

Population and Employment Land Supply Assumptions

For Thurston County



Yelm Area (2011 Aerial Photo)

Final Report
Thurston Regional Planning Council
November 2012

THURSTON REGIONAL PLANNING COUNCIL (TRPC) is a 22-member intergovernmental board made up of local governmental jurisdictions within Thurston County, plus the Confederated Tribes of the Chehalis Reservation and the Nisqually Indian Tribe. The Council was established in 1967 under RCW 36.70.060, which authorized creation of regional planning councils.

TRPC's mission is to "Provide Visionary Leadership on Regional Plans, Policies, and Issues."

To Support this Mission:

- A. Support **regional transportation** planning consistent with state and federal funding requirements.
- B. Address **growth management, environmental quality**, and other topics determined by the Council.
- C. **Assemble and analyze data** that support local and regional decision making
- D. Act as a "**convener**", build regional **consensus** on issues through information and citizen involvement.
- E. Build **intergovernmental consensus** on regional plans, policies, and issues, and advocate local implementation.

This report was prepared as part of the Thurston Regional Planning Council's 2012 regional work program.

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Thurston Regional Planning Council Staff

Veena Tabbutt	Senior Planner
Holly Gilbert	Senior Planner
Thera Black	Senior Planner
Scott Carte	GIS Manager
Jeff Holcomb	GIS Analyst
Michael Ambrogi	GIS Analyst
Jolene Stanislawski	Intern
Rosalie Bostwick	Office Manager
Burlina Montgomery	Office Specialist II
Lon D. Wyrick	Executive Director
Jared Burbidge	Assistant Director

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Summary

The Thurston Regional Planning Council (TRPC) develops updated population and employment forecasts every three to five years. These forecasts are used for transportation, sewer, water, land use, school, and other local governmental planning purposes. They are also used by the private sector for market studies and business planning. They address both the county level and the neighborhood level. TRPC has been preparing these forecasts since the late 1960s. This report documents the development of the 2012 land supply estimates to support the forecast update.

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Introduction

Since the late 1970s the Thurston Regional Planning Council has provided estimates of the buildable land supply in Thurston County. Understanding the land supply gives indications on where projected growth can and is likely to locate, and how much land is set aside for other uses such as environmental protection, parks and recreation, agriculture, and forestry.

During this time, Thurston County was one of the fastest growing counties in Washington State.

In 1990 the State Growth Management Act (GMA) was passed requiring local cities, towns, and the County to develop detailed plans on how they planned to accommodate growth. These are called Comprehensive Plans. At the same time the seven cities and towns and Thurston County developed county-wide planning policies that laid out how Thurston County was to grow as a region. Under these policies, Thurston Regional Planning Council was asked to review land supply and planned densities to ensure that the urban areas were large enough to accommodate 20 years of projected growth.

The State legislature added a monitoring and evaluation provision to the GMA in 1997. This provision is often referred to as the “Buildable Lands Program.” It affects six western Washington counties (Clark, King, Kitsap, Pierce, Snohomish, and Thurston) and the cities and towns within them. Thurston Regional Planning Council was asked to develop the Buildable Lands Report for Thurston County, based on its long history of monitoring land supply. Two reports were issued, 2002 and 2007. A third report was originally due in 2012 however the State extended the deadline to June 30, 2015 due to lack of state funding.

The Buildable Lands Program in Thurston County must answer two key growth-related questions. The first is whether residential development in the urban growth areas is occurring at the densities envisioned in local comprehensive plans. The second is whether there is an adequate land supply in the urban growth areas for anticipated future growth in population and employment.

This report documents the assumptions that were used in developing the land supply estimates for Population and Employment Forecast for Thurston County. This is not the Buildable Lands Report – and does not contain any findings related to Buildable Lands. It does contain many similar data sets and assumptions used in the 2007 Buildable Lands Report.

It is anticipated that a Buildable Lands Report will be issued no later than 2015, depending on funding availability.

Background

The land supply estimates support the allocation of the population and employment forecast to areas within Thurston County such as planning areas, cities, towns, school districts, and activity centers and corridors.

Relationship to the Population Forecast

The basic assumption of the Population Allocation model is that housing market behavior can be simulated by maintaining reasonable relationships between supply and demand.

This simply means that current conditions, market preference, and available land supply all have an influence on where housing (and population) locates within Thurston County. By gaining a reasonable understanding of that relationship, future housing patterns within Thurston County can be forecast.

A buildout factor related to land availability is used when determining where future residential growth is likely to locate, and to shift growth shares as planning areas become full. It is a simple ratio of projected **demand** for dwellings versus available **capacity** for dwellings.

Relationship to the Employment Forecast

Employment Allocations are far more complex than Population Allocations. The location of future jobs is dependent on many factors including: land supply, redevelopable lands, availability of infrastructure, transportation network, parcel size, and the type of job.

General Assumptions

There are many assumptions applied in determining land supply and capacity. Some assumptions are detailed and explicit, such as how zoning densities are applied to determine capacity. Others are general and implicit, but also have major importance in determining the outcome. They are as follows:

1. All assumptions are consistent with the adopted Comprehensive Plans, Development Regulations, and Capital Facility plans of Thurston County's local jurisdictions current to July 25, 2012.
2. There is general agreement that the availability of water rights is a major issue affecting residential and commercial/industrial development potential in the Thurston County region, in both urban and rural areas.
3. Based on capital facilities and water planning efforts by local jurisdictions, the analysis assumes that local cities and towns will be able to provide water and other capital facilities services to much of the area they have designated as urban growth areas with the following caveats:

Based on topography, existing land use patterns, and environmental constraints, sewer service is less likely to be expanded to some areas of the Olympia and Lacey urban growth areas unless land prices rise significantly.

The model makes explicit assumptions as to the availability of wastewater treatment facilities in Bucoda and Rainier during the planning horizon.

Much of the rural residential water supply is met through exempt wells. The model assumes that this pattern will continue in the future – however it should be noted that the Advisory Committee has concerns about this assumption as it is unclear whether or not the State Department of Ecology will continue to permit this practice where water supply is limited.

4. The current land use pattern will have an influence on the future land use pattern in Thurston County. It is the combination of zoning, market factors, and existing patterns that will determine the future land use pattern in Thurston County.
5. Zoning densities achieved in the future are assumed to be similar to those for projects that are currently in the development pipeline.

Land Supply Overview

Description

Land supply is the amount of vacant, partially-used, and redevelopable (under-utilized) land that under current rules and regulations can be developed for homes, apartments, condominium, and other types of living arrangements including dormitories, and senior living facilities, or commercial or industrial uses.



Why is this Important to Measure?

Residential land supply is one determinant of where future growth will locate. Thurston County has been one of the fastest growing Counties in Washington for the last thirty years. Thurston County and each city and town have developed visions on how they plan to grow over the next twenty years. These visions are laid out in their Comprehensive Plans. The forecast provides an opportunity to evaluate if the rules and regulations each jurisdiction has in place will result in the amount, type and placement of growth they expect and hope to receive.

How is this Measured?

