of cities in Southern Oregon reported development on formerly rural residential lands within UGBs between 1999-2012 as shown in Table 2-14. Very few cities in other regions reported this type of development but many cities were not sure.

Table 2-14. Cities with Residential Development on Formerly Rural Residential Lands that were added to the UGB between 1999 and 2012 by Region

Region	Yes	No	Don't Know	N
Central Oregon	13%	75%	13%	8
North Coastal Oregon	0%	80%	20%	10
Northeast Oregon	5%	79%	16%	19
South Coastal Oregon	14%	57%	29%	7
Southeast Oregon	14%	71%	14%	7
Southern Oregon	30%	40%	30%	10
Willamette Valley	6%	76%	18%	33
Total	**9**	**67**	**18**	**94**

Planning Director Comments

In the final section of the survey, we asked respondents to indicate their level of agreement or disagreement (from a 1-5 scale) with three statements that relate to the impact of residential development in unincorporated areas on UGB expansion. Specifically, we asked respondents to indicate their level of agreement or disagreement with the following statements:

- Residential development in unincorporated areas reduces the potential for future urban level development
- Our urban growth management agreement adequately manages residential development in the unincorporated areas of the UGB
- Residential development in the unincorporated area of the UGB does not create any significant problems

As shown in Table 2-15, over 40% of respondents either agree or strongly agree that residential development in unincorporated areas reduces the potential for future urban development, but only 20% disagree or strongly disagree with this statement. Nearly 45% of respondents either agree or strongly agree that the urban growth management agreement adequately manages development in unincorporated areas. A small share feel that residential development in unincorporated areas does not provide significant problems, indicating that nearly 40% of respondents feel that this style of development poses significant problems.

Table 2-15. Level of Agreement or Disagreement with Statements Related to Development in Unincorporated Areas of UGBs

Statement	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses
Residential development in unincorporated areas reduces the potential for future urban level development	3%	17%	40%	30%	11%	103
Our urban growth management agreement adequately manages residential development in the unincorporated areas of the UGB	4%	15%	37%	37%	7%	102
Residential development in the unincorporated area of the UGB does not create any significant problems	12%	27%	33%	23%	5%	103

Table 2-16 shows the responses to the statements by city size; Table 2-17 shows the responses by region. Smaller cities were more likely to agree less with the statement: "Residential development in unincorporated areas reduces the potential for future urban level development," than larger cities. Broken down regionally, the scores indicate that cities generally "agree" or "neither agree nor disagree" with that statement, with the exception of Southeast and Central Oregon, which have scores that reflect that cities in that region are slightly more inclined to disagree. The average scores by region range from 2.86 to 3.70, with the average overall score of 3.23. Averages greater than 3 indicate a higher level of agreement than disagreement with the statements; higher averages reflect higher levels of agreement.

Cities generally responded in the range of "neither agree nor disagree," slightly favoring agreement to the statement: "Our urban growth management agreement adequately manages residential development in the unincorporated areas of the UGB." This is true both across the various population size ranges and across the various regions. The average scores by region range from 3.00 to 3.63, with the average overall score of 3.28.

Cities generally were more inclined to disagree, or "neither agree nor disagree" with the statement: "Residential development in the unincorporated area of the UGB does not create any significant problems." This trend was true when comparing both by city size and by region. The average scores by region range from 2.50 to 3.14, with the average overall score of 2.85.

Table 2-16. Average Level of Agreement to these Statements by City Size, 2015

			Average level of agreement regarding:		
City Size	Total Responding Cities	Cities responding to this question	Residential development in unincorporated areas reduces the potential for future urban level development	Our urban growth management agreement adequately manages residential development in the unincorporated areas of the UGB	Residential development in the unincorporated area of the UGB does not create any significant problems
<1,000	31	23	2.87	3.13	3.09
1,000-4,999	46	41	3.12	3.25	2.80
5,000-9,999	16	15	3.47	3.40	3.00
10,000-24,999	11	11	4.00	3.73	2.45
25,000-49,999	2	1	3.00	3.00	3.00
50,000 or more	5	3	4.00	3.67	2.33
Total	**111**	**94**	**3.41**	**3.36**	**2.78**

Table 2-17. Average Level of Agreement to these Statements by Region, 2015

			Average level of agreement regarding:		
Region	Total Responding Cities	Cities responding to this question	Residential development in unincorporated areas reduces the potential for future urban level development	Our urban growth management agreement adequately manages residential development in the unincorporated areas of the UGB	Residential development in the unincorporated area of the UGB does not create any significant problems
Central Oregon	8	8	2.88	3.63	2.50
North Coastal Oregon	11	10	3.20	3.00	2.80
Northeast Oregon	22	19	3.16	3.21	2.53
South Coastal Oregon	8	7	3.43	3.00	2.86
Southeast Oregon	8	7	2.86	3.29	3.14
Southern Oregon	13	10	3.70	3.30	3.00
Willamette Valley	39	32	3.38	3.52	3.09
Total	**109**	**93**	**3.23**	**3.28**	**2.85**

CHAPTER 3: ANALYSIS OF DEVELOPMENT ACTIVITY

This chapter presents analysis of development activity on lands that were added to UGBs, lands that were annexed, and lands that were in unincorporated areas during the planning period (1996 through 2012). This chapter presents results of the research team's analysis of development activity. Methods are described in Appendix B.

Analysis of Development Activity on Study Lands

This section presents analysis of parcelization, density, and rate of development for land added to UGBs, land annexed to city limits, and current unincorporated areas. We report this data by region and city size. For the purpose of this analysis, we define "historic" zones and zoning that existed prior to inclusion in the UGB and/or annexation.

- **Rural Residential** zones are currently defined as minimum parcel sizes between 1 acre and 10 acres, as described in DLCD's Statewide Zoning layer.
- **Historic Rural Residential** zones were defined as minimum parcel sizes between 1 acre and 10 acres in the historic zoning layers provided by counties (between 1999 and 2002. See appendix B.)
- **Future Urban** zones are currently defined as planned for future residential or nonresidential uses inside the Urban Growth Boundary, with a planned density of 10 dwelling units per net acre, as defined in DLCD's Statewide Zoning layer.
- **Historic Future Urban** zones were defined as planned for future residential or nonresidential uses inside the Urban Growth Boundary, with a planned density of 10 dwelling units per net acre according to the historic zoning layers provided by counties (between 1999 and 2002. See appendix B.)

Land Added to UGBs

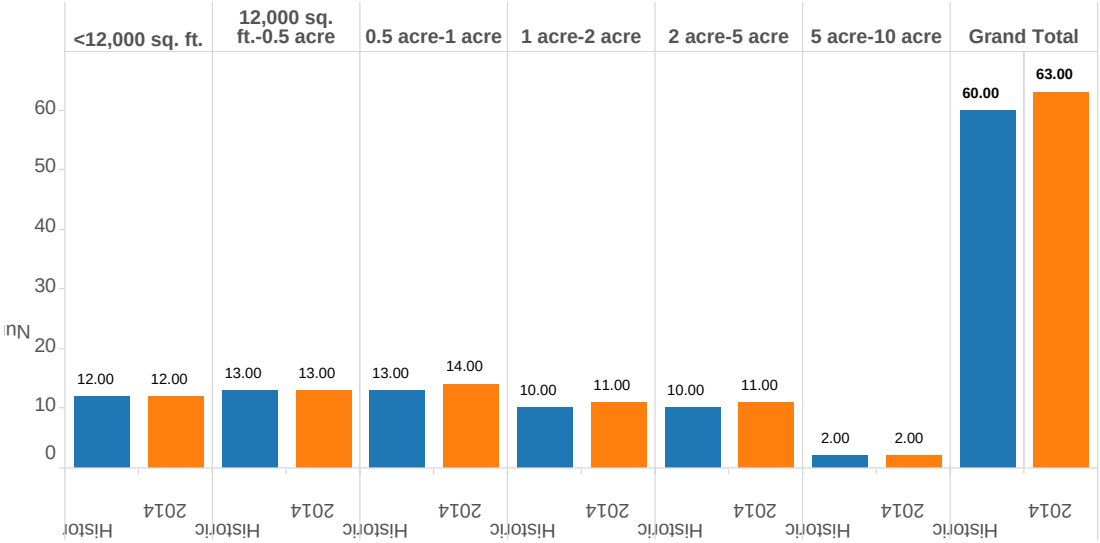
This section describes trends in parcelization, density and the rate of development on land added to UGBs between 1999 and 2012.

Historic Rural Residential Zones

Figure 3-1 shows **parcelization** of all parcels historically zoned Rural Residential that were added to the UGB between 1999 and 2012. Between 1999 and 2012, 161 total parcels were added to UGBs within case study counties. By 2014, these 161 parcels on 370 acres had subdivided into 368 parcels. Nearly all of the

parcelization occurred on parcels over two acres. Parcels in the two to 20-acre range represented all but 18 of the new parcels created.

Figure 3-1. Parcels in Historic Rural Residential Zone Added to UGBs, 1996-2012, Case Study Counties: Deschutes, Jackson, Linn, Lane, and Marion counties



Historic Parcels and 2014 Parcels for historic zoning generalized as "Rural Residential." The data includes all parcels fully inside the UGB in 2012, which were added to the UGB between 1999-2012. Parcels without zoning information were excluded. This dataset includes historic parcels from Deschutes, Linn, Lane, Jackson and Marion counties.

Tables 3-1 and 3-2 convey the rate and density of parcels in historic Rural Residential that were added to UGBs between 1999 and 2012 that developed after 1999. Very little development occurred on Rural Residential land that was added to UGBs. Only three cities (Scio, Hubbard and Cottage Grove) added land in historic rural residential zones to UGBs and only two parcels and three acres were developed after being added to UGBs. It is important to note that none of the parcels in historic rural residential zoning were added to UGBs and annexed during this period.

Table 3-1. Parcels in Historic Rural Residential Zones added to UGBs between 1999 and 2012 by City Size, Case Study Counties: Deschutes, Jackson, Linn, Lane, and Marion counties

	Added to UGB between 1999-2012						
	Total Added			Residential Parcels Developed between 2000-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	Number of Cities	Parcels	Unpro. Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres
<1,000	1	1	0.46	-	-	-	-
1,000-4,999	1	29	44.51	1	2	3.15	0.63
5,000-9,999	1	34	22.54	-	-	-	-
10,000-24,999	-	-	-	-	-	-	-
25,000-49,999	-	-	-	-	-	-	-
50,000 or more	-	-	-	-	-	-	-
Total	**3**	**64**	**68**	**1**	**2**	**3**	**0.63**

Table 3-2. Parcels in Historic Rural Residential Zones added to UGBs between 1999 or 1999 to 2012 by Region, Case Study Counties: Deschutes, Jackson, Linn, Lane, and Marion counties

	Added to UGB between 1999-2012						
	Total Added			Residential Parcels Developed between 2000-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	Number of Cities	Parcels	Unpro. Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres
Central Oregon	-	-	-	-	-	-	-
North Coastal Oregon	-	-	-	-	-	-	-
Northeast Oregon	-	-	-	-	-	-	-
South Coastal Oregon	-	-	-	-	-	-	-
Southeast Oregon	-	-	-	-	-	-	-
Southern Oregon	-	-	-	-	-	-	-
Willamette Valley	3	64	67.51	1	2	3.15	0.63
Total	**3**	**64**	**68**	**1**	**2**	**3**	**0.63**

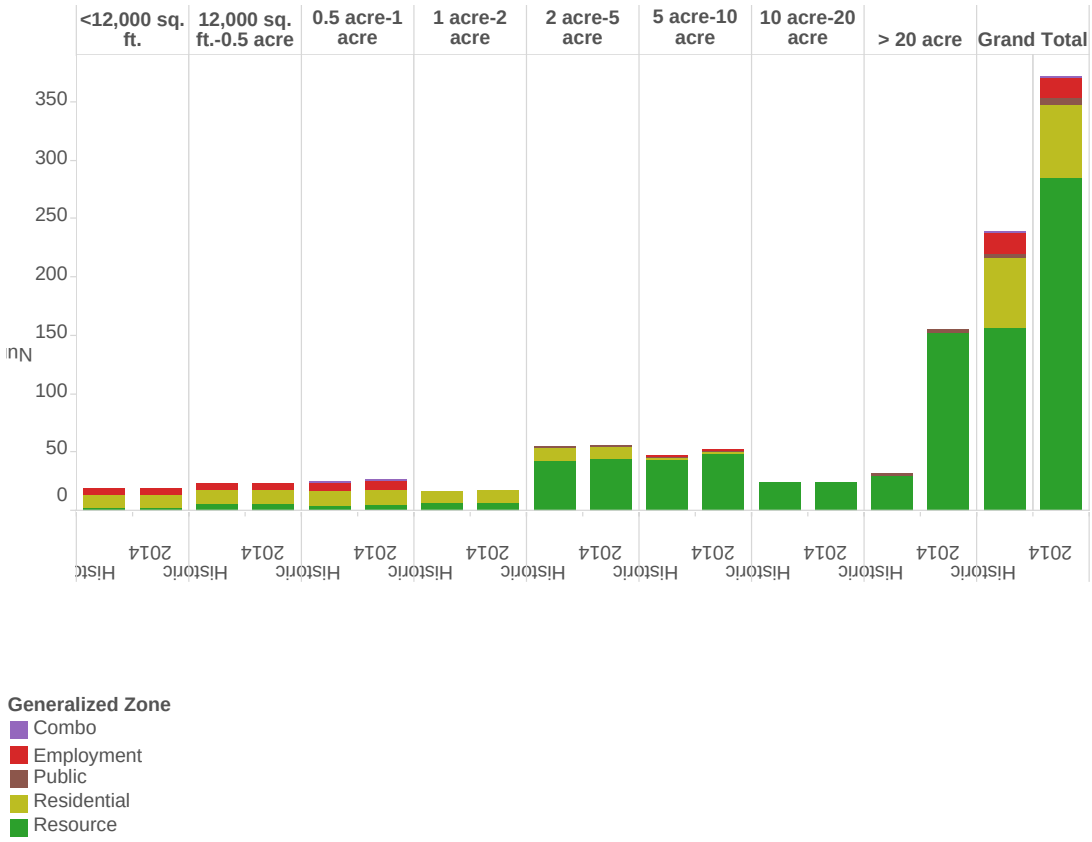
Historic Future Urban Zones

There were no lands historically zoned Future Urban that were added to the UGB between 1999 and 2012. This seems logical as lands would be rezoned Future Urban when added to UGBs.

All Historic Zones

Figure 3-2 shows the number of parcels by acreage class in historic taxlots and 2014 taxlots by generalized zone added to UGBs. It is clear that most of the parcels added to the UGB were resource or residential zones. Further, Figure 3-2 shows that parcelization occurs most frequently in larger parcels as 155 parcels were created from 31 parcels in historic parcel data. Most other categories stayed identical. Though not conveyed in Figure 3-2, nearly 50 percent of the acreage was added in parcels over 20 acres while parcels between five and 20 acres accounted for 35% of total acreage added to UGBs.

Figure 3-2. Parcels Added to UGB between 1999-2012 by Generalized Zone, Case Study Counties: Deschutes, Jackson, Linn, Lane, and Marion counties



Tables 3-3 and 3-4 show the number of parcels added to UGBs between 1999 and 2012, and the number of parcels and acres developed after land was added to the UGB. The table shows that the total number of acres added to the UGB was relatively small, representing approximately 1% of the total acreage inside UGBs in 1999. Note that nearly 1,800 acres (almost half) was added in the city of Redmond. Further, only 132 parcels were developed in the UGB expansion area after land was added to the UGB. The density of this development varied across cities and regions. But, the density in the North Coast (the city of Newport) was higher than all other regions. The density of cities from 5,000-10,000 was also higher. This trend was driven by development in the city of Winston.

