

REGIONAL BENCHMARKS

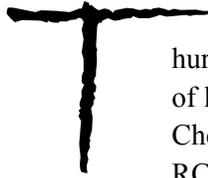
For Thurston County

*Tracking Growth Management
Policy Implementation*

July 2003



*Prepared by:
Thurston Regional Planning Council*



Thurston Regional Planning Council (TRPC) is a 16-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.

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This report was prepared as part of the Thurston Regional Planning Council’s 2003 regional work program.

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Overview

The 2003 publication of Regional Benchmarks for Thurston County, *Tracking Growth Management Policy Implementation* stems from an effort on the part of local governments in Thurston County to monitor the region's progress toward meeting the 13 goals of the 1990 state Growth Management Act (GMA). This is accomplished by comparing actual trends in key indicators against benchmarks established in several overarching growth management areas: Buildable Lands, Growth, Transportation, Economy, Environment, and Housing Affordability.

The Regional Benchmarks Report has an important role to play in determining whether implementation of the Growth Management Act is occurring and achieving the desired results. Good information regarding the results of the policies in adopted comprehensive plans in the county is crucial. By tracking indicators at the regional level, local governments are provided with a regional perspective of what's happening, leading to improved regional coordination regarding growth management planning.

In addition, the GMA and the subsequent 1997 "buildable lands" monitoring and evaluation amendment to GMA, require that the cities and county report to the state on progress made in implementing the Act. The first Buildable Lands Report was due to the state in September 2002. In order to allow for consistency with our region's already established GMA monitoring program, three new benchmarks were developed as the reporting mechanism for meeting the legislative buildable lands requirements. This enabled the Buildable Lands Report to be incorporated into this report as a separate chapter, adding an important new land use analysis to our region's GMA monitoring effort. The technical documentation for the buildable lands work is included as an appendix to this report.

A particular effort has been made to try and make the information in the Benchmarks Report accessible to a wide variety of readers. A standard 2-page format has been developed for each benchmark to allow readers to easily review key data trends. For those who are interested in more detail, a wide variety of supporting data tables are provided as well.

This report is an attempt to measure the results of already adopted policies. It's important to note that whether those policies are promoting a trend that the community wishes to continue to support is not the subject of this report. Rather, it is hoped that the data in this report will be helpful to policymakers and the community at large in answering such questions as trends are monitored over time.

Introduction

This report marks the third TRPC Regional Benchmarks Report, the first being published in 1996. The 2000 Regional Benchmarks Report was recognized for excellence in planning implementation when it received an Honor Award from the American Planning Association and the Planning Association of Washington. TRPC's Regional Benchmarks Report is a work in progress. We encourage you to please use the Reader Survey at the beginning of this report to provide us with your feedback and comments.

Key Dates in Recent Growth Management Planning in Thurston County

1983	First Urban Growth Area Boundary interjurisdictional agreement adopted
1988	Revised Urban Growth Area Boundary interjurisdictional agreement adopted
1990	State Growth Management Act (GMA) passage
1990	County passes interim downzone of 1 unit per 5 acres in most of rural area
1992	County-Wide Planning Policies adopted
1993	First post-GMA Regional Transportation Plan adopted
1994-95	GMA Comprehensive Plan amendments adopted by jurisdictions
1995-96	GMA implementing development regulations adopted by jurisdictions
1997	“Buildable lands” amendments to GMA passed
1998	Regional Transportation Plan updated
2002	Buildable Lands Report completed
2004	State deadline for GMA Comprehensive Plan updates

LIST OF BENCHMARKS

Benchmark 1: Residential Land Supply is Sufficient to Accommodate Projected Population Growth in Urban Areas.

Outlook: sunny, overall positive results

Assessment: A sufficient residential land supply exists to accommodate 25 years of projected population growth in all jurisdictions within Thurston County.

Benchmark 2: Achieved Net Residential Density Between 1996 and 2000 has been Consistent with Comprehensive Plans.

Outlook: partly sunny/partly cloudy

Assessment: The achieved net densities of residential zones have been consistent with Comprehensive Plans inside cities and towns. Densities in the unincorporated portion of the UGAs are lower than densities within the incorporated area.

Benchmark 3: Commercial/Industrial Land Supply is Sufficient to Accommodate Projected Growth in Employment in Urban Areas.

Outlook: sunny, overall positive results

Assessment: Sufficient commercial and industrial land supplies exist to accommodate 25 years of projected growth in employment in all urban jurisdictions within Thurston County.

Benchmark 4: Urban Areas Show an Increase in Their Share of Total Dwelling Units Over Time.

Outlook: stormy, concerns for the future

Assessment: Urban Areas have seen a decline in their share of total dwelling units over time.

Benchmark 5: The Percentage of Small Lots Created in Subdivisions in the Cities and UGAs Increases Over Time.

Outlook: partly sunny/partly cloudy

Assessment: The percentage of small lots created in subdivisions has been increasing over time in the cities. In the unincorporated urban growth areas, data reflect a large amount of variability, and significant trends are not yet observable.

Benchmark 6: Subdivision Density Increases Over Time In Urban Areas

Outlook: sunny, overall positive results

Assessment: Subdivision density in the urban areas has increased over time.

Introduction

Benchmark 7: The Share of Drive-Alone Commute Trips at Large Work Sites Decreases Over Time.

Outlook: partly sunny/partly cloudy

Assessment: The share of drive-alone commute trips at large work sites has decreased somewhat since 1993. However, this reduction is significantly below the 35% reduction target set by the state.

Benchmark 8: The Number of Transit Trips Per Capita Increases or Remains Steady Over Time.