Residential land supply is measured by first taking an inventory of all the land, buildings, and other types of uses that are on the ground in 2010 – so that it can be calibrated to Census counts. After that, a series of assumptions are applied to determine how and if the land can be developed in the future. These assumptions range from things such as how many homes per acre can be placed on a piece of land, when a piece of land can be considered fully developed or partially-used, and how much to take out of the land supply for environmentally sensitive areas. These assumptions must be based on the policies and regulations adopted by local cities and towns and Thurston County.

What about Environmentally Sensitive Areas?

Environmentally sensitive areas and their associated buffers are not included in the available land supply.

What is the Product?

The land supply analysis produces estimates of capacity for housing units in three types: single-family, multifamily, and manufactured homes. For commercial and industrial lands, it produces estimates of land available for development or redevelopment.

Capacity for Future Development

Types of Potential Residential Development Capacity

Potential residential development capacity comes in many shapes and forms in Thurston County. Examples are shown in Table 1. Potential capacity is the number of residential units (single-family homes, apartments, condominiums, duplexes, manufactured homes, etc.) that could potentially be developed on any given piece of land in Thurston County under current adopted land use regulations, after accounting for land set aside for critical areas. It is an estimate under “average” conditions.

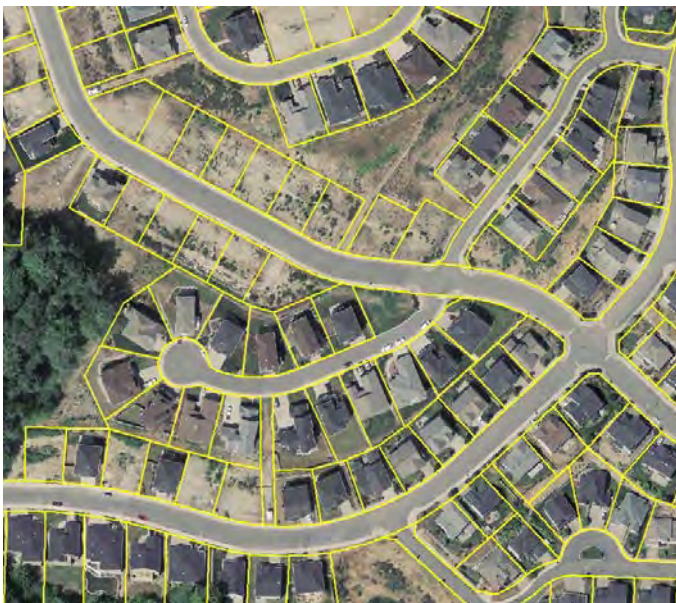
There are many pieces of land in Thurston County that are already developed, or are not suitable for residential development. These lands are not considered to have potential residential development capacity.

In addition, there are some types of residential development capacity that are estimated on an area-wide basis based on past trends such as accessory dwelling units and family member units.

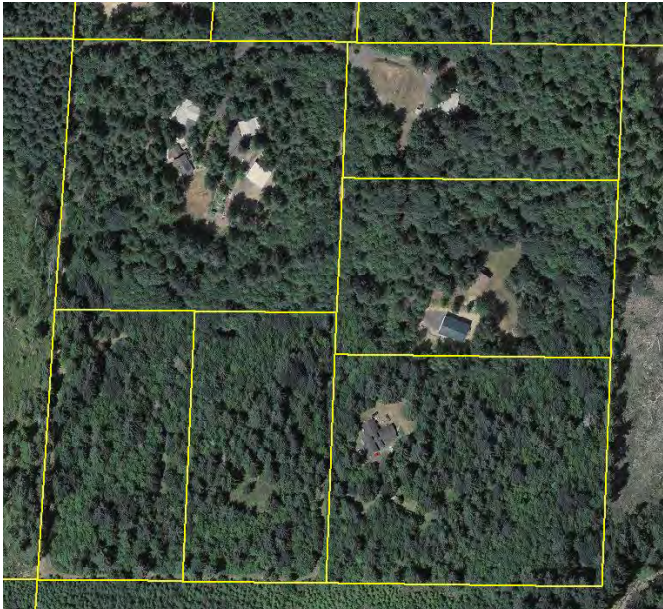
Some of the types of potential residential capacity used in this report are described below.

Please note that estimates of potential residential development capacity are used for general planning purposes only based on regional data sets. Actual development capacity is determined through the regulatory processes at local jurisdictions and is conducted at a site-specific level.

Table 1: Examples of Potential Residential Capacity.

Type of Potential Residential Capacity	Example
Recently Permitted: This category accounts for lots under construction at the time the land use inventory was developed. <i>The homes in the center of the aerial photo to the right were under construction in 2009. (Bella Housa Village, Yelm)</i>	
Subdivision Lots: Empty lots in subdivisions approved since 1970. <i>This subdivision contained numerous vacant lots when this aerial photograph was taken in 2009. (The Highlands at Somerset Hill in Tumwater)</i>	

Type of Potential Residential Capacity	Example
Planned Projects: There are many residential development applications submitted to local jurisdictions that have are in the process of being reviewed. A recent residential housing market study for Thurston County by NewHomeTrends estimated that 75 percent of the proposed residential units would be permitted within the next 10 years. <i>This proposed subdivision in Lacey – Aspen Ridge – is an example of a planned project. Plans call for 57 single-family homes on this almost 20 acre lot in Lacey’s moderate density zoning district.</i>	
Master Planned Community: On many of the larger pieces of urban buildable land in Thurston County, the cities and developers work together to develop a master plan, to combine opportunities for employment, parks, and housing, and in many cases schools. <i>Briggs Urban Village is an example of a master planned community that includes a city park, YMCA, mix of single-family, multifamily, and senior housing, and commercial/office space. Conceptual diagram from Parametrix.</i> www.parametrix.com/projects/pdf/Briggs%20Village.pdf	 Briggs Urban Village Olympia, WA

Type of Potential Residential Capacity	Example
Vacant Single Lots: There is an inventory of vacant lots that were not platted through the subdivision process. Many of these are in the rural county. <i>The two five acre lots in the bottom left portion of the image to the right are examples of vacant single lots. In the future it is likely that one home will be placed on each lot.</i>	
Subdividable land is land that has the capacity for more than one dwelling or housing unit. It can be either vacant or partially-used.	
Vacant Subdividable Land: Vacant land has no commercial, industrial, or residential structures on it at the present time. <i>The small development on Tumwater Hill (circled) is an example of subdividable land in an existing urban neighborhood.</i>	 Year 2000  Year 2009

More examples of subdividable land ...	
Type of Potential Residential Capacity	Example
Partially-used land: Partially-used land has an existing structure. And under current zoning could potentially be subdivided and support additional dwelling units. <i>Example of a large urban lot that was subdivided – with a duplex built on the vacant piece. Olympia.</i>	  Year 2000 Year 2009
<i>Example below is a comparison of two larger subdivisions on partially-used land. On the left is Tumwater Countyside Place, which is platted for 89 lots. The original home remains, while the barn and out-buildings were demolished. On the right is Mirasett, which is platted for 73 lots. To make way for this subdivision the original home and out-buildings were demolished. Both subdivisions were approved in Tumwater's urban growth area – 70th Avenue southwest vicinity – and later annexed into the city.</i>	
2000 	
2003 	
2009 	