Table 3-3. Parcels Added to UGB between 1999-2012 by City Size, Tier 3 cities

	Added to UGB between 1999-2012						
	Added to UGB			Residential Parcels Developed between 2000-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	Number of Cities	Parcels	Unpro. Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres
<1,000	2	2	46.88	-	-	-	-
1,000-4,999	14	78	219.99	3	5	4.08	1.22
5,000-9,999	7	313	1399.13	2	49	10.87	4.51
10,000-24,999	7	228	462.97	5	56	19.00	2.95
25,000-49,999	3	194	1922.72	2	22	178.33	0.12
50,000 or more	1	14	65.22	-	-	-	-
Total	**34**	**829**	**4,117**	**12**	**132**	**212**	**0.62**

Table 3-4. Parcels Added to UGB between 1999-2012 by Region, Tier 3 cities

	Added to UGB			Residential Parcels Developed between 2000-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	Number of Cities	Parcels	Unpro. Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres
Central Oregon	4	305	2632.34	2	21	173.28	**0.12**
North Coastal Oregon	2	60	102.73	1	10	0.82	**12.21**
Northeast Oregon	4	14	217.40	1	1	1.03	**0.97**
South Coastal Oregon	-	-	-	-	-	-	**-**
Southeast Oregon	1	2	2.46		-	-	**-**
Southern Oregon	5	123	261.08	1	48	9.47	**5.07**
Willamette Valley	18	325	900.90	7	52	27.68	**1.88**
Total	**34**	**829**	**4,117**	**12**	**132**	**212**	**0.62**

Current Rural Residential Zones

As shown in Tables 3-5 and 3-6, only six cities that added land to UGBs between 1999 and 2012 have land currently zoned rural residential. Further, only seven parcels have developed on these lands in two cities (McMinnville and Newberg), and at very low densities.

Table 3-5. Parcels Added to UGB between 1999-2012 in Current Rural Residential Zones by City Size, Tier 3 cities

	Added to UGB between 1999-2012						
	Total Added to UGB			Residential Parcels Developed between 2000-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	**Number of Cities**	**Parcels**	**Unpro. Acres**	**Number of Cities**	**Parcels**	**Unpro. Acres**	**Parcels/ Acres**
<1,000	-	-	-	-	-	-	-
1,000-4,999	-	-	-	-	-	-	-
5,000-9,999	3	39	26.18	1	6	8.88	**0.68**
10,000-24,999	1	75	99.18	1	1	2.57	**0.39**
25,000-49,999	2	32	74.69	-	-	-	-
50,000 or more	-	-	-	-	-	-	-
Total	**6**	**146**	**200.05**	**2**	**7**	**11.45**	**1**

Table 3-6. Parcels Added to UGB between 1999-2012 in Current Rural Residential Zones by Region, Tier 3 cities

	Total Added to UGB			Residential Parcels Developed between 2000-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	**Number of Cities**	**Parcels**	**Unpro. Acres**	**Number of Cities**	**Parcels**	**Unpro. Acres**	**Parcels/ Acres**
Central Oregon	1	2	2.13	-	-	-	-
North Coastal Oregon	-	-	-	-	-	-	-
Northeast Oregon	-	-	-	-	-	-	-
South Coastal Oregon	-	-	-	-	-	-	-
Southeast Oregon	-	-	-		-	-	-
Southern Oregon	1	1	0.25	-	-	-	-
Willamette Valley	4	143	197.66	2	7	11.45	**0.61**
Total	**6**	**146**	**200.05**	**2**	**7**	**11.45**	**0.61**

Current Future Urban Zones

Table 3-7 and Table 3-8 show land added to UGBs between 1999 and 2012 and currently zoned as Future Urban. Only three cities (Hubbard, Aumsville, and Redmond) added land currently zoned Future Urban, and only 22 parcels on 175 acres were developed after the land was added to the UGBs. Most strikingly, Redmond added nearly 1,800 acres of land currently zoned as Future Urban, but very little of this land was developed.

Table 3-7. Parcels Added to UGB between 1999-2012 in Current Future Urban Zones by City Size, Tier 3 cities

	Added to UGB between 1999-2012						
	Total Added to UGB			Residential Parcels Developed between 2000-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	**Number of Cities**	**Parcels**	**Unpro. Acres**	**Number of Cities**	**Parcels**	**Unpro. Acres**	**Parcels/ Acres**
<1,000	-	-	-	-	-	-	-
1,000-4,999	2	33	50.45	1	2	3.15	**0.63**
5,000-9,999	-	-	-	-	-	-	-
10,000-24,999	-	-	-	-	-	-	-
25,000-49,999	1	156	1798.97	1	20	171.88	**0.12**
50,000 or more	-	-	-	-	-	-	-
Total	**3**	**189**	**1,849**	**2**	**22**	**175**	**0.13**

Table 3-8. Parcels Added to UGB between 1999-2012 in Current Future Urban Zones by Region, Tier 3 cities

	Total Added to UGB			Residential Parcels Developed between 2000-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	**Number of Cities**	**Parcels**	**Unpro. Acres**	**Number of Cities**	**Parcels**	**Unpro. Acres**	**Parcels/ Acres**
Central Oregon	1	156	1798.97	1	20	171.88	**0.12**
North Coastal Oregon	-	-	-	-	-	-	-
Northeast Oregon	-	-	-	-	-	-	-
South Coastal Oregon	-	-	-	-	-	-	-
Southeast Oregon	-	-	-	-	-	-	-
Southern Oregon	-	-	-	-	-	-	-
Willamette Valley	2	33	50.45	1	2	3.15	**0.63**
Total	**3**	**189**	**1,849**	**2**	**22**	**175**	**0.13**

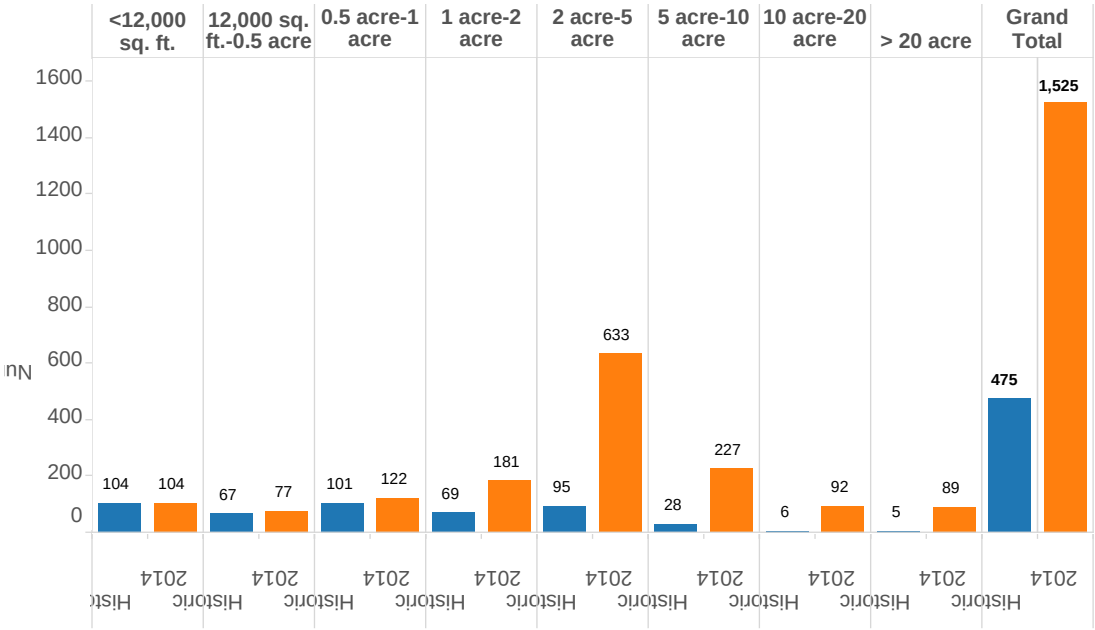
Land Annexed between 1996 and 2012

This section describes trends in parcelization, density and the rate of development on land annexed between 1996 and 2012.

Historic Rural Residential Zones

Figure 3-3 shows the amount of parcelization on historical rural residential parcels. The table shows the number of taxlots historically and in 2014 by acreage class. It is easy to see that there are very few large parcels in rural residential zones that were annexed. But, it is interesting to note how many taxlots were created on parcels 2 to 5 acres in size. Though not evident in Figure 3-3, 45 of 95 parcels within the 2 to 5 acre range subdivided into 2-28 parcels by 2012. New density on these parcels ranged from 0.68 to 6.67 units per acre in 2014.

Figure 3-3. Parcels Historically Zoned Rural Residential Annexed between 1996 or 1999 and 2012, Case Study Counties: Deschutes, Jackson, Linn, Lane, and Marion counties



Historic Parcels and 2014 Parcels for historic zoning generalized as "Rural Residential." The data includes all parcels fully inside the UGB in 2012, which were annexed between 1999-2012 (with the exception of Bend, which uses 1996 as the beginning date.) Parcels without zoning information were excluded. This dataset includes historic parcels from Deschutes, Linn, Lane, Jackson and Marion counties.

Table 3-9 shows the number of historically zoned rural residential parcels that were annexed and subsequently developed. A total of 5,135 parcels were annexed and 1,627 were developed. Between 1996 and 2012, 15 cites annexed historically rural residential land during the period and eight cities developed residential parcels in the annexed land between 1997 and 2014. As shown in Table 3-9, density was higher in larger cities, but not all population classes had type of annexation or development. Density was much higher after parcels were annexed than before, as average densities rose from 1.14 parcels to acre to 5.63 parcels per acre. On average, the parcels in annexed rural residential lands at 5.63 parcels per acre between 1996 and 2014. Table 3-10 conveys the same trends by region. Density was higher in Central Oregon, though only Bend is represented. Density was lower in South Coastal and near the average in Southern Oregon and Willamette Valley.

Table 3-9. Parcels Historically Zoned Rural Residential annexed between 1999-2012 in Current Future Urban Zones by City Size, Case Study Counties: Deschutes, Jackson, Linn, Lane, and Marion counties

	Annexed between 1996-2012										
	Total Annexed			Residential Parcels Developed between 1997-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*				Residential Parcels Developed between 1800-1996*(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	Number of Cities	Parcels	Unpro. Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres
<1,000	1	1	0.40	-	-	-	-	1	1	0.40	2.49
1,000-4,999	4	43	10.67	1	19	2.99	6.35	2	4	2.62	1.53
5,000-9,999	6	592	263.75	5	282	50.31	5.61	6	38	25.19	1.51
10,000-24,999	1	25	31.03	-	-	-	-	1	1	1.57	0.64
25,000-49,999	-	-	-	-	-	-	-	-	-	-	-
50,000 or more	3	1316	631.38	2	620	110.41	5.62	3	236	215.57	1.09
Total	**15**	**1,977**	**937**	**8**	**921**	**164**	**5.63**	**13**	**280**	**245**	**1.14**

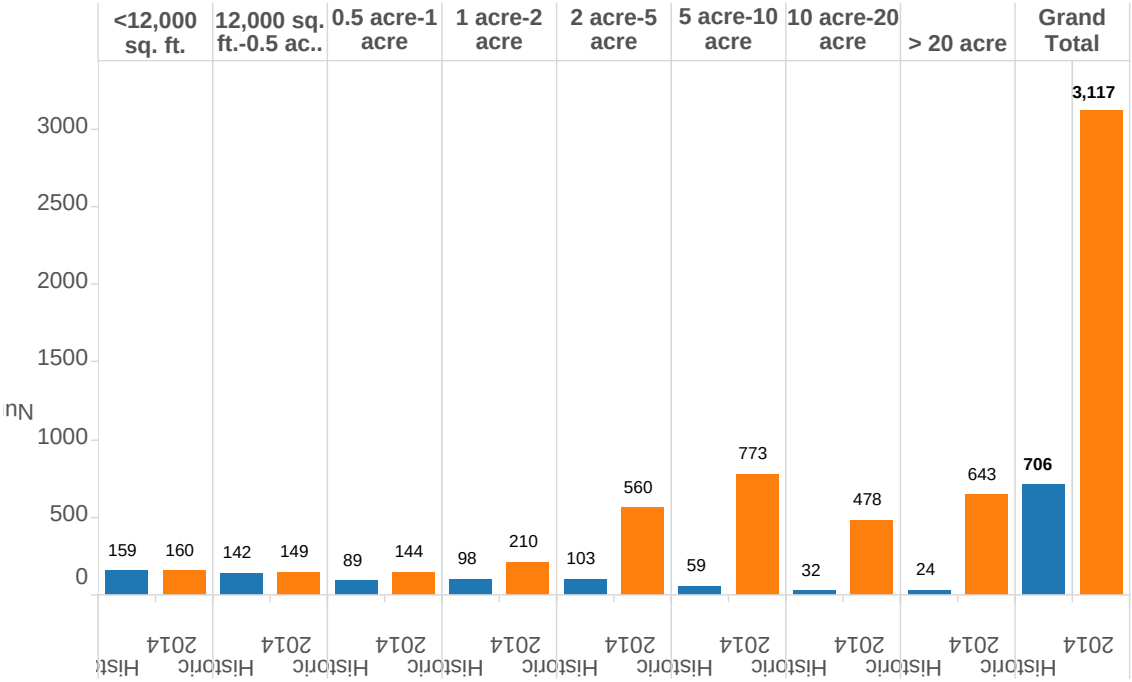
Table 3-10. Parcels Historically Zoned Rural Residential annexed between 1999-2012 in Current Future Urban Zones by Region, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties

	Annexed between 1996-2012										
	Total Annexed			Residential Parcels Developed between 1997-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*				Residential Parcels Developed between 1800-1996 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	Number of Cities	Parcels	Unpro. Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres
Central Oregon	1	416	152.93	1	198	28.05	7.06	1	16	34.33	0.47
North Coastal Oregon	-	-	-	-	-	-	-	-	-	-	-
Northeast Oregon	-	-	-	-	-	-	-	-	-	-	-
South Coastal Oregon	1	104	124.31	1	16	5.83	2.74	1	3	1.36	2.20
Southeast Oregon	-	-	-	-	-	-	-	-	-	-	-
Southern Oregon	6	1047	533.71	3	470	91.69	5.13	5	222	185.79	1.19
Willamette Valley	7	410	126.29	3	237	38.14	6.21	6	39	23.86	1.63
Total	**15**	**1,977**	**937**	**8**	**921**	**164**	**5.63**	**13**	**280**	**245**	**1.14**

Historic Future Urban Zones

Figure 3-4 and tables 3-11 and 3-12 show land annexed in Future Urban Zones in case study cities. As shown, 3,117 taxlots were created from 706 historic taxlots. Parcelization was more common in parcels over one acre and particularly common in parcels over two acres. Very little parcelization occurred in parcels less than one acre, but the amount of parcelization on small parcels was greater than historic Rural Residential zones. In sum, approximately 40 percent of the acreage was greater than 20 acres historically, while approximately 33 percent of parcels were between 5 and 20 acres.

Figure 3-4. Parcels Historically Zoned Future Urban Annexed between 1996 or 1999 and 2012, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties



Historic Parcels and 2014 Parcels for historic zoning generalized as "Future Urban." The data includes all parcels fully inside the UGB in 2012, which were annexed between 1999-2012 (with the exception of Bend, which uses 1996 as the beginning date.) Parcels without zoning information were excluded. This dataset includes historic parcels from Deschutes, Linn, Lane, Jackson and Marion counties.

As shown in Tables 3-11 and 3-12, nearly 3,500 parcels on 2,500 acres were annexed into city limits from Future Urban Zones. By 2014, 2,331 of these parcels developed. The number of parcels developed and density parallels urban density, but there were no clear trends by city size. As shown in Table 3-12, annexation of future urban parcels was unique to cities in Central Oregon and the Willamette Valley. The vast majority of parcels and acres annexed from Future Urban zones occurred in the Willamette Valley, and the density of development was similar in Central Oregon and the Willamette Valley. The density of land annexed and developed from Future Urban Zones was consistently higher than land annexed and developed in Rural Residential Zones.