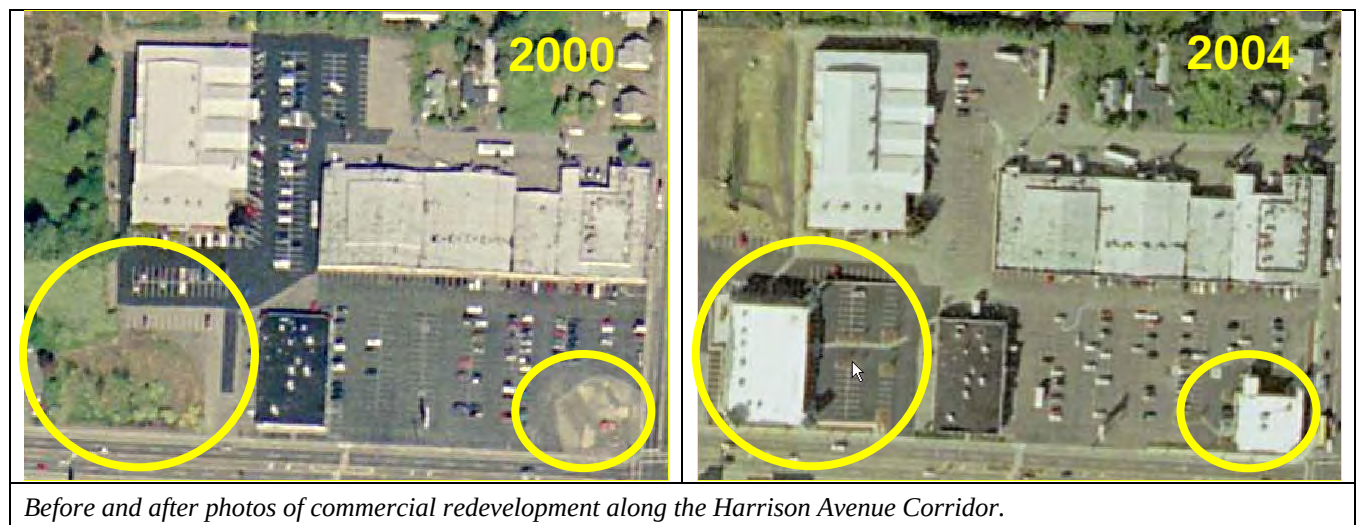
Type of Potential Residential Capacity	Example
Redevelopable Capacity: Redevelopment refers to when an existing use is removed to make way for a more intensive use in a commercial or mixed use zoning district. In general, this occurs where buildings have a low value compared to the land value. The new use does not have to be similar to the original use of the property. <i>An example of residential redevelopment is the Boardwalk Senior Apartments in downtown Olympia, built on the site of a former department store – see photo on right.</i>	
Accessory Dwellings: An accessory dwelling unit is a small second residence permitted on a lot with an existing home. <i>Right - Accessory dwelling unit added to an existing lot in Lacey.</i>	Year 2000 Year 2009
Family Member Units: Family member units are a second residence permitted on a lot with an existing home, with the caveat that the second residence must be used by a family member. Family member units are permissible in rural Thurston County, <i>Right – Manufactured home family member unit added in 2008 on a rural County lot.</i>	Year 2000 Year 2009

Commercial and Industrial Capacity

Commercial and industrial land supply is identified by comparing existing land use and zoning. Vacant or partially-used lands in commercial and industrial zoning districts, and a portion of the land in mixed-use zoning districts, is included in the estimate of commercial/industrial land supply.

Redevelopable land is a small but growing part of our developable land base. Most of the redevelopment potential in Thurston County's urban areas is for commercial and industrial uses. Sometimes parking lots are removed to make way for additional commercial buildings, or other times old-outdated buildings are removed, and new ones built in their place.

Redevelopment usually takes place when land prices rise at a greater rate than building values, especially as vacant land becomes increasingly scarce.



Just as commercial buildings can be redeveloped into residential buildings, the opposite can occur. Single homes in commercial areas are often converted to businesses, or torn down and redeveloped into commercial uses.

Distinguishing between Partially-used and Developed Lands

Land suitable for development or buildable land is grouped into three general categories: (1) vacant land, (2) partially-used land, and (3) redevelopable land, after critical areas and buffers (lakes, wetlands, streams, etc., and associated buffer areas) are removed.

Vacant Parcels: Parcels of land that have no structures or have buildings with very little value, or have no designated use (for example, parks or open space have a designated use and are therefore considered developed).

Partially-used land: Partially-used parcels are those occupied by a use but which contain enough land to be further subdivided without rezoning. For instance, a single house on a 10-acre parcel, where urban densities are allowed, is partially-used.

The following generalized assumptions are used in differentiating between developed and partially-used residential parcels:

- o Partially-used parcels containing more than three residential units (manufactured home parks and apartment complexes) are assessed on an individual basis.
- o For all other residential parcels, the existing home will require, on average, an area consistent with Table 2:

Table 2: Minimum Space Requirements for Existing Homes

Generalized Zoning	Existing Homes: Minimum Space Requirements
Cities: Moderate to High Density Urban Zoning (more than 6 units per acre)	0.20 acres (in most cases the existing home is optimally placed on one side of a 'double or triple lot' and matching the overall fabric of the surrounding neighborhood. Examples of this are in the Garfield Neighborhood in West Olympia).
Cities: Low Density Urban Zoning Unincorporated Urban Areas Within 300 ft of municipal water	0.33 acres (the existing home is not optimally placed, but the land values and development opportunities generally result in no more than a third of an acre being given to the existing home. A third of an acre is ample room for a home on a septic system – although connection to sewer would be required if the property were to further develop).
Unincorporated Urban Areas Further than 300 ft from existing municipal water lines	1 acre (the existing home is not optimally placed and will likely require room for a well and septic system – although a connection to sewer and municipal water would be required if the property were to further redevelop).
Rural Zoning	The existing home is assumed to require an area of at least one acre – but as this is much lower than rural zoning densities it does not really come into play. Therefore the existing home is assigned an area relative to zoning – for instance in the 1 unit per 5 acre zoning district, the existing home is given an area of 5 acres.

Commercial: If a tax parcel contains one or more commercial or industrial structures, it is evaluated to determine if it is fully developed, or partially-used. In general, tax parcels that appear fully developed on aerial photos have a building to area relationship of more than 3,000 square feet per acre. This means that on a one acre parcel, if the commercial or industrial building is 3,000 square feet or more, then the parcel will be considered fully developed. One residential unit in a commercial or industrial zoning district (such as a high density corridor) will be the equivalent of 3,000 square feet. These homes are often converted to small businesses.

If the same one acre parcel contains less than 3,000 square feet of commercial or industrial space, then it is considered partially-used. If the existing buildings are 1,500 square feet, then they are assumed to have a foot print of a half-acre. The remaining half acre of the parcel is considered buildable.

Redevelopable Land: Land 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 (e.g., torn down and replaced) to more intensive uses during the planning period.

Based on the market conditions in Thurston County, redevelopable land is only identified in mixed-use, commercial, and industrial zoning districts. Redevelopable land can be developed for future residential, commercial, or industrial activity. Residential redevelopment capacity is exclusively assigned to *multifamily* (apartments and condominium) types of development.

Commercial and industrial redevelopment potential is evaluated by comparing building value to land value.

Table 3: Assessment of Commercial/Industrial built lands for development and redevelopment potential.