Table 3-11. Parcels Historically Zoned Future Urban annexed between 1999-2012 in Current Future Urban Zones by City Size, Case Study Counties: Deschutes, Jackson, Linn, Lane, and Marion counties

	Annexed between 1996-2012						
	Total Annexed			Residential Parcels Developed between 1997-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	Number of Cities	Parcels	Unpro. Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres
<1,000	3	165	51.92	3	92	17.41	5.29
1,000-4,999	5	670	264.94	4	522	78.67	6.64
5,000-9,999	2	489	248.77	2	327	77.78	4.20
10,000-24,999	2	599	556.12	2	320	50.18	6.38
25,000-49,999	1	2	0.81	1	1	0.26	3.90
50,000 or more	3	1499	1421.52	3	1069	192.43	5.56
Total	**16**	**3,424**	**2,544**	**15**	**2,331**	**417**	**5.59**

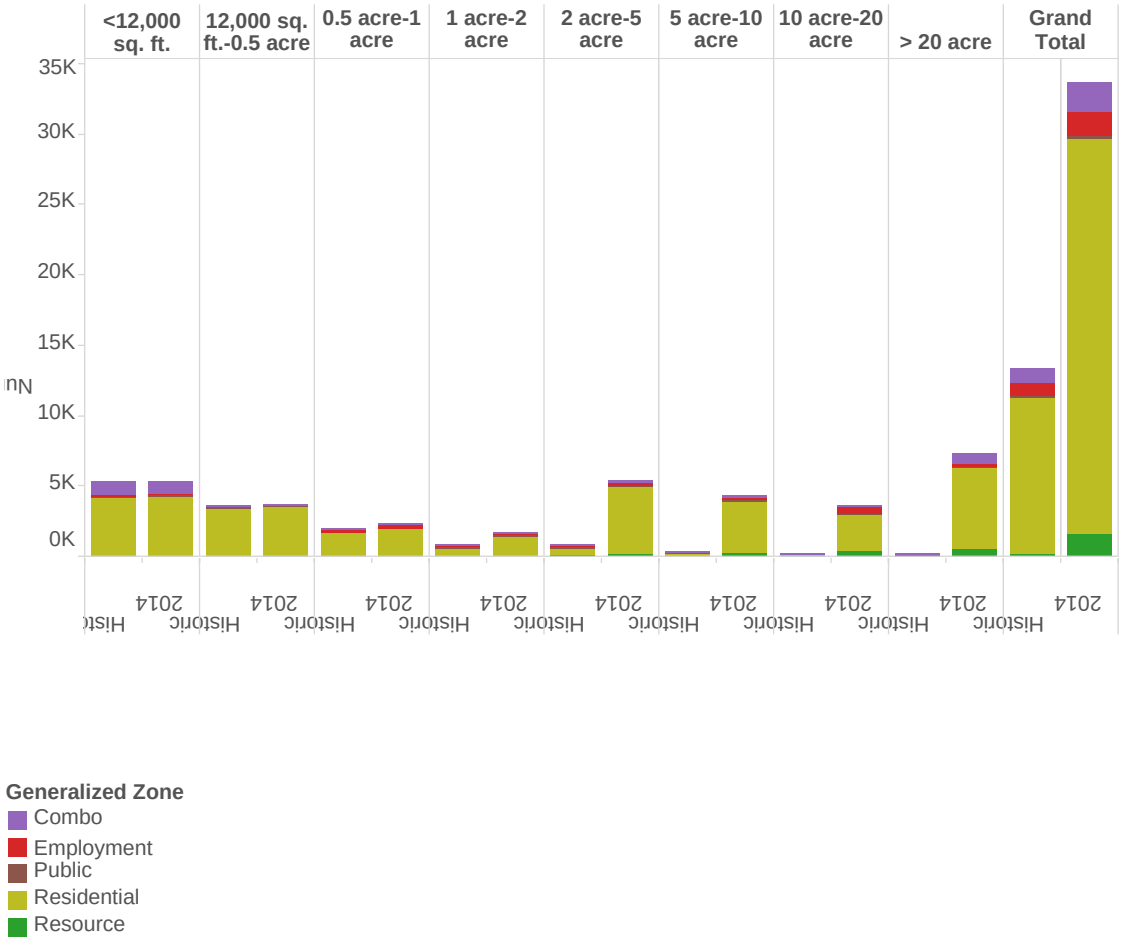
Table 3-12. Parcels Historically Zoned Future Urban annexed between 1999-2012 in Current Future Urban Zones by Region, Case Study Counties: Deschutes, Jackson, Linn, Lane, and Marion counties

	Annexed between 1996-2012						
	Total Annexed			Residential Parcels Developed between 1997-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	Number of Cities	Parcels	Unpro. Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres
Central Oregon	2	312	233.06	2	171	29.83	5.73
North Coastal Oregon	-	-	-	-	-	-	-
Northeast Oregon	-	-	-	-	-	-	-
South Coastal Oregon	-	-	-	-	-	-	-
Southeast Oregon	-	-	-	-	-	-	-
Southern Oregon	-	-	-	-	-	-	-
Willamette Valley	14	3112	2311.02	13	2160	386.89	5.58
Total	**16**	**3,424**	**2,544**	**15**	**2,331**	**417**	**5.59**

All Historic Zones

Figure 3-5 and Tables 3-13 and 3-14 show annexation across all zones across the time period. Figure 3-5 shows that greater rates of parcelization occurred in parcels over two acres. The vast majority of annexation occurred in historically residential zones, including Rural Residential and Future Urban.

Figure 3-5. Parcels Annexed between 1996 or 1999 and 2012, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties



Tables 3-13 and 3-14 show the density of annexed parcels versus parcels already inside city limits over the time period. As shown in Table 3-13, the density of annexed parcels was consistently higher than land already inside city limits across all city sizes. Consistent with trends in general density, density increases as city size increases. Nearly 60 percent of development occurred on land already in city limits but two-thirds of the acreage developed was on land already inside city limits, meaning land use inside existing city limits was much less efficient. Table 3-14 conveys trends across regions. Density was consistently higher across regions on land that was annexed. Density in the Willamette Valley, Southern Oregon and Central Oregon was higher than other regions.

Table 3-13. Parcels annexed between 1999-2012 in Current Future Urban Zones by City Size, Tier 3 Cities

Residential Parcels Developed between 1997-2014 (Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)

	Annexed after 1996			Inside CL in 1996		
City Size	**Parcels**	**Unpro. Acres**	**Parcels/ Acres**	**Parcels**	**Unpro. Acres**	**Parcels/ Acres**
<1,000	248	51.99	**4.77**	908	371.11	**2.45**
1,000-4,999	2,634	575.44	**4.58**	9,587	2,757.19	**3.48**
5,000-9,999	7,852	1,423.18	**5.52**	12,793	3,528.90	**3.63**
10,000-24,999	7,804	1,458.68	**5.35**	12,206	3,548.42	**3.44**
25,000-49,999	6,860	1,312.29	**5.23**	5,965	1,420.55	**4.20**
50,000 or more	22,905	4,089.90	**5.60**	24,738	6,059.21	**4.08**
Total	**48,303**	**8,911.49**	**5.42**	**66,197**	**17,685.37**	**3.74**

Table 3-14. Parcels annexed between 1999-2012 by Region, Tier 3 Cities

Residential Parcels Developed between 1997-2014 (Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)

	Annexed after 1996			Inside CL in 1996		
City Size	**Parcels**	**Unpro. Acres**	**Parcels/ Acres**	**Parcels**	**Unpro. Acres**	**Parcels/ Acres**
Central Oregon	14,780	2,722.97	**5.43**	7,677	2,185.73	**3.51**
North Coastal Oregon	601	140.75	**4.27**	4,430	914.98	**4.84**
Northeast Oregon	975	249.62	**3.91**	2,936	1,728.58	**1.70**
South Coastal Oregon	465	148.23	**3.14**	3,331	1,088.44	**3.06**
Southeast Oregon	323	105.99	**3.05**	1,722	779.45	**2.21**
Southern Oregon	8,574	1,628.69	**5.26**	9,613	2,298.41	**4.18**
Willamette Valley	22,585	3,915.24	**5.77**	36,488	8,689.78	**4.20**
Total	**48,303**	**8,911.49**	**5.42**	**66,197**	**17,685.37**	**3.74**

Current Rural Residential Zones

Tables 3-15 and 3-16 show existing Rural Residential land that was annexed to cities after 1996. Approximately 543 parcels on 495 acres were developed but only 48 of these parcels were developed after annexation. Density varied across cities but was higher in cities 5,000-9,999 and over 50,000 as well as Southern Oregon, because of development patterns in Talent and Medford.

Table 3-15. Parcels in current Rural Residential Zones annexed between 1999-2012 by City Size, Tier 3 Cities

	Annexed between 1996-2012						
	Total Annexed			Residential Parcels Developed between 1997-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	Number of Cities	Parcels	Unpro. Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres
<1,000	2	4	5.42	1	1	2.32	0.43
1,000-4,999	9	104	147.84	3	20	18.84	1.06
5,000-9,999	7	21	32.58	1	6	1.18	5.09
10,000-24,999	5	33	41.79	-	-	-	-
25,000-49,999	2	3	2.29	-	-	-	-
50,000 or more	1	378	265.01	1	21	9.10	2.31
Total	**26**	**543**	**494.92**	**6**	**48**	**31.44**	**1.53**

Table3-16. Parcels in current Rural Residential Zones annexed between 1999-2012 by Region, Tier 3 Cities

	Total Annexed			Residential Parcels Developed between 1997-2014 *(Includes Property Classification Farm, Forest, Multifamily, Residential and Tract)*			
City Size	Number of Cities	Parcels	Unpro. Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres
Central Oregon	1	1	0.89	-	-	-	-
North Coastal Oregon	-	-	-	-	-	-	-
Northeast Oregon	-	-	-	-	-	-	-
South Coastal Oregon	1	9	12	-	-	-	-
Southeast Oregon	-	-	-		-	-	-
Southern Oregon	9	448	328.99	3	38	12.28	**3.09**
Willamette Valley	15	85	153.09	3	10	19.16	**0.52**
Total	**26**	**543**	**494.92**	**6**	**48**	**31.44**	**1.53**

Current Future Urban Zones

As shown in Tables 3-17 and 3-18, very few parcels in existing Future Urban Zones were annexed and even fewer parcels were developed. Only 60 parcels were annexed and only three were developed. The densities ranged across regions and city size, but it is difficult to draw conclusions across such a small sample.

Table 3-17. Parcels in current Future Urban Zones annexed between 1999-2012 by City Size, Tier 3 Cities

	Annexed between 1996-2012						
	Total Annexed			Residential Parcels Developed between			
City Size	Number of Cities	Parcels	Unpro. Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres
<1,000	1	1	0.26	-	-	-	-
1,000-4,999	3	10	32.44	-	-	-	-
5,000-9,999	2	21	69.04	1	1	0.19	5.27
10,000-24,999	1	2	3.04	-	-	-	-
25,000-49,999	1	16	327.01	1	2	19.92	0.10
50,000 or more	1	10	2.70	-	-	-	-
Total	**9**	**60**	**434.49**	**2**	**3**	**20.11**	**5.37**

Table 3-18. Parcels in current Future Urban Zones annexed between 1999-2012 by Region, Tier 3 Cities

	Annexed between 1996-2012						
	Total Annexed			Residential Parcels Developed between			
City Size	Number of Cities	Parcels	Unpro. Acres	Number of Cities	Parcels	Unpro. Acres	Parcels/ Acres
Central Oregon	2	23	354.31	1	2	19.92	0.10
North Coastal Oregon	-	-	-	-	-	-	-
Northeast Oregon	-	-	-	-	-	-	-
South Coastal Oregon	-	-	-	-	-	-	-
Southeast Oregon	-	-	-	-	-	-	-
Southern Oregon	-	-	-	-	-	-	-
Willamette Valley	7	37	80.18	1	1	0.19	**5.27**
Total	**9**	**60**	**434.49**	**2**	**3**	**20.11**	**5.37**

Existing Unincorporated Land

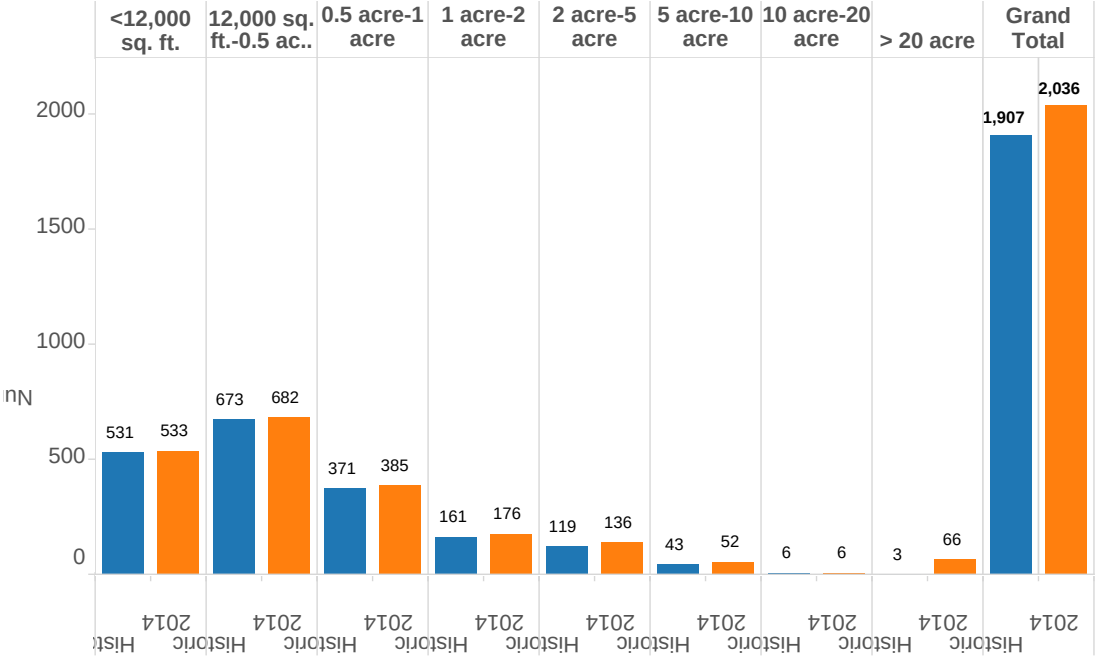
This section describes trends in parcelization, density and the rate of development on land that is currently unincorporated.

Historic Rural Residential Zones

Figures 3-6 through 3-19 convey parcelization, density and amount of development on historically zoned Rural Residential zones in the unincorporated portion of UGBs in case study cities. Figure 3-6 shows that little parcelization occurred in the incorporated areas and clearly shows that very few large parcels exist in historically rural residential zones. Only 129 parcels in total were created and the new parcels were distributed across size classes, though most occurred on large parcels.

Figures 3-7 and 3-8 show the density of development by city size and region over time. In general, the density of development in these zones fell over time with a drop occurring after the implementation of the Statewide Planning Program. On average, density ranged from 1.5 to 2 units per acre. No clear trends emerge by city size. Figure 3-8 shows trends by region. The South Coastal city (Florence) showed the highest density of development over time. Only three regions witnessed development in unincorporated historical Rural Residential areas: Willamette Valley, South Coastal and Southern Oregon. Figures 3-9 and 3-10 show the total amount of development by city size and region. The total amount of development spiked between 1990 and 1999, but that was driven by development in one city: Florence. The amount of development in other cities was very low.

Figure 3-6. Parcels in 2014 Unincorporated Land Historically Zoned Rural Residential, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties



Historic Parcels and 2014 Parcels for historic zoning generalized as "Rural Residential." The data includes all parcels fully inside the UGB in 2012, which are outside city limits and were not annexed between 1999-2012. Parcels without zoning information were excluded. This dataset includes historic parcels from Deschutes, Linn, Lane, Jackson and Marion counties.

Figure 3-7. Density of Parcels Developed in 2014 Unincorporated Land Historically Zoned Rural Residential by Decade, 1950-2014, by City Size, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties

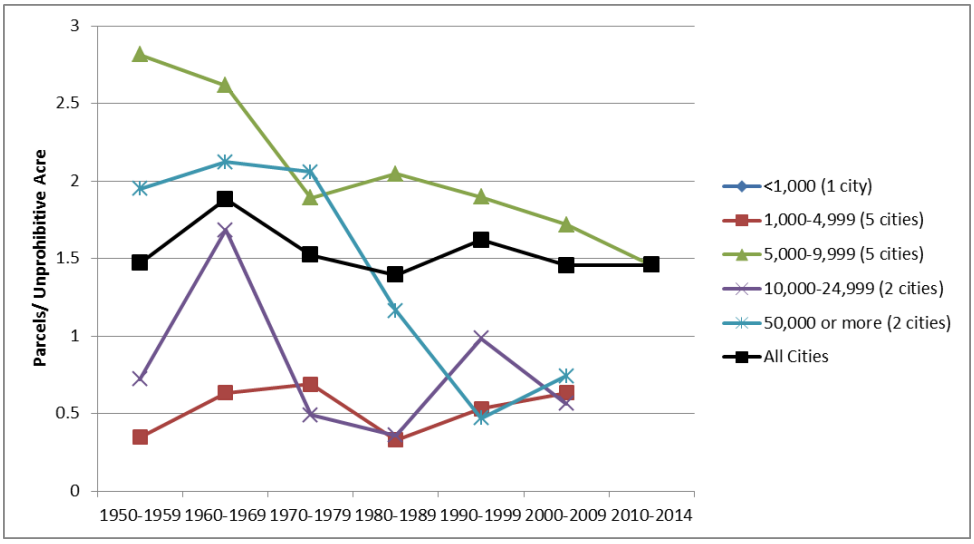


Figure 3-8. Density of Parcels Developed in 2014 Unincorporated Land Historically Zoned Rural Residential by Decade, 1950-2014, by Region, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties

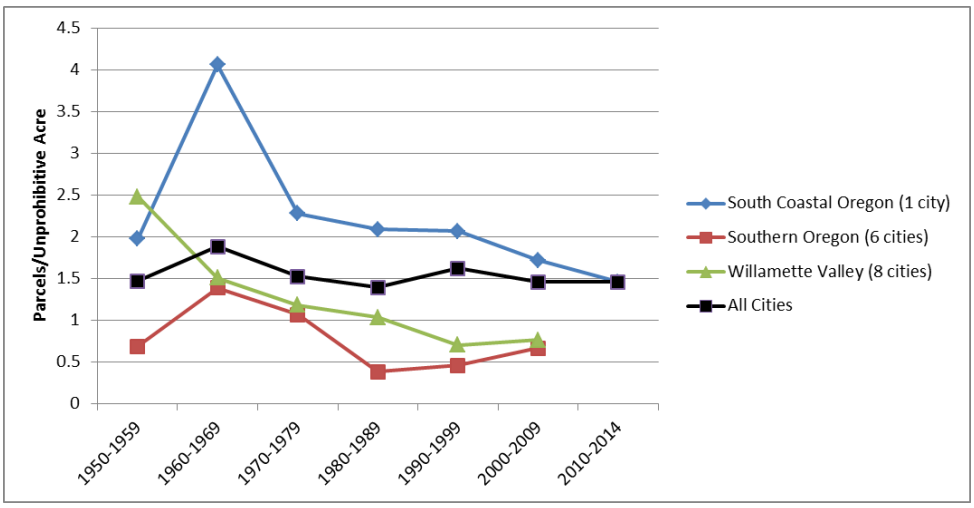


Figure 3-9: Number of Parcels Developed in 2014 Unincorporated Land Historically Zoned Rural Residential by Decade, 1950-2014, by City Size, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties

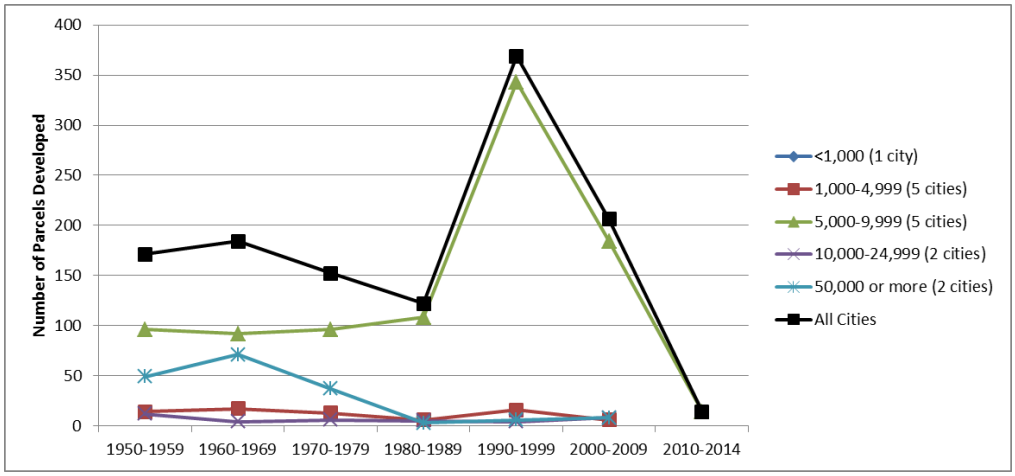
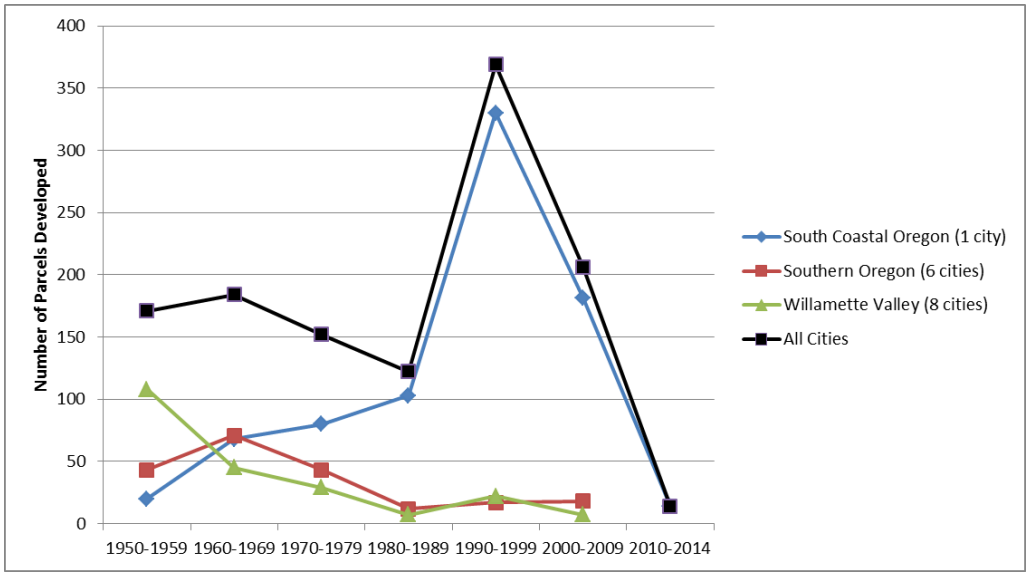


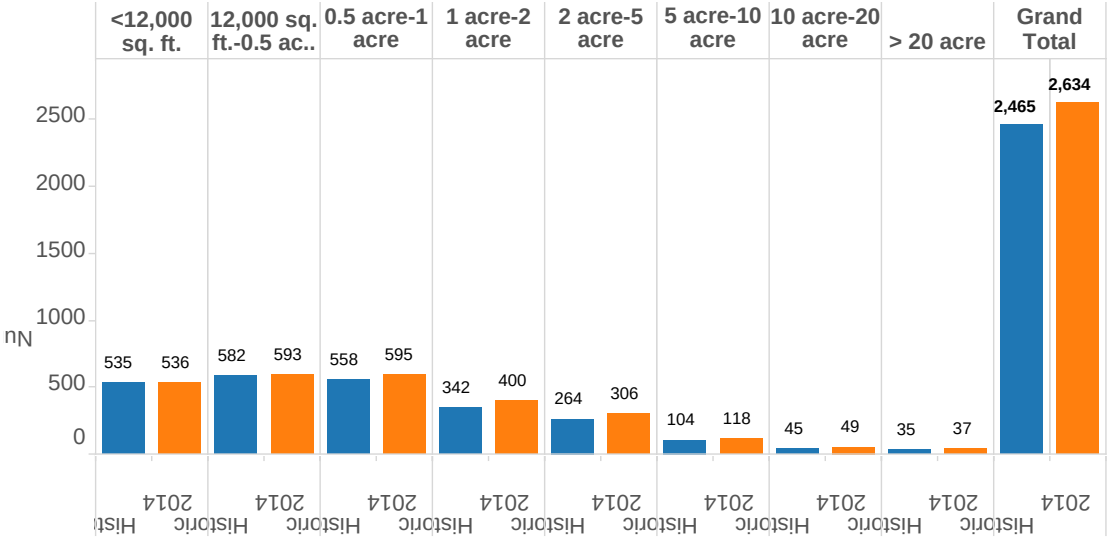
Figure 3-10. Number of Parcels Developed in 2014 Unincorporated Land Historically Zoned Rural Residential by Decade, 1950-2014, by Region, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties



Historic Future Urban Zones

Figures 3-11 through 3-15 convey parcelization, density and amount of development on historically zoned Future Urban zones in the unincorporated portion of UGBs in case study cities. Figure 3-11 shows that little parcelization occurred in the unincorporated areas historically Future Urban. Only 169 parcels in total were created and most new parcels were created on parcels from 1 to 5 acres in size. Few large parcels exist in the unincorporated areas of these zones.

Figure 3-11. Parcels in 2014 Unincorporated Land Historically Zoned Future Urban, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties



Historic Parcels and 2014 Parcels for historic zoning generalized as "Future Urban." The data includes all parcels fully inside the UGB in 2012, which are outside city limits and were not annexed between 1999-2012. Parcels without zoning information were excluded. Zoning was categorized by: Combo, Employment, Residential, Public and Resource. This dataset includes historic parcels from Deschutes, Linn, Lane, Jackson and Marion counties.

Figures 3-12 and 3-13 show the density of development by city size and region over time. In general, the density of development in historic Future Urban zones rose over time, particularly after 2000. Presumably, this land was rezoned and developed in the 2000s. On average, density ranged from 0.5 to 3 units per acre over time, with a drop in the 1980s and 1990s. No clear trends emerge by city size. Figure 3-13 shows trends by region. Development was driven by trends in the Willamette Valley which constituted nearly all development across time.

Figure 3-12. Density of Parcels Developed in 2014 Unincorporated Land Historically Zoned Future Urban by Decade, 1950-2014, by City Size, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties

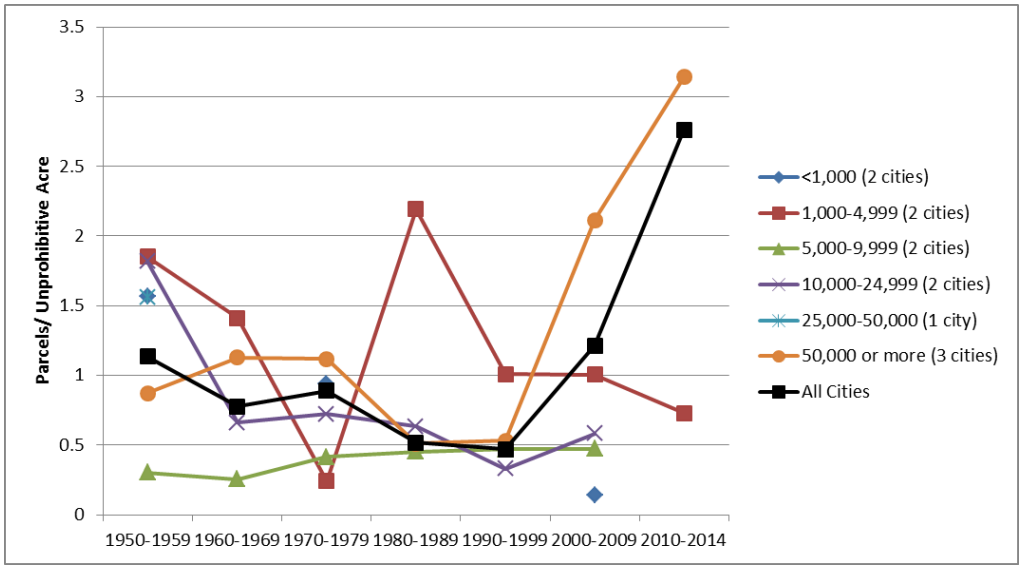
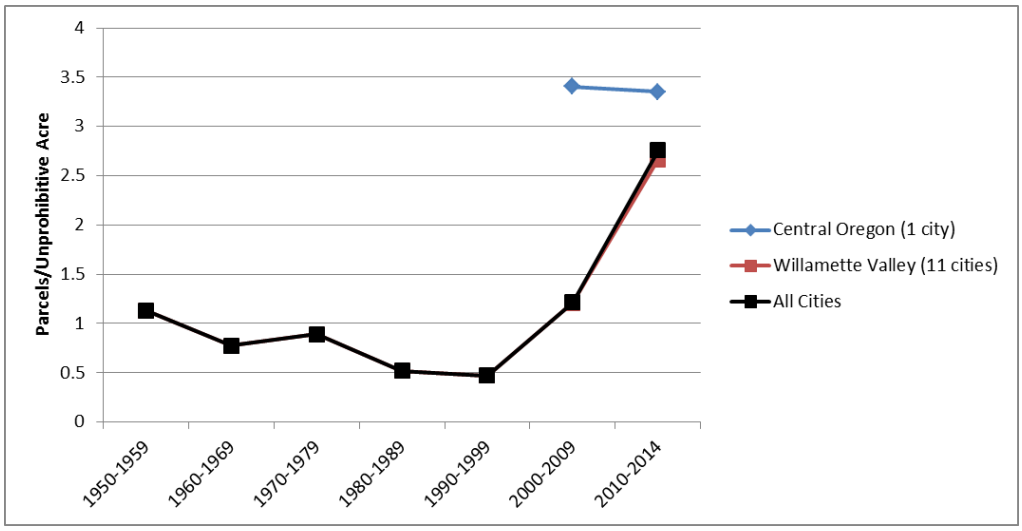


Figure 3-13. Density of Parcels Developed in 2014 Unincorporated Land Historically Zoned Future Urban by Decade, 1950-2014, by Region, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties



Figures 3-14 and 3-15 show total amount of development over time by city size and region. Most of the parcels developed were in large cities. Examining trends over time, the amount of developed fell in the 1980s and rose gradually and the 1990s and peaked in the 2000-2009 period, consistent with trends in density. Again, the Willamette Valley cities drive these trends.