Category	Building area to Parcel Area ratio (sq. ft. building to acres)	Building Value to Land Value	Model Assumption: Percent of Land Assigned as Redevelopable
Partially-Used Commercial/Industrial lands	<3,000 bldg. sq. ft./acre	n/a	Portion assigned as buildable; remainder assessed for redevelopment potential.
Very High Redevelopment	>3,000 bldg. sq. ft./acre	0.0 to 0.5	100%
High Redevelopment	>3,000 bldg. sq. ft./acre	0.5 to 1.0	75%
Medium Redevelopment	>3,000 bldg. sq. ft./acre	1.0 to 2.0	50%
Low Redevelopment Potential	>3,000 bldg. sq. ft./acre	> 2.0	10%
<i>Note: Implicit assumptions are made for large redevelopment parcels such as the Tumwater Brewery and Port of Olympia Commercial/Industrial Lands.</i>			

Residential homes in mixed use zoning districts are considered redevelopable only if they are not: (a) condominiums; (b) 5 or more units (apartment complexes); (c) within manufactured home parks; and (d) within subdivision platted in the last 30 years, and are in mixed-use or commercial zoning districts where the conversion of residential homes to commercial buildings is likely to occur.

Critical Areas

Since the Growth Management Act (GMA) was adopted in the early 1990s, a step in establishing comprehensive plans and development regulations included designating and protecting critical areas. The GMA recognizes the importance of these critical areas in supporting and protecting human life and safety, and in contributing to the high quality of life in Washington State.

Critical areas include the following areas and ecosystems: wetlands, areas with a critical recharging effect on aquifers used for potable water, fish and wildlife, habitat conservation areas, frequently flooded areas, and geologically hazardous areas. All critical areas must be designated and their functions and values protected using the best available scientific information.

Locally adopted criteria are used to determine the presence or absence of critical areas during land development permit application reviews. In Thurston County many critical areas are mapped through a geographic information system, and these data layers are available for general planning purposes, such as the land supply analysis used in the Population and Employment Forecast Allocations.

For estimating buildable lands supply at the county-wide level, the critical areas and associated buffers shown in Table 4 were removed before reporting the residential and commercial land supply. These assumptions are meant to best model the individual critical area ordinances adopted by the County and the Cities and Towns within Thurston County by July 25 2012, given the limitations of individual data sets. For instance, as wetlands have not been assigned “types” a general buffer is applied to wetlands rather than a more specific buffer that is specified in development codes. These assumptions are for general planning purposes only and should not be assumed to reflect development capacity at the individual project level where more detailed criteria apply.

Table 4: Critical Area and Buffer Deductions used in the Analysis

Critical Area Type	Lacey	Olympia	Tumwater	Yelm	Rainier	Tenino	Bucoda	Unincorp. Growth Areas	Rural County
100 Year Flood Plain	Yes	No	Yes	Yes	No ¹	No ¹	No ¹	Yes	Yes
Marine shoreline	Yes	as mapped	n/a	n/a	n/a	n/a	n/a	Yes	Yes
- buffer	200 ft							50-250 ft ²	50-250 ft ²
Lakes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	Yes	Yes
- buffer ³	50 ft	100 ft	100 ft					50 ft	50 ft
Ponds				as	as	as	as		
(1,000 sq. ft. to 19.99 ac.)	Yes	Yes	Yes	wetlands	wetlands	wetlands	wetlands	Yes	Yes
- buffer	100 ft	100 ft	100 ft					100 ft	100 ft
Wetlands				use stream					
(typing is not possible)	Yes	Yes	Yes	buffer	Yes	Yes	Yes	Yes	Yes
- buffer	150 ft	200 ft	200 ft	150 ft	200 ft	200 ft	200 ft	200 ft	200 ft
Applies to wetlands over:	-	1,000 sq. ft	1,000 sq. ft	-	-	-	-	1,000 sq. ft.	1,000 sq. ft.
Steep Slopes									
- percent	n/a	40%	40%	* ⁴	40%	40%	40%	50% ⁵	50% ⁵
High Groundwater Areas	Yes	No	No	Yes	n/a	n/a	Yes	Yes	Yes
- buffer	n/a	n/a	n/a	no	n/a	n/a	n/a	50 ft	50 ft
Oak Stands	* ⁶	n/a	n/a	Yes	Yes	Yes	Yes	* ⁶	* ⁶
- no buffer									
Prairie	n/a	n/a	n/a	n/a	n/a	n/a	n/a	per study ⁷	per study ⁷
- buffer									

Note: YES indicates that the critical area or buffer indicated in the table below is protected and was removed from the Buildable Land Supply.

Table continues on next page

Table 4 continued: Critical Area and Buffer Deductions

Critical Areas and Buffers Deducted from Buildable Land Supply								Unincorp.	Rural County
Critical Area Type	Lacey	Olympia	Tumwater	Yelm	Rainier	Tenino	Bucoda	Growth Areas	
Streams									
New Typing System									
Type S	n/a	Yes	n/a	n/a	Yes	Yes	Yes	Yes	Yes
- buffer		250 ft			150 ft	150 ft	150 ft	250 ft	250 ft
Type F	n/a	Yes	n/a	Yes	Yes	Yes	Yes	Yes	Yes
- buffer		200 ft		150 ft	100 ft	100 ft	100 ft	200 ft	200 ft
Type N	n/a	Yes	n/a	Yes	Yes	Yes	Yes	Yes	Yes
- buffer		150 ft		150 ft	50 ft	50 ft	50 ft	150 ft	150 ft
Type U (unknown)	n/a	Yes	n/a	n/a	n/a	n/a	n/a	Yes	Yes
- buffer		100 ft						100 ft	100 ft
Previous Typing System									
Type I	Yes	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a
- buffer	200 ft		250 ft						
Type II	Yes	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a
- buffer	200 ft		250 ft						
Type III	Yes	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a
- buffer	200 ft		200 ft ⁸						
Type IV	n/a	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a
- buffer			50 ft						
Type V	n/a	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a
- buffer			50 ft						

Notes: ¹ can build but at 2 foot minimum above ordinary high water mark; 50% of buffer can be used for density calculations; ² 250 feet for natural, 50 feet for other types of streams; used an average of 150 feet; ³ wide range of buffers and setbacks; ⁴ most steep slopes are in master planned community; ⁵ regulations include buffer of 50 feet top of slope and 25 feet toe of slope; ⁶ on a case by case basis depending on the stand (removed dominant stands for the analysis); ⁷ removed for the analysis (Department of Natural Resources mapped grasslands was used as data layer); ⁸ 200 feet for streams 5-20 feet wide; otherwise 100 feet; 200 feet used for planning purposes.

Estimating Development Capacity

Development capacity is reported as the number of residential units (houses, condos, apartments) or commercial, industrial, or institutional square feet that can be accommodated on buildable land.