Figure 3-14. Number of Parcels Developed in 2014 Unincorporated Land Historically Zoned Future Urban by Decade, 1950-2014, by City Size, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties

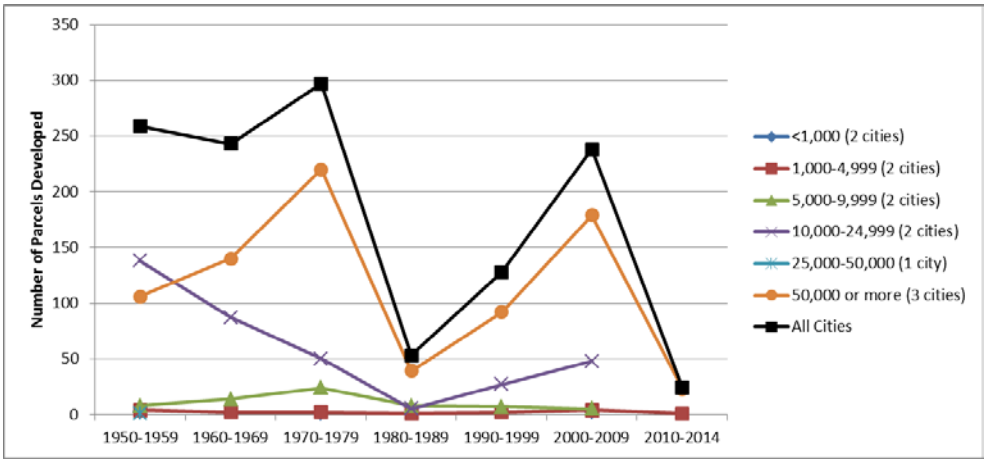
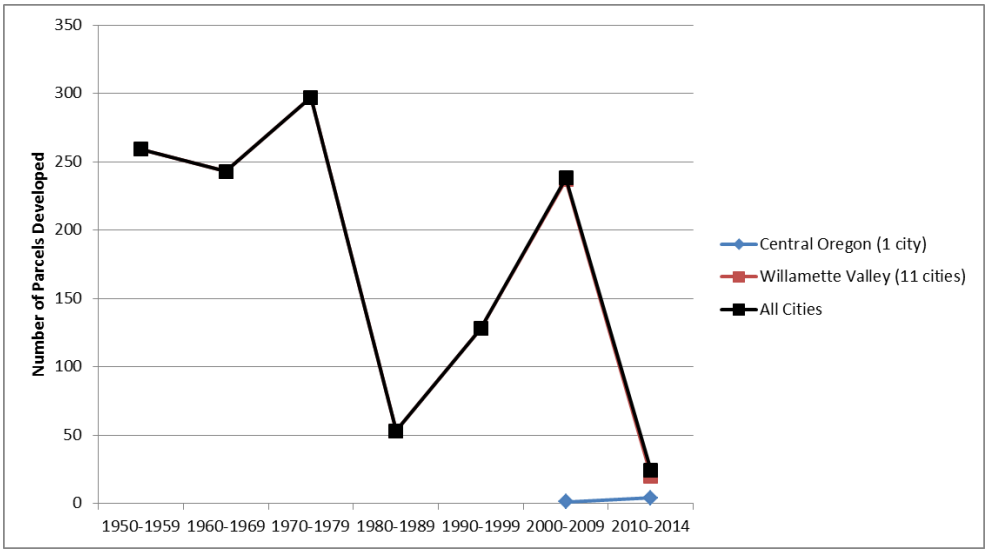


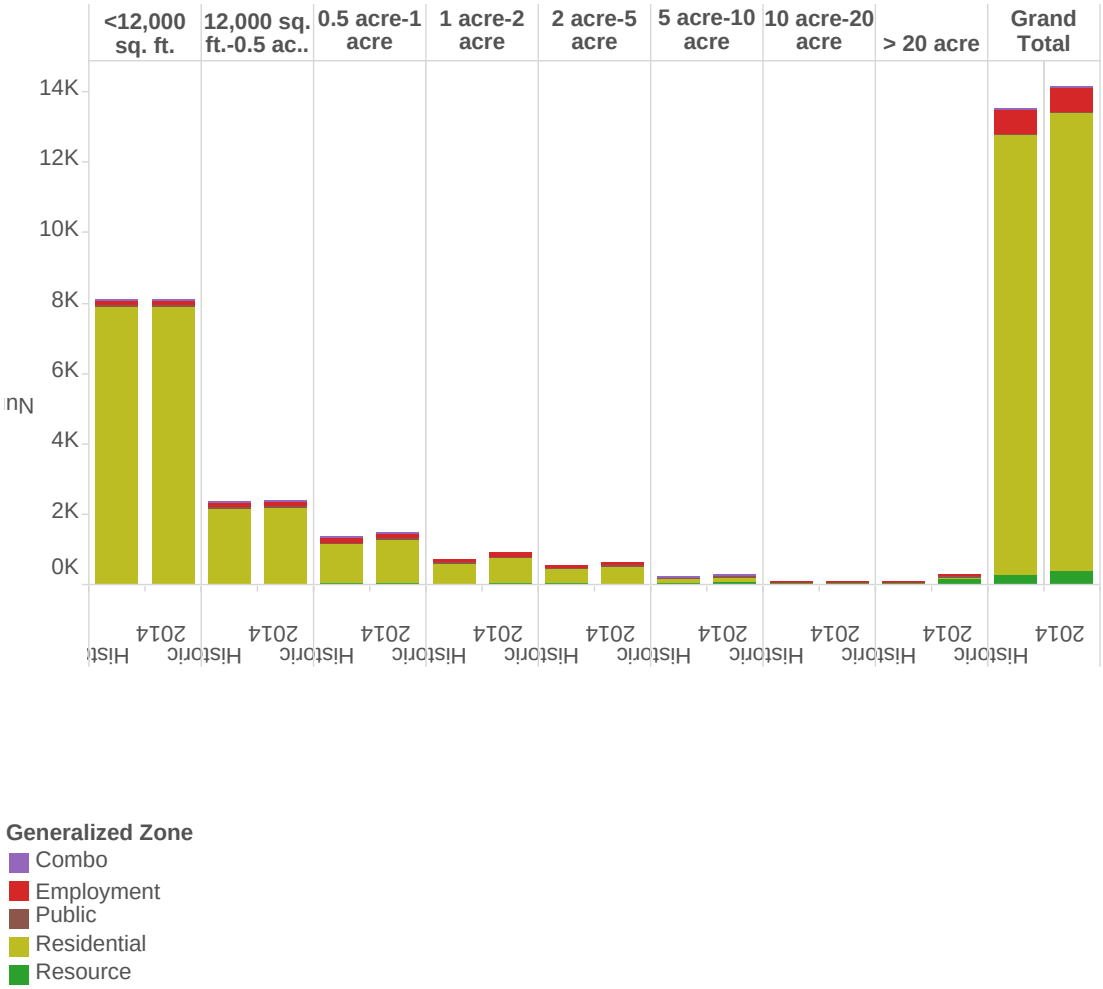
Figure 3-15. Number of Parcels Developed in 2014 Unincorporated Land Historically Zoned Future Urban by Decade, 1950-2014, by Region, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties



All Historic Zones

Figures 3-16 through 3-20 show trends in development in unincorporated areas across all regions. Figure 3-16 shows the total number of parcels by size class. In total, 658 new parcels were created in unincorporated areas. Residential development constitutes the majority of uses. Most of the new parcels were created on parcels over 20 acres in size, but the majority of parcels (60 percent) are less than 12,000 square feet.

Figure 3-16. Parcels in 2014 Unincorporated Land, Case Study Cities: Deschutes, Jackson, Linn, Lane, and Marion counties



Figures 3-17 and 3-18 show the density of development by city size and region. These graphics show a clear drop in density upon implementation of the Statewide Planning Program. Density in unincorporated areas dropped from about 2.5 units per acre to 1.2 units per acre on average between the 1970s and 1980s. Density in larger cities was generally higher before the 1980s but trends by city size are less consistent after the 1980s. In examining trends by region, most regions showed a drop in density in the 1980s, but the density remained above acreage in North Coastal and Southern Oregon with a significant increase in density in Southern Oregon unincorporated areas after 2000. This seems to be driven by development in two cities: Grants Pass and Roseburg.

Figure 3-17. Density of Parcels Developed in 2014 Unincorporated Land by Decade, 1950-2014, by City Size, Tier 3 Cities

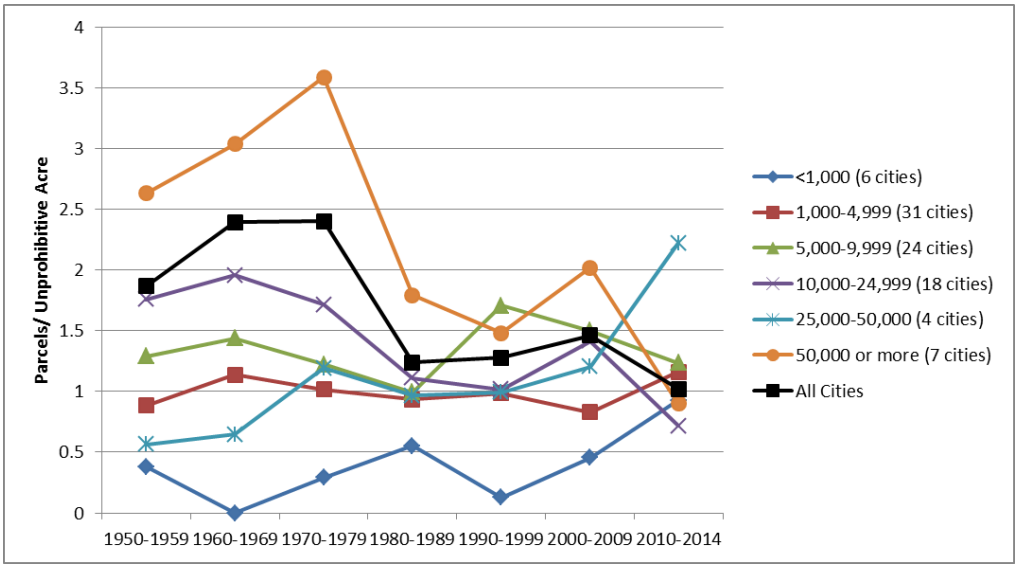
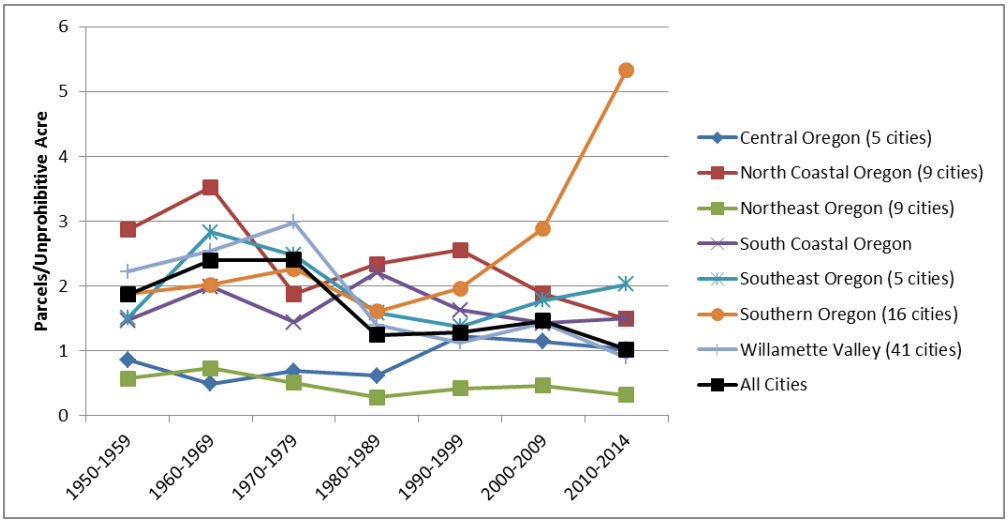


Figure 3-18. Density of Parcels Developed in 2014 Unincorporated Land by Decade, 1950-2014, by Region, Tier 3 Cities



Figures 3-19 and 3-20 show trends for the total number of parcels developed on unincorporated lands within UGBs between 1950 and 2014. Consistent with trends in density, there was a steep drop in total development in the 1980s. Development in large cities and the Willamette Valley far exceeded all other regions, driving the overall trends.

Figure 3-19. Number of Parcels Developed in 2014 Unincorporated Land by Decade, 1950-2014 by City Size, Tier 3 Cities

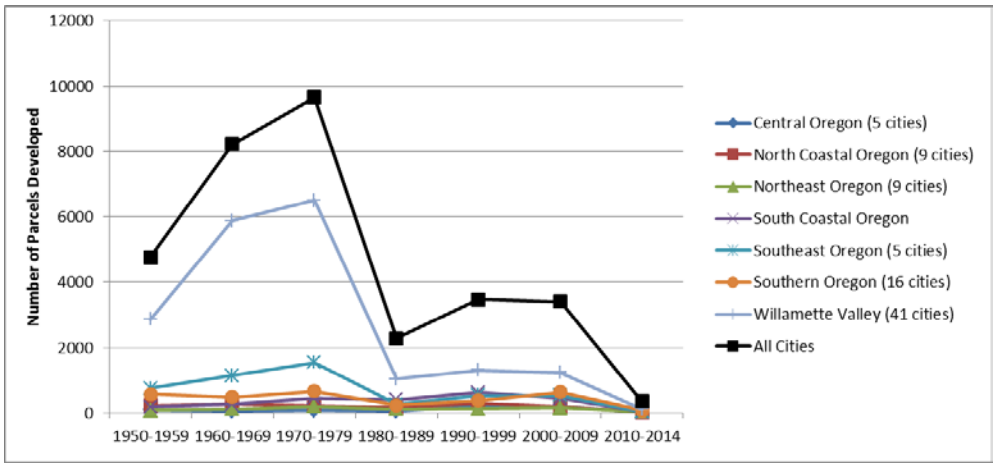
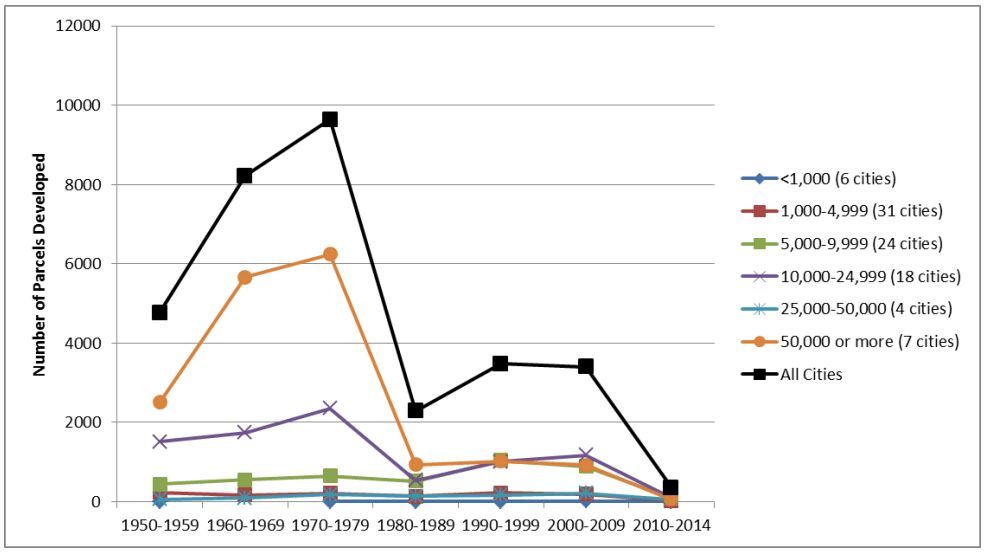


Figure 3-20. Number of Parcels Developed in 2014 Unincorporated Land by Decade, 1950-2014 by City Size , Tier 3 Cities



Current Rural Residential Zones

Figures 3-21 through 3-24 show the density of development by city size and region in current rural residential zones. The average density of development in current Rural Residential Zones has been low over time at under two units per acre for all cities with a spike in large cities (Albany and Medford) since 2010. On average,

density hovered between 0.5 and 1 unit per acre in these zones. Density in large cities has been generally higher than all other cities. It is interesting to note that only two large cities have existing rural residential zones inside UGBs. Examining trends by region, Southern Oregon, North Coastal Oregon and Southeast Oregon have showed higher than average densities in current Rural Residential Zones.

Figure 3-21. Density of Parcels Developed in 2014 Unincorporated Land in Current Rural Residential Zones, by Decade, 1950-2014, by City Size, Tier 3 Cities

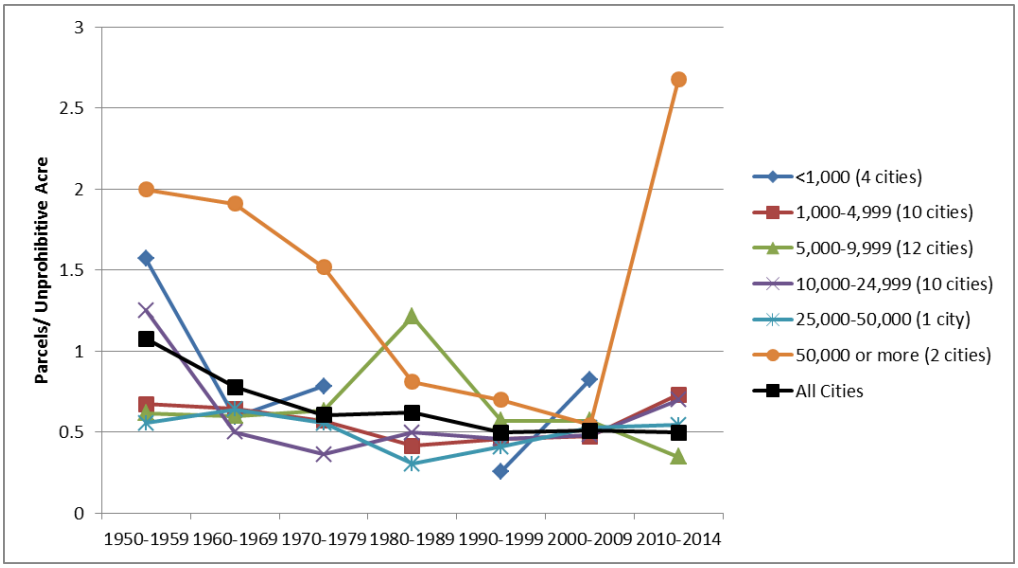
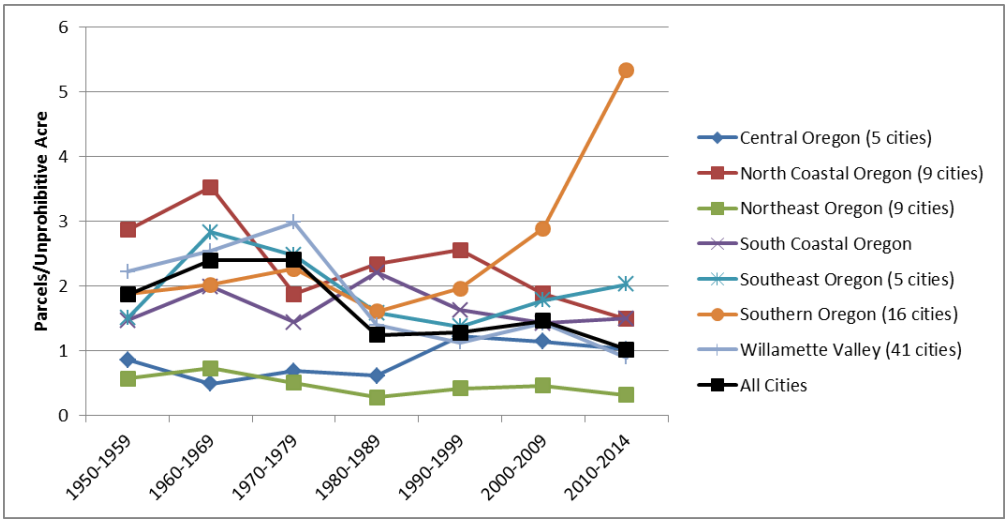


Figure 3-22. Density of Parcels Developed in 2014 Unincorporated Land in Current Rural Residential Zones, by Decade, 1950-2014, by Region, Tier 3 Cities



Figures 3-23 and 3-24 show trends in the total number of parcels developed. Consistent with previous trends, there was a clear drop off in development in

current Rural Residential zones in unincorporated areas of UGBs in the 1980s. Interestingly, the trends are driven by cities 5,000-50,000 rather than large cities. The Willamette Valley drove the trends by region, constituting the largest share of total development.

Figure 3-23. Number of Parcels Developed in 2014 Unincorporated Land Current Rural Residential Zones, 1950-2014 by City Size, Tier 3 Cities

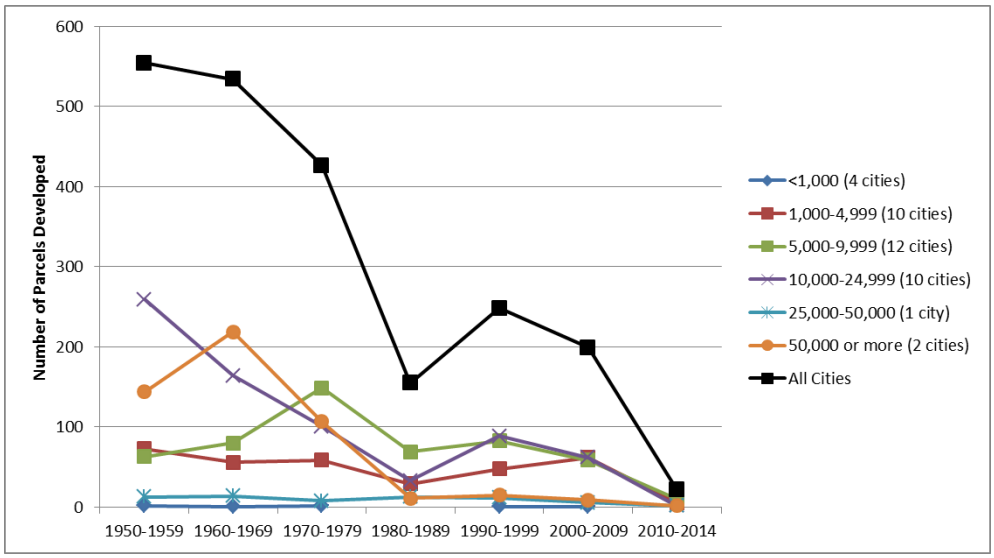
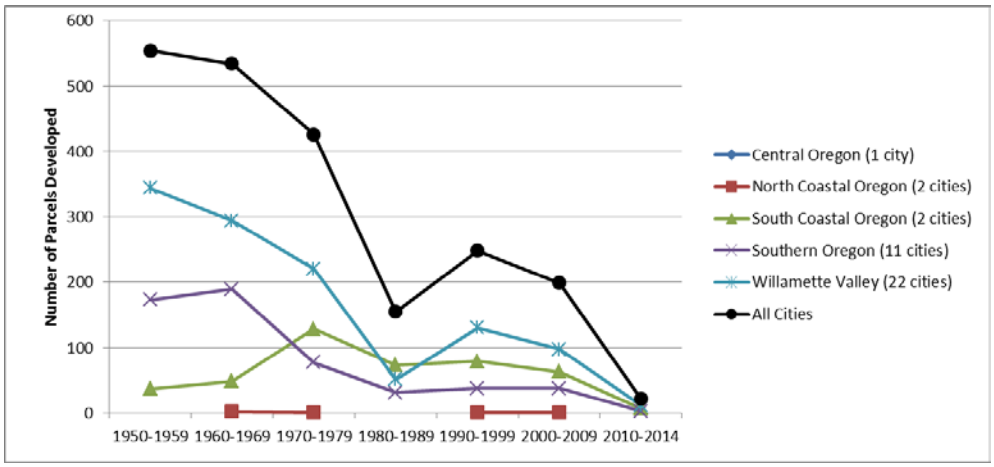


Figure 3-24. Number of Parcels Developed in 2014 Unincorporated Land Current Rural Residential Zones, 1950-2014 by Region, Tier 3 Cities



Current Future Urban Zones

Figures 3-25 through 3-28 show trends in density and total development for unincorporated areas currently zoned Future Urban. Density in land currently zoned Future Urban has averaged between 0.5 to 0.75 units per acre since the 1950s, but the trends are variable across region. Interesting, small cities (1,000-4,999) have showed higher densities than other size classes since the 1980s. Large cities (Bend and Salem) showed an increase in density since 2010. In examining

trends by region, only two regions showed this type of development in unincorporated future urban zones and density in the Willamette Valley cities exceeded density in Central Oregon cities (Bend and Redmond.)

Figure 3-25. Density of Parcels Developed in 2014, Unincorporated Land in Current Future Urban Zones, by Decade, 1950-2014, by City Size, Tier 3 Cities

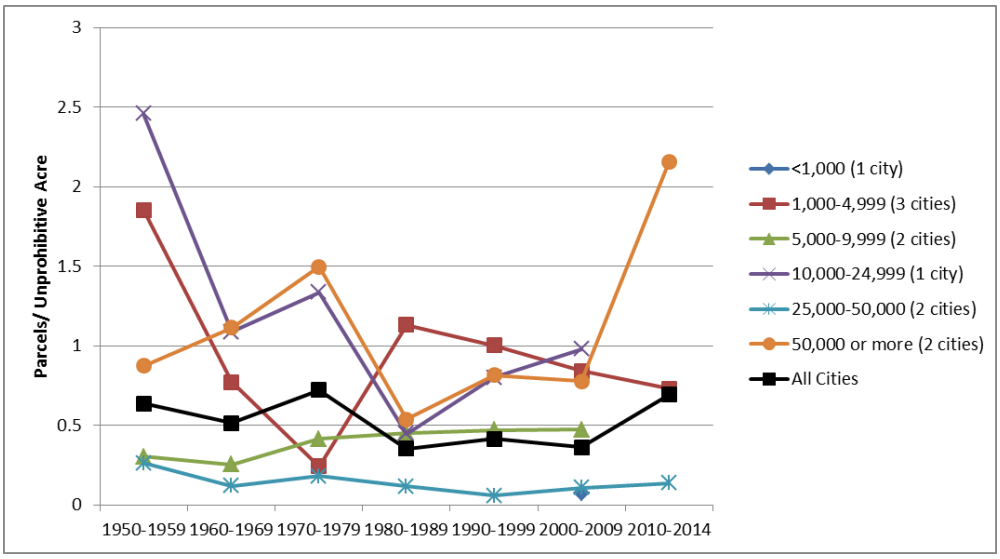
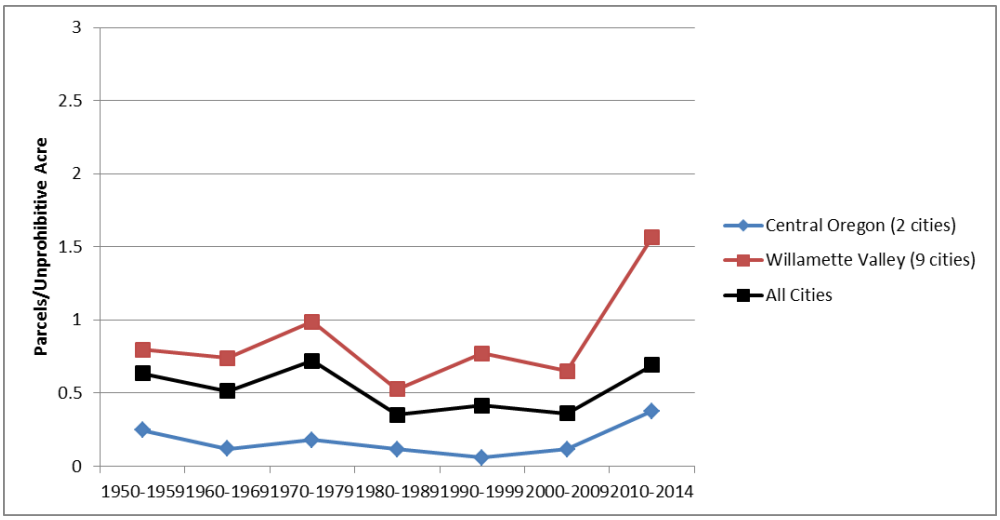


Figure 3-26. Density of Parcels Developed in 2014, Unincorporated Land in Current Future Urban Zones, by Decade, 1950-2014, by Region, Tier 3 Cities



Figures 3-27 and 3-28 show the total number of parcels developed by city and region by decade in unincorporated areas zoned Future Urban. Over time, the number of parcels developed fell in the 1980s with a slight increase in the 1990s and 2000s. Large cities and cities in the Willamette Valley drove the overall trends. More specifically, the unincorporated areas of Salem drive the trends shown in Figures 3-27 and 3-28.

Figure 3-27. Number of Parcels Developed in 2014 Unincorporated Land Current Future Urban Zones, 1950-2014 by City Size, Tier 3 Cities

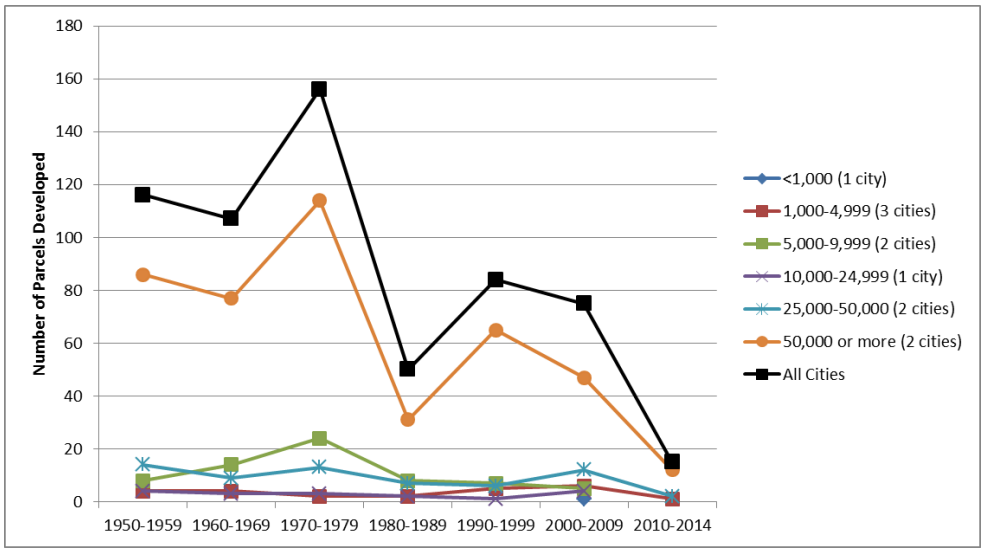
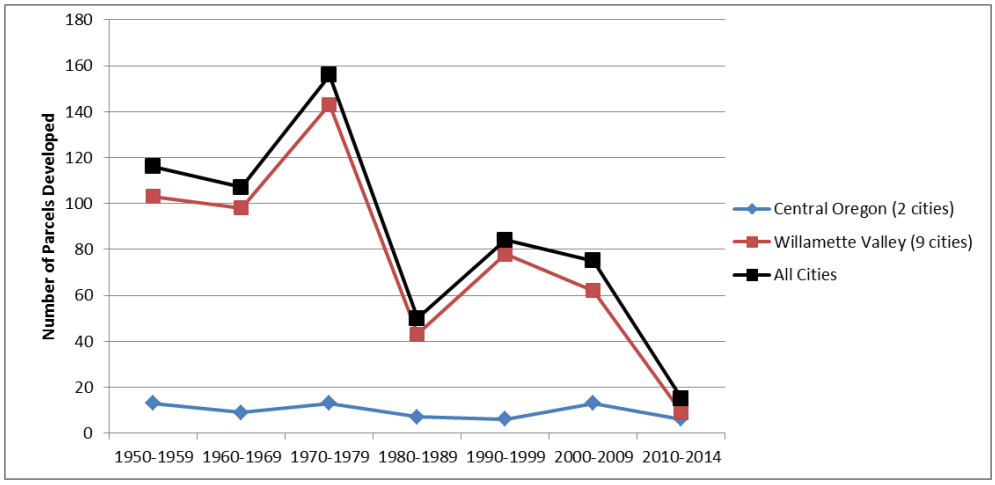


Figure 3-28. Number of Parcels Developed in 2014 Unincorporated Land Current Future Urban Zones, 1950-2014 by Region, Tier 3 Cities



APPENDIX A: LIST OF CITIES BY TIER

Table A: List of Cities by Tier

Tier 1 excludes counties where cities are small & not growing; Tier 2 excludes counties where cities are small & not growing and counties omitted from ORMAP; Tier 3 excludes counties where cities are small & not growing & counties for which we lack quality or accessible data; cities lacking single family residential parcels are also excluded. Note: 1=Yes