Single Lots versus Subdividable Lots

The following general assumptions are made when estimating *residential* development capacity:

1. In the cities and urban growth areas, parcels that have been legally subdivided through the long plat process since 1970 are assumed to have a capacity as indicated on the plat map. For the most part this means each *vacant* residential lot in these subdivisions will be assigned a capacity of one home. In a few instances duplexes to fourplexes were planned for the lots. In these subdivisions, lots with one or more homes on them are considered *developed*, with no room for further development.
2. Lots that are less than one and a half acres in size, with a home built recently (1990 or later) or with homes with a value greater than \$250,000, are considered fully *developed*.
3. In the rural county, under health code standards, existing lots must meet a *minimum* size threshold of 12,500 square feet of buildable land (this area cannot include critical areas or critical area buffers) to be considered buildable for purposes other than recreation.
4. Any other *vacant* legal lots that are smaller than indicated in Table 5 are unlikely to be further subdivided, and are assigned a capacity of one home.

Table 5: Assumptions for Minimum Lot Size Requirements for Subdividable lots

Area and Generalized Zoning	Minimum Lot Size to be Considered Subdividable
Cities Moderate to High Density Urban Zoning (more than 6 units per acre)	0.25 acres (any vacant lots smaller than a quarter acre are assumed to have a capacity of one home)
Cities Low Density Urban Zoning Unincorporated Urban Areas Within 300 ft of municipal water	0.33 acre minimum (any vacant lots smaller than a half acre are assumed to have a capacity of one home)
Unincorporated Urban Areas Further than 300 ft from existing municipal water lines	1 acre minimum (any vacant lots smaller than one acre are assumed to have a capacity of one home)
Rural Zoning	Vacant lots must be able to accommodate 2 or more units to be considered subdividable • 1 unit per 5 acre zoning – 10 acre minimum • 1 unit per 10 acre zoning – 20 acre minimum

Planned and Proposed Projects

Any lots (vacant, partially-used or redevelopable) where a developer has submitted an application for *development* to city or county staff will be assigned the planned development capacity.

All master planned communities, urban villages, and urban centers will be given a development capacity (both residential and commercial) based on the proposed *master plan*.

Institutional Lands

Any vacant or partially-used *institutional lands* (owned by a school, college, church, cemetery, or local or state government) will be assumed to develop based on the ownership. These lands will not be assigned any new residential capacity, *with the exception of dorms and jails*. For example, on The Evergreen State College Campus it is assumed that there may be new college buildings or dorms, but that the land will not be used for general commercial or residential development.

Redevelopment

Fully developed or partially-used residential parcels in residential zoning districts will *not* be considered redevelopable. The assumption will be that the original home remains in place over the planning period, taking up a footprint as indicated in Table 2. Redevelopment potential is *only* assessed for parcels in mixed use or industrial zoning districts.

Subdividable Lands

If a vacant or partially-used parcel does not fall into any of the categories above, it is evaluated to see if it can be further subdivided based on zoning and parcel size.

Density Assumption

The model includes a residential density estimate for each zoning district. This estimate is developed based on the range of allowable densities, the actual densities being achieved in each zoning district, and calibration against proposed development projects. It is measured as number of units per Total Buildable Acres.

Smaller Subdividable Lots (referred to as short plat subdivisions)

Short plat subdivisions are subdivisions that, because of the small number of lots created do not require public streets or other public facilities such as storm water ponds. Capacity is determined by taking:

Total Buildable Acres and multiplying by Density (units per acre).

Multifamily and Mixed Use

Multifamily and mixed use projects do not go through a typical subdivision process. While they do require parking, internal streets, and other public facilities such as stormwater ponds, these

features are included as part of the site design rather than on separate lots. Capacity is determined by taking:

Total Buildable Acres and multiplying by Density (units per acre).

(See Diagram 1)

Residential Single-family Attached or Detached – Larger Subdividable Lots - Urban Areas

Large Plat subdivisions are a major division of land. At the time land is divided, roads, rights-of-way, open space and tree tracts and stormwater facilities are laid out. To account for these public spaces, a density reduction factor is applied to the base density in the model, as shown in Table 6. See Diagram 2 for example.

Table 6: Assumptions for Deductions for Long Plat Subdivisions

Jurisdiction	Open Space/Tree Tract (whatever is greater)		Storm- water Facility	Roads & Rights- of-Way	Total (whatever is greater)	
Lacey	10%	or 10% plus critical*	10%	20%	40%	or 40% plus critical*
Tumwater	10%	or 5% plus critical*	10%	20%	40%	or 35% plus critical*
Olympia	5%	or critical*	10%	25%	40%	or 35% plus critical*
Yelm	5%	or critical*	5%	22%	32%	or 27% plus critical*
Bucoda	-		-	-	40%	or 40% plus critical*
Rainier	-		-	-	40%	or 40% plus critical*
Tenino	-		-	-	35%	or 35% plus critical*
Unincorporated Growth Areas	5%	or 2.5% plus critical*	10%	22%	37%	or 34.5% plus critical*

* Critical areas and critical area buffers as estimated in the GIS.

Note: part or all the open space or tree tract requirement may be met in critical area buffers, or partial density can be applied, depending on the jurisdiction.

Rural Areas

Capacity for rural subdividable lands is determined by taking:

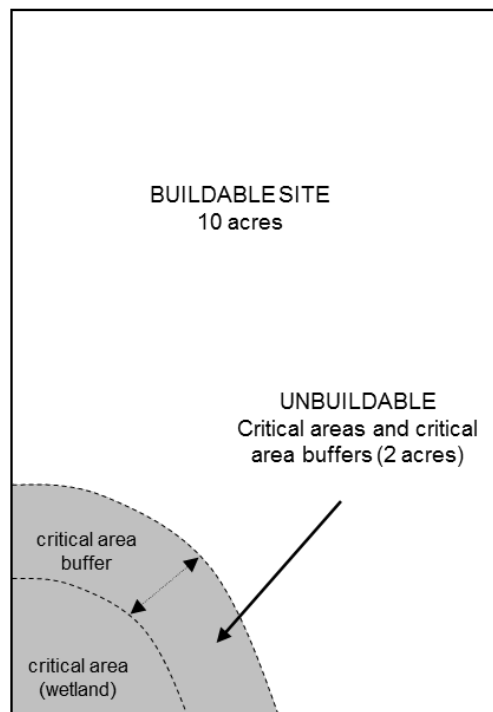
Total Buildable Acres and multiplying by Density (units per acre). Buildable acres do not include critical area and associated buffers.

Diagram 1 - Estimating Development Capacity

Multifamily and Mixed Use - Vacant and Partially-used Land

(applied only to land that has not been submitted into the approval process)

Original 12 Acre Site



DEVELOPMENT CAPACITY

1) Calculate Buildable Site Area by deducting:

- ☐ Critical Areas
- ☐ Critical Area Buffers
- ☐ Developed land (if site is partially-used)

2) Multiply buildable site area by density:

Assume average density is 10 units per acre

$$10 \text{ buildable acres} * 10 \text{ units per acres} = 100 \text{ units}$$

Developed 12 Acre Site

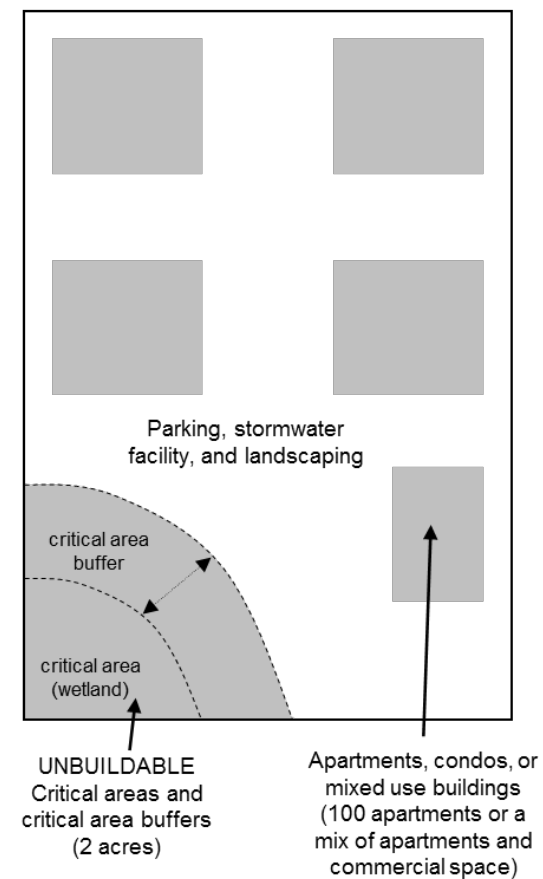
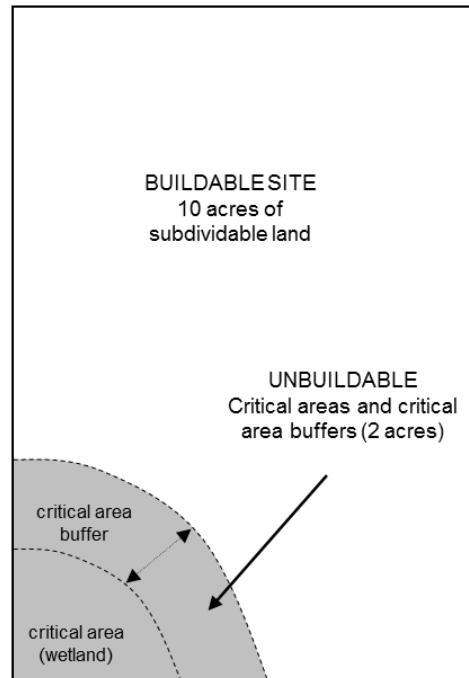


Diagram 2 - Estimating Development Capacity

Single Family Attached and Detached - Vacant and Partially-Used Land

(applied only to land that has not been previously subdivided or submitted into the subdivision process)

Original 12 Acre Site



DEVELOPMENT CAPACITY

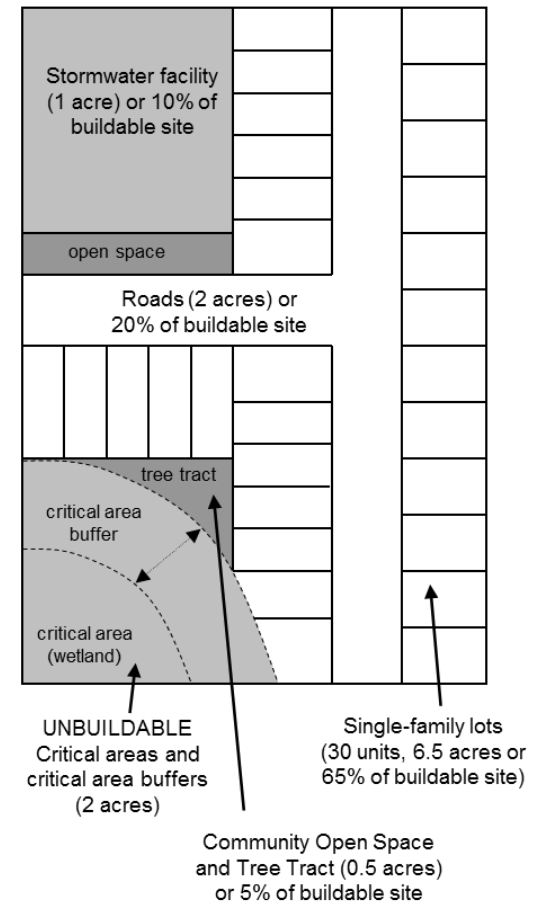
1) Calculate residential acres by taking total site area and deducting:

- ☐ Critical Areas
- ☐ Critical Area Buffers
- ☐ Open Space and/or Tree Tract **
- ☐ Stormwater Facility
- ☐ Roads and Rights-of-Way
- ☐ Developed land (if site is partially-used)

2) Then multiply remaining acres by density to get number of units

** Part or all of the open space or tree tract requirement may be met in critical area buffers or partial density transfer can be applied depending on the jurisdiction

Subdivided 12 Acre Site



Replacements, Accessory Dwellings, Family Member Units

Capacity for new family member units, accessory dwelling units, and changes in housing type (replacement of manufactured homes by single-family homes) is constrained by market demand. The specific on these types of units are in the Forecast Allocations documentation.

Group Quarters

Group quarters are allowed in both residential and commercial zoning districts. Some group quarters will be located on institutional or government – owned tax parcels such as new dorms and jails. Others, such as nursing homes, will be found throughout the county. Group quarters make up around 1.7 percent of the total population in 2010. This is estimated to rise slightly to 2 percent by 2040 as the baby-boom generation ages and there is increased need for nursing homes. The closure of Maple Lane Juvenile Correctional Facility (2011) is accounted for in the forecast model.

Assumption for Schools, Churches, Parks and other Public Facilities in Residential Zoning Districts

Overview

Schools, churches, parks are often located in residential zoning districts close to the population they serve. In the Lacey, Olympia, and Tumwater region it is estimated that these uses take up just over 10 percent of the developed land outside of industrial zoning districts. Percentages are more variable in the south County cities and towns, where one large high school can tip the balance.

It is not always possible to plan ahead for the next 20-30 years on the exact location of new schools, churches and parks and other allowable non-residential uses in urban areas. Some school districts such as the North Thurston Public Schools (serving the Lacey area) have acquired many school sites already to plan for future growth. Most others purchase sites as they need them.

Most park plans call for the need for new parks, but specific locations aren't identified. Olympia has recently entered a phase of park acquisition, fueled by an inflow of dedicated parks money from a recent Parks and Recreation Funding Measure.

Churches also tend to locate in residential areas. Over the years sites for churches tend to be getting larger, and locating further out from the urban core. The factors used in the land supply analysis are shown in Table 7.

Site-Specific Deductions

Site specific deductions are taken where vacant or partially-used land is already identified for future public facilities in residential zoning districts. All park land - developed parks or land set aside for future parks - have been deducted from the land inventory.

Table 7: Factor for Non-Residential Uses in Residential Zoning Districts

Type of Capacity	Non-Residential Use Deduction (in addition to road and open space deductions taken in subdivisions)
Subdividable Urban Land	10%
Subdividable Rural Land	1%
Mixed-use Residential Capacity (Note: The mixed-use zoning districts assume a proportion on non-residential and residential uses, so no further deductions are necessary)	0%
Redevelopment Capacity (Note: This type of capacity assumes a proportion on non-residential and residential uses, so no further deductions are necessary)	0%
Platted Single-family home and duplex lots	0%
Planned Projects (The number of units in these projects is already established and needs no further reduction)	0%

Mixed Use Percentages

Some of the zoning districts in Thurston County allow for, or encourage, a mix of commercial and residential uses. The model distributes the buildable and redevelopable land into residential and commercial portions, based on a mixed-use assumption factor. This factor varies from low (2% residential) in mainly commercial zoning districts, to fairly high in Urban Villages and mixed-use Master Planned Communities. The factor is developed based on past trends and proposed projects.