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Baker City		Baker County	Northeast Oregon	3	0	1	1	1
Greenhorn		Baker County	Northeast Oregon	1	1	0	0	0
Haines		Baker County	Northeast Oregon	1	1	0	0	0
Halfway		Baker County	Northeast Oregon	1	1	0	0	0
Huntington		Baker County	Northeast Oregon	1	1	0	0	0
Richland		Baker County	Northeast Oregon	1	1	0	0	0
Sumpter		Baker County	Northeast Oregon	1	0	1	1	1
Unity		Baker County	Northeast Oregon	1	1	0	0	0
Adair Village		Benton County	Willamette Valley	1	0	1	1	1
Corvallis		Benton County	Willamette Valley	6	0	1	1	1
Monroe		Benton County	Willamette Valley	1	0	1	1	1
Philomath		Benton County	Willamette Valley	2	0	1	1	1
Albany	1	Benton & Linn County	Willamette Valley	6	0	1	1	1
Barlow		Clackamas County	Willamette Valley	1	1	0	0	0
Canby		Clackamas County	Willamette Valley	4	0	1	1	1
Estacada		Clackamas County	Willamette Valley	2	0	1	1	1

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Molalla		Clackamas County	Willamette Valley	3	0	1	1	1
Sandy		Clackamas County	Willamette Valley	3	0	1	1	1
Astoria		Clatsop County	North Coastal Oregon	3	0	1	1	1
Cannon Beach		Clatsop County	North Coastal Oregon	2	0	1	1	1
Gearhart		Clatsop County	North Coastal Oregon	2	0	1	1	1
Seaside		Clatsop County	North Coastal Oregon	3	0	1	1	1
Warrenton		Clatsop County	North Coastal Oregon	3	0	1	1	1
Clatskanie		Columbia County	Willamette Valley	2	1	0	0	0
Columbia City		Columbia County	Willamette Valley	2	0	1	1	1
Prescott		Columbia County	Willamette Valley	1	1	0	0	0
Rainier		Columbia County	Willamette Valley	2	1	0	0	0
Scappoose		Columbia County	Willamette Valley	3	0	1	1	1
St Helens		Columbia County	Willamette Valley	4	0	1	1	1
Vernonia		Columbia County	Willamette Valley	2	1	0	0	0
Bandon		Coos County	South Coastal Oregon	2	0	1	1	1
Coos Bay		Coos County	South Coastal Oregon	4	0	1	1	1
Coquille		Coos County	South Coastal Oregon	2	1	0	0	0
Lakeside		Coos County	South Coastal Oregon	2	1	0	0	0

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Myrtle Point		Coos County	South Coastal Oregon	2	1	0	0	0
North Bend		Coos County	South Coastal Oregon	3	0	1	1	1
Powers		Coos County	South Coastal Oregon	1	1	0	0	0
Prineville		Crook County	Central Oregon	3	0	1	1	1
Brookings		Curry County	South Coastal Oregon	3	0	1	1	1
Gold Beach		Curry County	South Coastal Oregon	2	0	1	1	1
Port Orford		Curry County	South Coastal Oregon	2	1	0	0	0
Bend		Deschutes County	Central Oregon	6	0	1	1	1
Redmond		Deschutes County	Central Oregon	5	0	1	1	1
Sisters		Deschutes County	Central Oregon	2	0	1	1	1
Canyonville		Douglas County	Southern Oregon	2	0	1	1	1
Drain		Douglas County	Southern Oregon	2	1	0	0	0
Elkton		Douglas County	Southern Oregon	1	0	1	1	1
Glendale		Douglas County	Southern Oregon	1	0	1	1	1
Myrtle Creek		Douglas County	Southern Oregon	2	1	0	0	0
Oakland		Douglas County	Southern Oregon	1	1	0	0	0
Reedsport		Douglas County	South Coastal Oregon	2	1	0	0	0
Riddle		Douglas County	Southern Oregon	2	1	0	0	0
Roseburg		Douglas County	Southern Oregon	4	0	1	1	1

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Sutherlin		Douglas County	Southern Oregon	3	0	1	1	1
Winston		Douglas County	Southern Oregon	3	0	1	1	1
Yoncalla		Douglas County	Southern Oregon	2	0	1	1	1
Arlington		Gilliam County	Northeast Oregon	1	0	0	0	0
Condon		Gilliam County	Northeast Oregon	1	1	0	0	0
Lone Rock		Gilliam County	Northeast Oregon	1	0	0	0	0
Canyon City		Grant County	Northeast Oregon	1	1	0	0	0
Dayville		Grant County	Northeast Oregon	1	1	0	0	0
Granite		Grant County	Northeast Oregon	1	0	0	0	0
John Day		Grant County	Northeast Oregon	2	1	0	0	0
Long Creek		Grant County	Northeast Oregon	1	1	0	0	0
Monument		Grant County	Northeast Oregon	1	1	0	0	0
Mt Vernon		Grant County	Northeast Oregon	1	1	0	0	0
Prairie City		Grant County	Northeast Oregon	1	1	0	0	0
Seneca		Grant County	Northeast Oregon	1	1	0	0	0
Burns		Harney County	Southeast Oregon	2	1	0	0	0
Hines		Harney County	Southeast Oregon	2	1	0	0	0
Cascade Locks		Hood River County	Central Oregon	2	1	0	0	0
Hood River		Hood River County	Central Oregon	3	0	1	1	1
Ashland		Jackson County	Southern Oregon	4	0	1	1	1
Butte Falls		Jackson County	Southern Oregon	1	1	0	0	0

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Central Point		Jackson County	Southern Oregon	4	0	1	1	1
Eagle Point		Jackson County	Southern Oregon	3	0	1	1	1
Gold Hill		Jackson County	Southern Oregon	2	1	0	0	0
Jacksonville		Jackson County	Southern Oregon	2	0	1	1	1
Medford		Jackson County	Southern Oregon	6	0	1	1	1
Phoenix		Jackson County	Southern Oregon	2	0	1	1	1
Rogue River		Jackson County	Southern Oregon	2	1	0	0	0
Shady Cove		Jackson County	Southern Oregon	2	0	1	1	1
Talent		Jackson County	Southern Oregon	3	0	1	1	1
Culver		Jefferson County	Central Oregon	2	0	1	1	0
Madras		Jefferson County	Central Oregon	3	0	1	1	0
Metolius		Jefferson County	Central Oregon	1	0	1	1	0
Cave Junction		Josephine County	Southern Oregon	2	0	1	1	1
Grants Pass		Josephine County	Southern Oregon	5	0	1	1	1
Bonanza		Klamath County	Southeast Oregon	1	0	1	1	1
Chiloquin		Klamath County	Southeast Oregon	1	1	0	0	0
Klamath Falls		Klamath County	Southeast Oregon	4	0	1	1	1
Malin		Klamath County	Southeast Oregon	1	1	0	0	0
Merrill		Klamath County	Southeast Oregon	1	1	0	0	0
Lakeview		Lake County	Southeast Oregon	2	1	0	0	0
Paisley		Lake County	Southeast Oregon	1	1	0	0	0
Coburg		Lane County	Willamette Valley	2	0	1	1	1

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Cottage Grove		Lane County	Willamette Valley	3	0	1	1	1
Creswell		Lane County	Willamette Valley	2	0	1	1	1
Dunes City		Lane County	South Coastal Oregon	2	1	0	0	0
Eugene		Lane County	Willamette Valley	6	0	1	1	1
Florence		Lane County	South Coastal Oregon	3	0	1	1	1
Junction City		Lane County	Willamette Valley	3	0	1	1	1
Lowell		Lane County	Willamette Valley	2	0	1	1	1
Oakridge		Lane County	Willamette Valley	2	1	0	0	0
Springfield		Lane County	Willamette Valley	6	0	1	1	1
Veneta		Lane County	Willamette Valley	2	0	1	1	1
Westfir		Lane County	Willamette Valley	1	1	0	0	0
Depoe Bay		Lincoln County	North Coastal Oregon	2	0	1	1	1
Lincoln City		Lincoln County	North Coastal Oregon	3	0	1	1	1
Newport		Lincoln County	North Coastal Oregon	4	0	1	1	1
Siletz		Lincoln County	North Coastal Oregon	2	1	0	0	0
Toledo		Lincoln County	North Coastal Oregon	2	1	0	0	0
Waldport		Lincoln County	North Coastal Oregon	2	0	1	1	1
Yachats		Lincoln County	North Coastal Oregon	1	0	1	1	1

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Gates	1	Linn & Marion County	Willamette Valley	1	1	0	0	0
Brownsville		Linn County	Willamette Valley	2	0	1	1	1
Halsey		Linn County	Willamette Valley	1	0	1	1	1
Harrisburg		Linn County	Willamette Valley	2	0	1	1	1
Lebanon		Linn County	Willamette Valley	4	0	1	1	1
Lyons		Linn County	Willamette Valley	2	0	1	1	1
Millersburg		Linn County	Willamette Valley	2	0	1	1	1
Scio		Linn County	Willamette Valley	1	0	1	1	1
Sodaville		Linn County	Willamette Valley	1	0	1	1	1
Sweet Home		Linn County	Willamette Valley	3	0	1	1	1
Tangent		Linn County	Willamette Valley	2	0	1	1	1
Waterloo		Linn County	Willamette Valley	1	0	1	1	1
Idanha	1	Linn& Marion County	Willamette Valley	1	1	0	0	0
Mill City	1	Linn& Marion County	Willamette Valley	2	1	0	0	0
Adrian		Malheur County	Southeast Oregon	1	0	1	1	1
Jordan Valley		Malheur County	Southeast Oregon	1	1	0	0	0
Nyssa		Malheur County	Southeast Oregon	2	0	1	1	1
Ontario		Malheur County	Southeast Oregon	4	0	1	1	1
Vale		Malheur County	Southeast Oregon	2	0	1	1	1
Aumsville		Marion County	Willamette Valley	2	0	1	1	1
Aurora		Marion County	Willamette Valley	1	0	1	1	1

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Detroit		Marion County	Willamette Valley	1	1	0	0	0
Donald		Marion County	Willamette Valley	1	0	1	1	1
Gervais		Marion County	Willamette Valley	1	0	1	1	1
Hubbard		Marion County	Willamette Valley	2	0	1	1	1
Jefferson		Marion County	Willamette Valley	2	0	1	1	1
Keizer		Marion County	Willamette Valley	5	0	1	1	1
Mt Angel		Marion County	Willamette Valley	2	1	0	0	0
Scotts Mills		Marion County	Willamette Valley	1	0	1	1	1
Silverton		Marion County	Willamette Valley	3	0	1	1	1
St Paul		Marion County	Willamette Valley	1	0	1	1	1
Stayton		Marion County	Willamette Valley	3	0	1	1	1
Sublimity		Marion County	Willamette Valley	2	0	1	1	1
Turner		Marion County	Willamette Valley	2	0	1	1	1
Woodburn		Marion County	Willamette Valley	4	0	1	1	1
Salem	1	Marion& Polk County	Willamette Valley	6	0	1	1	1
Boardman		Morrow County	Northeast Oregon	2	0	1	0	0
Heppner		Morrow County	Northeast Oregon	2	1	0	0	0
Ione		Morrow County	Northeast Oregon	1	0	1	0	0
Irrigon		Morrow County	Northeast Oregon	2	0	1	0	0
Lexington		Morrow County	Northeast Oregon	1	1	0	0	0
Willamina	1	Polk &Yamhill County	Willamette Valley	1	1	0	0	0

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Dallas		Polk County	Willamette Valley	4	0	1	1	1
Falls City		Polk County	Willamette Valley	1	1	0	0	0
Independence		Polk County	Willamette Valley	3	0	1	1	1
Monmouth		Polk County	Willamette Valley	3	0	1	1	1
Grass Valley		Sherman County	Northeast Oregon	1	1	0	0	0
Moro		Sherman County	Northeast Oregon	1	1	0	0	0
Rufus		Sherman County	Northeast Oregon	1	1	0	0	0
Wasco		Sherman County	Northeast Oregon	1	1	0	0	0
Bay City		Tillamook County	North Coastal Oregon	2	0	1	1	1
Garibaldi		Tillamook County	North Coastal Oregon	1	1	0	0	0
Manzanita		Tillamook County	North Coastal Oregon	1	1	0	0	0
Nehalem		Tillamook County	North Coastal Oregon	1	1	0	0	0
Rockaway Beach		Tillamook County	North Coastal Oregon	2	0	1	1	0
Tillamook		Tillamook County	North Coastal Oregon	2	1	1	1	1
Wheeler		Tillamook County	North Coastal Oregon	1	0	1	1	0
Adams		Umatilla County	Northeast Oregon	1	0	1	1	1
Athena		Umatilla County	Northeast Oregon	2	1	0	0	0
Echo		Umatilla County	Northeast Oregon	1	0	1	1	1
Helix		Umatilla County	Northeast Oregon	1	0	1	1	1

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Hermiston		Umatilla County	Northeast Oregon	4	0	1	1	1
Milton-Freewater		Umatilla County	Northeast Oregon	3	0	1	1	1
Pendleton		Umatilla County	Northeast Oregon	4	0	1	1	1
Pilot Rock		Umatilla County	Northeast Oregon	2	1	0	0	0
Stanfield		Umatilla County	Northeast Oregon	2	0	1	1	1
Ukiah		Umatilla County	Northeast Oregon	1	1	0	0	0
Umatilla		Umatilla County	Northeast Oregon	3	0	1	1	1
Weston		Umatilla County	Northeast Oregon	1	1	0	0	0
Cove		Union County	Northeast Oregon	1	1	0	0	0
Elgin		Union County	Northeast Oregon	2	1	0	0	0
Imbler		Union County	Northeast Oregon	1	1	0	0	0
Island City		Union County	Northeast Oregon	2	0	1	1	1
La Grande		Union County	Northeast Oregon	4	0	1	1	1
North Powder		Union County	Northeast Oregon	1	1	0	0	0
Summerville		Union County	Northeast Oregon	1	1	0	0	0
Union		Union County	Northeast Oregon	2	1	0	0	0
Enterprise		Wallowa County	Northeast Oregon	2	1	0	0	0
Joseph		Wallowa County	Northeast Oregon	2	1	0	0	0
Lostine		Wallowa County	Northeast Oregon	1	1	0	0	0
Wallowa		Wallowa County	Northeast Oregon	1	1	0	0	0
Antelope		Wasco County	Central Oregon	1	0	1	1	1
Dufur		Wasco County	Central Oregon	1	1	0	0	0

City	Split by County	County	Region	Population Class	2012 Population <5,000 and Avg. Annual Growth <1%, 1993-2012	Tier 1	Tier 2	Tier 3
Maupin		Wasco County	Central Oregon	1	1	0	0	0
Mosier		Wasco County	Central Oregon	1	0	1	1	1
Shaniko		Wasco County	Central Oregon	1	0	1	1	1
The Dalles		Wasco County	Central Oregon	4	0	1	1	1
Banks		Washington County	Willamette Valley	2	0	1	1	1
Gaston		Washington County	Willamette Valley	1	1	0	0	0
North Plains		Washington County	Willamette Valley	2	0	1	1	1
Fossil		Wheeler County	Northeast Oregon	1	1	0	0	0
Mitchell		Wheeler County	Northeast Oregon	1	1	0	0	0
Spray		Wheeler County	Northeast Oregon	1	1	0	0	0
Amity		Yamhill County	Willamette Valley	2	0	1	1	1
Carlton		Yamhill County	Willamette Valley	2	0	1	1	1
Dayton		Yamhill County	Willamette Valley	2	0	1	1	1
Dundee		Yamhill County	Willamette Valley	2	0	1	1	1
Lafayette		Yamhill County	Willamette Valley	2	0	1	1	1
McMinnville		Yamhill County	Willamette Valley	5	0	1	1	1
Newberg		Yamhill County	Willamette Valley	4	0	1	1	1
Sheridan		Yamhill County	Willamette Valley	3	0	1	1	1
Yamhill		Yamhill County	Willamette Valley	2	0	1	1	1
Totals (out of 216 cities)					84	130	127	122

APPENDIX B: METHODOLOGY

This appendix briefly describes the methodology for spatial data analysis and lists data sources and dates of historic data for case study counties and cities. Additionally, this appendix briefly describes processing steps.