Capacity Estimates by Type of Housing

Zoning districts generally allow for a mixture of single-family, multifamily, and manufactured housing types. In general, the higher the density range allowed in a zoning district, the higher the percentage of multifamily housing expected. The model assumption is based both on expected demand for housing, and the type of housing that has been achieved in the zoning district in the last decade.

Details on this assumption can be found in the [Assumption for Type of Housing by Zoning District](#) report.

Assumptions Report

The [Zoning Assumptions by Jurisdiction](#) set of reports lays out the detailed assumptions used in the estimates of land supply.

Wastewater Treatment in Bucoda and Rainier

Urban services are not currently available everywhere throughout all the urban areas. In particular, Rainier and Bucoda do not currently have sewer or wastewater treatment facilities. This limits the density of development to allow for a septic system and drainfield. The model will make an implicit assumption that Rainier will have sewer service by the 2020-2025 planning horizon, and Bucoda will have sewer by 2025-2030.

Calibration of Assumptions

In order to ensure that the various assumptions used in developing the land supply estimate lead to reasonable results, two methods of proofing the input data and assumptions are provided, a calibration report, and set of supporting maps. Together, these ensure an open and comprehensive stakeholder review of both assumptions and outputs.

Calibration Reports

A series of four calibration reports compare over 130 residential planned projects to the model estimates of dwelling units in the Urban Areas. The reports provide the comparison in four different ways:

1. Summary by Generalized Density Categories for Zoning Districts
2. Detailed Report by Generalized Density Categories and Zoning Districts
3. Summary by Jurisdiction
4. Detailed Report by Jurisdiction

Supporting Maps

A four-map series is available for various geographies in Thurston County, covering the following topics:

1. 1992-2012 Building Permits
2. 2010 Current Land Use
3. 2010 Residential Development Potential
4. 2010 Commercial, Industrial and Mixed Use Development Potential

Geographic Areas include:

- Bucoda
- Lacey – Olympia – Tumwater Urban Growth Area
- Grand Mound Urban Growth Area
- Rainier Urban Growth Area
- Tenino Urban Growth Area
- Yelm Urban Growth Area
- Rural Thurston County

Other Considerations

Buildable Lands Program

The Buildable Lands program in Thurston County answers two key growth-related questions. The first is whether residential development in the urban growth areas is occurring at the densities envisioned in Local Comprehensive Plans. The second is whether there is adequate land supply in the urban growth areas for anticipated future growth in population and employment.

The next Buildable Lands report is officially due by mid-2015, but may be issued earlier after the forecast update is complete. It is likely to rely heavily on the data and assumptions used in the Land Supply estimates and Population and Employment update. The County has the responsibility of undertaking a review of the Urban Growth Area. In the past the County has relied on the Buildable Lands report to inform this review.

Urban Growth Area Review

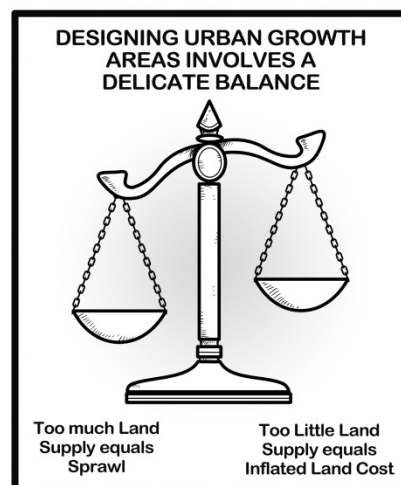
Under the State's Growth Management Act, the County is required to review the urban growth areas every ten years. The following is the some of the criteria for the review:

“(d) Based upon the growth management planning population projection selected by the county from within the range provided by the office of financial management, and based on a county-wide employment forecast developed by the county at its discretion, the urban growth areas shall include areas and densities sufficient to permit the urban growth that is projected to occur in the county for the succeeding twenty-year period.

(e) The urban growth area may not exceed the areas necessary to accommodate the growth management planning projections, plus a reasonable land market supply factor, or market factor. In determining this market factor, counties and cities may consider local circumstances. Cities and counties have discretion in their comprehensive plans to make many choices about accommodating growth. Each urban growth area shall permit urban densities and shall include greenbelt and open space areas.”

Source: WAC 365-196-310 – Urban Growth Areas

In short, the county is not only directed to review the growth area to ensure that there is adequate land supply to accommodate projected growth (the Buildable Lands Program), but must also ensure that the land supply does not exceed the area necessary to accommodate projected growth.



From: Issues in designating urban growth areas, State of Washington Department of Community Development (1992).

Market Factor Discussion

Overview

The market factor used in the previous Urban Growth Area evaluation (2007/2008) was a range between 0 and 25 percent.

Market factors account for “*vagaries of the real estate market supply*.” (RCW 36.70A.110(2)), and at a minimum take into account that not all land *suitable* for development will be *available* for development in the 20-year planning horizon. Some land owners will *choose* not to put their vacant or partially-used land on the market, or choose not to redevelop developed properties.

In 2007 Thurston County and the cities and towns began working together in a joint planning effort to develop suitable market factors for each jurisdiction and the adjacent unincorporated urban growth area.

When defining suitable market factors, Thurston County and local cities and towns took into account the various factors that TRPC already includes in the analysis that relate to development inefficiencies and could be considered potential market factors. These factors are outlined on the following pages.

“The buildable lands analysis assesses many of the potential market factors and incorporates them into the figures for land supply and demand that it produces. This analysis appears to take the place of a market factor.”

“Since the number used in the comprehensive plan update to determine residential land supply in the Thurston County UGAs was derived from the buildable lands analysis, any market factor must be based on factors that were not already incorporated into the determination of residential land supply.”

Western Washington Growth Management Hearings Board, *1000 Friends of Washington v Thurston County*, Case #05-2-0002 Final Decision and Order, July 20, 2005.

Potential Market Factor Elements or Development Inefficiencies Incorporated into TRPC's Analysis

1. Minimum space requirements for existing homes on partially-used land

Example: An existing home in a single-family zoning district is allotted 0.33 acres (about 14,400 sq. ft.) out of the remaining property, even though new plats typically use about 5,000-6,000 sq. ft. per home.

Comment: This accounts for the inefficiency from having to build around an existing structure.

2. Proportion of area in mixed use districts assumed available for redevelopment

Example: Assume only 5 percent of the land in a particular mixed use zoning district might redevelop to residential use (see zoning report for actual assumptions used.)

Comment: This acknowledges that in mixed use areas most redevelopment will be to a higher intensity of commercial development, rather than to new residences.

3. Minimum parcel size (by zoning category) to be considered subdividable

Example: A parcel in an unincorporated growth area (and not on municipal water) must be at least one acre in size to be assumed available for subdivision during the forecast time horizon.

Comment: This acknowledges that a) environmental health standards limit lots to one acre when onsite sewage disposal and water are used, b) infill development is more difficult, and c) most such parcels have owners who prefer to live on such larger lots and have no further development intentions during the forecast time horizon.

4. No further subdivision of long plats approved since 1970

Example: The Seasons, platted in the 1980s, includes a number of two-acre lots, which are assumed will not be further subdivided during the forecast time horizon.

Comment: This acknowledges that recent plats normally have private restrictions that prevent further subdivision, even though current zoning might allow it.

5. General deduction for non-residential uses in residential districts (e.g., schools, churches, parks, day care centers, etc.)

Example: Seven percent of the developable land area in the single-family zoning districts of cities and unincorporated urban growth areas is assumed to be used for non-residential uses.

Comment: This recognizes that some residential land will be used for typical non-residential land uses common to neighborhoods, and must be accounted for.

6. Truncation of potential dwellings to whole numbers per parcel

Example: A hypothetical parcel has 3.85 developable residential acres after deducting for critical areas, buffers, tree tracts, stormwater facilities, roads, etc. In a typical single-family zoning district, this might be multiplied times a net density of 4.6 units per acre to theoretically allow 17.71 dwellings. This would be rounded down to 17.

Comment: This procedure recognizes some of the inefficiencies in laying out a subdivision on smaller sites versus larger ones, since the amount truncated will be more consequential on smaller sites.

Market Factor Elements

1. Proportion of residentially developable land area that will not be on the market during 20 year planning horizon

Example: A random survey conducted for Snohomish County asked several hundred property-owners whether their land might be available for development within 5, 10, 15, or 20 years. The survey found that 21% of respondents would be unlikely or very unlikely to make their property available for development in the next 20 years.

Comment: A corresponding assumption should be developed for Thurston County. Different assumptions might be appropriate for different parts of the County.

2. Added margin for small towns and cities to recognize greater fluctuation in their growth rates and potential access to sewer

Example: Rainier was a sleepy town of less than 400 from 1950 to 1970, after which it exploded 133% to 891 in 1980. Things were calm again in the 1980s, but from 1990 to 2000 it leaped another 51%.

Comment: Small towns and cities have long periods of stability punctuated by explosive growth. This is because a modest-sized subdivision represents a large percentage of the total housing. In addition, both Bucoda and Rainier may have a sewer in the planning horizon. When/if that happens leads to further potential fluctuations in their growth rates.

Elements That Are Not “Market Factors” as Defined by GMA but Merit Evaluation and Discussion As Part of the Buildable Lands Analysis

1. Access to Municipal Sewer and Water

Example: Urban services are not currently available everywhere throughout all the urban areas. In particular, of the South County towns, only Yelm and Tenino have sewer, and none of them extend water service outside the city limits. Availability of sewer and water determines potential density. If development occurs at densities constrained by lack of municipal sewer and/or water, the potential capacity of the urban areas will be reduced.

Comment: The Buildable Lands analysis uses the adopted sewer and water service plans of the jurisdictions to identify where and when municipal sewer and water will be made available. These plans all commit to serving their respective urban areas over the 20-year planning time horizon. A recent Central Puget Sound Growth Management Hearings Board case, while not applicable to Thurston County, offers a relevant analysis of the GMA requirements (Kitsap Citizens for Responsible Planning v Kitsap County, Case 06-3-0007, FDO July 26, 2006). In that case, The Central Board ruled that the GMA requires that jurisdictions must plan to develop urban areas in an urban manner, providing urban services to enable it. Thus urban areas should not include lands that cannot be provided urban services within 20 years.

2. Varying costs to extend water or sewer

Example: Some parts of the urban areas will be costly to serve with water or sewer, such as outlying areas that might require multiple pump stations or other factors raising costs well above what the current housing market can bear.

Comment: This is a legitimate issue, and may be an appropriate basis for adjusting UGA boundaries. If excessive costs imply that certain areas cannot reasonably be urbanized within the 20-year planning time horizon, they should not be included in the UGA. This may imply a need to reduce the size of the UGA accordingly, or it may imply a need to shift the UGA to add different areas instead, where services can be provided more cost-effectively.

3. Availability of Water Rights

Example: Local cities and towns were reaching the limits of their water rights by the end of the last decade. Lacey had to temporarily deny access to municipal water service to new subdivisions proposed for the unincorporated Lacey UGA. Also, in rural areas the water rights exemption for six or fewer houses per parcel could limit the potential capacity of rural areas.

Comment: By working together, the Cities resolved some of the issues relating to water rights availability for the urban areas. This is likely to be an ongoing concern – where cities will increasingly look to strategies other than new water rights (such as increased conservation) to be able to supply water to a growing population.

4. Varying levels of Impact Fees

Example: Different jurisdictions have different levels of development impact exactions, whether through impact fees, SEPA mitigation fees, transportation benefit districts, or other means. By substantially influencing costs, this can influence the location of new development.

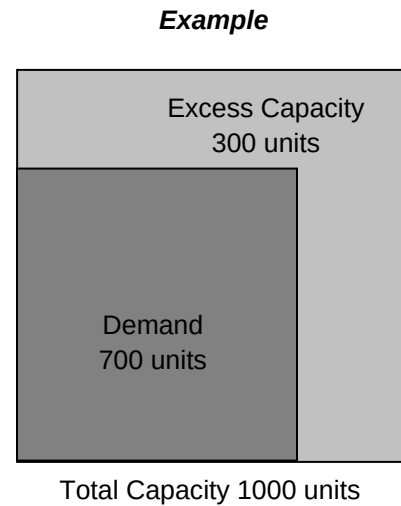
Comment: This is a valid observation. These differentials have been in place for more than a decade, and are well reflected in market trends already. Since the growth allocations are deliberately based in large measure on observed market trends (i.e., building permit trends collected by TRPC annually since 1986), these factors are already incorporated into the TRPC forecast allocation and buildable lands modeling. The TRPC modeling process combines trend analysis based on building permits to determine future demand (e.g., how much of the recent growth has gone to Lacey and/or its UGA) with the buildable lands analysis to determine future supply (e.g., how much more growth Lacey and/or its UGA can accommodate). This modeling approach assumes that the jurisdictions in which it is currently more expensive to develop will remain more expensive, etc.; and that this will continue to affect growth rates in those jurisdictions similar to today.

Excess Capacity

What is Excess Capacity? Excess capacity is the amount of Total Capacity (supply) in a given area, minus the amount of capacity expected to be used or built (demand) within the planning horizon.

If, for instance, a planning area had the capacity for 1,000 dwellings, and 700 units are expected to be built within the planning period of say, 20 years, then the excess capacity is 300 units.

Why is it Important? Excess Capacity was compared to the Market Factor range determined by Thurston County in the 2007/2008 Urban Growth Area review.



What is Percent Excess Capacity? Instead of expressing Excess Capacity in terms of dwelling units or acres, it is shown relative to how much is expected to be used in the planning horizon.

Using the example above, the Excess Capacity (300 units) divided by how many units are expected (700 units) is the percent excess – or 43 percent. This means that there is enough capacity to accommodate demand, plus 43 percent extra.

When will Excess Capacity be Reported?

A table of reporting Excess Capacity will be developed as part of the Buildable Lands Program due in 2015.

For More Information
Contact Veena Tabbutt, Senior Planner, (360) 956-7575, or email at tabbutv@trpc.org.