Methods

Study Criteria

The first step in this process was establishing a set of criteria, and an associated method, to identify lands that to include in the analysis. We include land in three categories: (1) land added to UGBs during the study period; (2) land annexed between 1996-2012; and (3) land in 2012 unincorporated areas. Within these three geographies, we examine several indicators for several zoning categories: parcelization, residential density, and new development in each of these geographies. We classify data based on zoning categories, focusing on historic and present Rural Residential Zones, Future Urban Zones, and broad generalized zoning categories.

Identifying Lands That Meet Study Criteria

We used state and county data sources to assemble databases and categorize land by geography and zoning category. We used 1999 and 2012 UGB layers to identify land added to UGBs. We used 1996, 1999 and 2012 city limits to identify when land was annexed. We used 2012 city limits data to identify parcels in unincorporated areas. County taxlots data serves as our underlying data source for information about density and parcels developed.

We used DLCD's Statewide Zoning Layer to identify current Rural Residential and Future Urban Zones. For case study jurisdictions in Deschutes, Jackson, Lane, Linn and Marion counties, we used county zoning from 1999-2002 to identify historic Rural Residential and Future Urban Zones. Zoning cross-walk and generalization tables are in Appendix C.

Cities included in Historic Analysis (with Zoning)

Deschutes County

- Bend
- Redmond
- Sisters

Jackson County

- Ashland
- Central Point
- Eagle Point
- Jacksonville
- Medford
- Phoenix
- Shady Cove
- Talent

Lane County

- Coburg
- Cottage Grove
- Creswell
- Florence
- Junction City
- Lowell
- Veneta

Linn County

- Albany
- Brownsville
- Halsey
- Harrisburg
- Lebanon
- Lyons
- Millersburg
- Scio
- Sodaville
- Sweet Home
- Tangent
- Waterloo

Marion County

- Aumsville
- Aurora
- Donald
- Gervais
- Hubbard
- Jefferson
- Keizer
- Salem
- Scotts Mills
- Silverton
- St Paul
- Stayton
- Sublimity
- Turner
- Woodburn

Historic Data by County

Deschutes County

- Date 1999
- Zoning included as feature class
  - Taxlot centroid spatially joined to zoning feature class to obtain zone
- Spatial analysis performed using 1996 city limits

Jackson County

- Date 2000
- Zoning included as feature class
  - Taxlot centroid spatially joined to zoning feature class to obtain zone
- Spatial analysis performed using 1999 city limits

Lane County

- Dates 2001 (County) and 2002 (Metro – From Library)
- Zoning included in taxlot data
  - Zoning table with descriptions
- Spatial analysis performed using 1999 city limits

Linn County

- Date 2001
- Zoning included as feature class
  - Taxlot centroid spatially joined to zoning feature class to obtain zone
- Spatial analysis performed using 1999 city limits

Marion County

- Date 2002
- Zoning included as feature class
  - Taxlot centroid spatially joined to zoning feature class to obtain zone
- Spatial analysis performed using 1999 city limits

Processing Steps

Steps to adjust for projection issues between historic and current lots (note: Deschutes county is the only county that aligned perfectly and did not use this method):

1. Join 2012 lots to historic lots using the taxlot # attribute
2. Calculate the historic taxlot fields in the current taxlot feature class
3. Create centroids for the 2012 lots that did not join in the previous steps
4. Spatially join these to the historic lots using the setting for closest and analyzing lots 100ft
5. Run a summary on the historic taxlot # within the current taxlots to obtain the count of current lots created from historic lot

Annexation:

- City limit data downloaded from the Oregon Spatial Data Library for years 1996, 1999, 2003, 2005, 2006, 2007, 2009, 2010, 2011, 2012.
- Annexed portions for each year were compiled into one feature class.
- Taxlots within annexed areas were selected using their centroids.

UGB expansion:

- UGB data provided by DLCD for years 1980 until current.
- The data was queried for portions of UGB created after 1999 and with Addition as the ATYPE. This query was used:
  - (ATYPE <> 'Unincorporated' AND ATYPE <> 'Addition+Annex' AND ATYPE<> 'Annex' AND ATYPE<> 'Original' AND ATYPE <> 'Removal') AND effDate >= '19990000'
- Taxlots within expansion areas were selected using their centroids.

APPENDIX C: ZONING CROSSWALK

The following tables show categorization of historic county zoning for case study jurisdictions.

Table C-1 Historic Zoning by General Category, Case Study Counties

General Zone	Deschutes	Lane	Marion	Jackson	Linn
Rural Residential	Rural Residential 10 acre min, Residential 5 acre min, Suburban Residential 2.5 acre min, Terrebonne Residential 5 acres min, Tumalo Residential 5 acres min	Rural Residential	Acreage Residential	Rural Residential, Residential Farm	Rural Residential 1 acre minimum, Rural Residential 10 acre minimum, Rural Residential 2.5 acre minimum, Rural Residential 5 acre minimum, Urban Growth Area-Rural Residential 1 acre minimum, Urban Growth Area-Rural Residential 2.5 acre min., Urban Growth Area-Rural Residential 5 acre min.
High Density Residential	Residential Urban High Density, Residential High Density, Residential Medium Density, Sun River Multiple Family Residential	High Density Residential, Medium Density Residential, Limited High Density Residential	Limited Multiple-Family Residential, Multiple Family Residential	Multifamily Residential, Medium Density Residential, High Density Residential, Urban Residential	
Low Density Residential	LaPine Residential District, Residential Limited, Residential Limited Planned, Residential Low Density, Residential Standard Density, Sun River Single Family Residential, Terrebonne Residential, Tumalo Residential, Widgi Creek Residential	Low Density Residential, Suburban Residential, Low Density Residential	Single Family Residential	Hillside Residential, Mobile Home, Residential, Single Family Residential, Residential Estate, Low Density Residential, Suburban Residential	
Mixed Use Residential				Mixed Use	
Industrial	Industrical General, Industrial Light, Industrial Park, LaPine Industrial District, Industrial Light - Restrictions, Heavy Industrial	Campus Industrial, Light Industrial, Light-Medium Idustrial, Heavy Industrial, Industrial, Limited Industrial	Interchange District, General Industrial, Heavy Industrial, Light Industrial, Industrial Park	Cottage Industrial, General Industrial, Industrial, Limited Industrial, General Industrial, Industrial Heavy, Industrial Light, Limited Use	Heavy Industrial, Limited Industrial, Urban Growth Area - Heavy Industrial, Urban Growth Area - Limited Industrial
Rural Industrial	Rural Industrial, Surface Mining, Sun River Industrial	Quarry Mining Operations, Sand and Gravel	Rural Industrial, Unincorporated Community Industrial	Rural Limited Industrial	
Commercial	Airport Development, Strip Service Commercial, Central Business District Commercial, Special Service Commercial, Limited Service Commercial, Tourist Commercial, Commercial Convenience, Commercial General, Commercial Highway, Commercial Limited, Commercial Neighborhood, Fairgrounds, Sun River Airport	Airport Operations, Airport Vicinity, Neighborhood Commercial, Major Commercial, Commercial, Tourist Commercial, Mixed Use Employment, General Office	Commercial General, Commercial Office, Commercial Retail, Highway Commercial, Industrial Commercial	Airport Overlay, Airport Development Mixed Use, Commercial, Commercial Downtown, Heavy Commercial, Commercial Medical, Commercial General, Commercial Light, Commercial Service Professional, Commercial Tourist, Employment District, Interchange Commercial, Neighborhood Commercial	Freeway Interchange Commercial

General Zone	Deschutes	Lane	Marion	Jackson	Linn
Rural Commercial	Rural Service Center Commercial/Mixed Use District, Terrebonne Commercial Rural, , LaPine Commercial District, , Sun River Commercial, Sun River Community General, Sun River Community Limited, Sun River Resort, Terrebonne Commercial, Tumalo Commercial	Community Commercial, Rural Commercial, General Rural District	Community Commercial	Community Commercial, Rural Service Commercial	Rural Commercial, Rural Center, Urban Growth Area-Rural Commercial
Farm Land	Exclusive Farm Use Alfalfa Subzone, Exclusive Farm Use Horse Ridge Subzone, Exclusive Farm Use La Pine Subzone, Exclusive Farm Use Lower Bridge Subzone, Exclusive Farm Use Sisters/Cloverdale Subzone, Exclusive Farm Use Terrebonne Subzone, Exclusive Farm Use Tumalo/Redmond/Bend Subzone, Multiple Use Agriculture 10 acre min	Agriculture, Exclusive Farm Use	Exclusive Farm Use, Special Agriculture	Exclusive Farm Use, Farm Residential	Agribusiness, Exclusive Farm Use, Urban Growth Area - Agribusiness, Urban Growth Area - Exclusive Farm Use
Farm Forest	Forest Use 1, Forest Use 2, Sun River Forest District	Nonimpacted Forest Lands, Impacted Forest Lands, Farm Forestry	Farm Timber, Timber Conservation	Forest, Forest Resource, Woodland Resource	Farm/Forest, Urban Growth Area-Farm/Forest(Lyons), Forest Conservation and Management, Historic Resource
Parks	Landscape Management, Open Space and Conservation, Open Space Park Reserve, Sun River Community Recreation, Sun River Resort Marina, Sun River Resort Equestrian, Sun River Resort Golf Course, Sun River Resort Nature Center District	Park and Recreation		Bear Creek Greenway, Open Space Reserve, Public Open Space	
Future Urban	Urban Area Reserve		Urban Development, Urban Transitional	Planned Unit Development	Urban Growth Area-Urban Growth Mgmt 10 acre min., Urban Growth Area-Urban Growth Mgmt 2.5 acre min., Urban Growth Area-Urban Growth Mgmt 20 acre min., Urban Growth Area-Urban Growth Mgmt 5 acre min.
Public	LaPine Sewer Treatment District, Public Facility, Sun River Utility District, Tumalo Research and Development	Public Facility, Public Land	Public	Southern Oregon State College, Special Protection	
Combo	Mixed Riverfront	Booth Kelly Mixed Use, Mixed Development, Historic	City	Historic Core	Aggregate, City, Urban Development,
Resource		Beaches and Dunes, Natural Estuary, Natural Resource		Aggregate Resource	
None	Flood Plain, LaPine Flood Plain District				Water

Table C-2: Zoning Crosswalk, Existing Zones to Current Zones, Case Study Counties

Historic Zones (County Zones)	2012 Zones (Statewide Zoning)														
	Combo	Commercial	Farm Forest	Farm Land	Future Urban	High Density Residential	Industrial	Low Density Residential	Mixed Use Residential	Parks	Public	Resource	Rural Commercial	Rural Industrial	Rural Residential
Combo	4%	10%	0%	0%	0%	6%	21%	46%	3%	2%	4%	0%	0%	0%	4%
Commercial	0%	71%	0%	0%	0%	6%	10%	11%	1%	0%	1%	0%	0%	0%	0%
Farm Forest	0%	5%	0%	0%	7%	10%	0%	37%	0%	0%	18%	6%	0%	0%	17%
Farm Land	1%	2%	0%	16%	40%	3%	10%	16%	5%	2%	3%	0%	0%	0%	4%
Future Urban	14%	1%	0%	0%	42%	1%	2%	20%	1%	0%	1%	0%	0%	0%	16%
High Density Residential	0%	14%	0%	0%	0%	65%	0%	14%	0%	0%	2%	0%	0%	0%	3%
Industrial	0%	2%	0%	0%	0%	0%	87%	2%	3%	1%	1%	0%	0%	4%	0%
Low Density Residential	0%	1%	0%	0%	0%	1%	0%	94%	0%	0%	1%	0%	0%	0%	2%
Mixed Use Residential	0%	0%	0%	0%	0%	0%	59%	41%	0%	0%	0%	0%	0%	0%	0%
Parks	0%	19%	0%	0%	0%	0%	2%	5%	0%	65%	5%	4%	0%	0%	0%
Public	15%	3%	0%	0%	0%	5%	0%	35%	0%	15%	27%	0%	0%	0%	0%
Resource	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
Rural Commercial	0%	82%	0%	0%	0%	2%	6%	6%	0%	0%	0%	0%	4%	0%	0%
Rural Industrial	0%	1%	0%	0%	0%	0%	31%	2%	1%	0%	24%	42%	0%	0%	0%
Rural Residential	0%	1%	0%	6%	2%	2%	0%	35%	0%	0%	3%	0%	0%	0%	50%

Table C-3: Zoning Crosswalk, Existing Zones to Current Zones, Case Study Counties

Historic Zones (County Zones)	2012 Zones (Statewide Zoning)															
	Combo	Commercial	Farm Forest	Farm Land	Future Urban	High Density Residential	Industrial	Low Density Residential	Mixed Use Residential	Parks	Public	Resource	Rural Commercial	Rural Industrial	Rural Residential	Total
Combo	617.7	1,700.2	0.0	8.3	-	1,085.5	3,594.6	7,700.7	428.9	399.5	621.7	-	-	0.2	639.2	**16,797**
Commercial	-	3,351.2	-	-	2.1	275.6	461.2	517.2	41.8	11.5	54.5	-	-	-	6.2	**4,721**
Farm Forest	-	12.8	-	-	18.1	25.8	-	95.2	-	-	47.0	14.6	-	-	44.1	**258**
Farm Land	28.6	78.6	-	720.9	1,809.9	151.5	456.8	711.6	220.3	70.6	123.5	3.9	-	7.8	171.4	**4,555**
Future Urban	1,424.5	133.3	-	-	4,127.9	129.7	214.6	1,970.4	146.2	20.8	84.1	-	2.5	-	1,612.8	**9,867**
High Density Residential	3.6	652.9	-	-	0.4	2,991.9	12.9	647.8	11.5	14.4	103.0	-	-	-	147.9	**4,586**
Industrial	-	119.8	-	-	-	21.6	6,327.5	151.2	199.0	57.2	106.8	-	-	308.5	0.4	**7,292**
Low Density Residential	12.5	219.3	-	0.1	4.8	381.7	41.5	24,279.9	64.6	51.5	365.5	0.7	-	-	406.3	**25,828**
Mixed Use Residential	-	-	-	-	-	-	3.8	2.7	-	-	-	-	-	-	-	**6**
Parks	-	195.4	-	-	-	4.2	23.9	50.5	-	673.1	55.5	37.1	-	2.0	-	**1,042**
Public	157.6	27.1	-	-	-	55.0	0.2	363.6	-	161.6	278.9	-	-	-	2.3	**1,046**
Resource	-	-	-	-	-	-	-	-	-	-	-	26.9	-	-	-	**27**
Rural Commercial	-	318.9	-	-	-	8.8	23.5	21.7	-	-	-	-	14.3	0.7	0.6	**388**
Rural Industrial	-	1.4	-	-	-	-	68.5	3.5	2.6	-	51.9	92.7	-	-	-	**221**
Rural Residential	-	23.7	-	141.5	44.5	55.6	9.8	855.9	-	-	65.8	-	0.1	-	1,214.4	**2,411**
Total	**2,245**	**6,835**	**0**	**871**	**6,008**	**5,187**	**11,239**	**37,372**	**1,115**	**1,460**	**1,958**	**176**	**17**	**319**	**4,246**	**79,046**

Table C-2 shows the share of total land in historic zones by 2012 zones. The image shows that only 50 percent of rural residential land remained rural residential between 1999-2012. The largest percentage was converted to low density residential. Of Future urban land, 42 percent remained Future Urban while 20 percent was converted to low density residential and 14 percent was converted to combo land. Interestingly, the vast majority of land classified as commercial, industrial, industrial and resource land remained in the same category. Interestingly, 14 percent of historically high density residential land was classified as low density residential by 2012.

Table C-3 shows the total acreage by zone. Low density residential represents the largest amount of land inside UGBs followed by combo land and industrial land.