Outlook: partly sunny/partly cloudy

Assessment: Transit trips per person have decreased in recent years. However, this was due to a major reduction in Intercity Transit's service area for several years due to revenue cuts. Beginning in 2003, a sales tax increase has allowed Intercity Transit to expand and restore service, which will likely increase transit trips per person in the near future.

Benchmark 9: Vehicle Miles Traveled (VMT) Per Capita Decreases Over Time.

Outlook: partly sunny/partly cloudy

Assessment: There has not been a sustained decrease in VMT per capita in recent years. However, this benchmark has to be monitored over a longer time period before truly meaningful assessments can be drawn. Land use policy -- the most important factor influencing overall vehicle miles of travel -- takes some time to implement.

Benchmark 10: Real Wages Increase Over Time.

Outlook: sunny, overall positive results

Assessment: Since 1990, real wages have increased in Thurston County.

Benchmark 11: Employment in Agriculture, Forestry, Fishing and Mining is Maintained or Increases Over Time.

Outlook: partly sunny/partly cloudy

Assessment: There has been a modest increase in employment in agriculture, forestry, fishing, and mining between 1990 and 2000. However, employment levels are down over the last two years of data.

Benchmark 12: Unemployment Rate Declines.

Outlook: partly sunny/partly cloudy

Assessment: The county's unemployment rate has risen steadily since 1999. However, the county has had a lower unemployment rate than that of the state.

Introduction

Benchmark 13: The Amount of Land Designated to Parks and Preserves Per Capita Remains Constant or Increases

Outlook: sunny, overall positive results

Assessment: Since 1991, the amount of parks and preserves per capita has been increasing in both the incorporated and unincorporated areas of Thurston County.

Benchmark 14: Acres of Open Space Per New Dwelling Unit in Subdivisions Increase or Remains Steady.

Outlook: sunny, overall positive results

Assessment: The amount of acres of open space per approved dwelling unit in subdivisions has been generally increasing over the last three decades.

Benchmark 15: Acres of Open Space Land Enrolled in the Open Space Tax Program Increase or Remains Steady Over Time.

Outlook: sunny, overall positive results

Assessment: The amount of open space land enrolled in the open space tax program has been generally increasing over time.

Benchmark 16: Acres of Right-of-Ways Per Approved Dwelling Unit in Subdivisions Decreases or Remains Steady.

Outlook: partly sunny/partly cloudy

Assessment: The number of acres of right-of-way per new dwelling unit has decreased somewhat in the cities and the rural county, while remaining steady in the urban growth areas. However, the 1990s show some variability in these generally positive trends.

Benchmark 17: The Number of Basins in Thurston County with a Total Impervious Area of Greater Than 10 Percent Does Not Increase Over Time.

Outlook: sunny, overall positive results

Assessment: The number of basins in Thurston County with a total impervious area of greater than 10 percent did not increase between 1985 and 2000.

Benchmark 18: The Solid Waste Recycle Rate Per Capita Increases Over Time.

Outlook: partly sunny/partly cloudy

Assessment: The recycle rate per capita has remained relatively steady over time..

Introduction

Benchmark 19: Highest Annual Readings for Particulate Matter (Pm10) Remain at or Below the National Standard of 150 Micrograms Per Cubic Meter.

Outlook: sunny, overall positive results

Assessment: The highest annual reading for particulate matter has remained below the national standard since 1990.

Benchmark 20: Highest Annual Readings for Carbon Monoxide Remain at or Below the National Standard of Nine Parts Per Million.

Outlook: sunny, overall positive results

Assessment: Carbon monoxide levels have generally decreased between 1995 and 2002.

Benchmark 21: Coho Salmon Production in the Deschutes River Increases or Remains Steady Over Time.

Outlook: stormy, concerns for the future.

Assessment: Coho salmon smolt production in the Deschutes River has dropped over time.

Benchmark 22: Median Household Income Keeps Pace with Average Housing Sale Price.

Outlook: stormy, concerns for the future

Assessment: In the last two years, the rise in home sale price has outpaced the rise in median household income.

Benchmark 23: The Housing Affordability Index for First Time Buyers Increases and the Affordability Index for All Buyers Remains Above 100.

Outlook: sunny, overall positive results

Assessment: The housing affordability index has remained above 100 for all buyers and has generally increased since 1994 for first time buyers.

Benchmark 24: The Apartment Vacancy Rate Remains at or Around Five Percent

Outlook: sunny, overall positive results

Assessment: The apartment vacancy rate in Thurston County has remained below five percent.

Possible “Outlooks” for Benchmarks



**sunny, overall positive
results**



partly sunny/ partly cloudy



stormy, concerns for the future

**Buildable
Lands****Related GMA Goals:**

GMA Goal (1) Urban growth. Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.

GMA Goal (2) Reduce sprawl. Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.

Indicators Used:

- Residential Land Supply
- Residential Land Demand
- Achieved Net Residential Density
- Commercial/Industrial Land Supply
- Commercial/Industrial Land Demand

Related County-Wide Planning Policies:

Urban growth within Thurston County will occur only in designated urban growth areas. The urban growth areas will be periodically reviewed.

Thurston County and each city and town will concentrate development in growth areas by: encouraging infill, phasing urban development outward from core areas, establishing mechanisms to ensure average residential densities are sufficient to accommodate the 20-year population projections, designate rural areas for low intensity, nonurban uses, requiring development to be configured so urban growth areas may eventually infill and become urban.

The state Office of Financial Management (OFM) growth management planning population projections will be used as the range of population to be accommodated for the coming 20 years.

Within the overall framework of the OFM population projections Thurston Regional Planning Council will develop county-wide and smaller area population projections based on current adopted plans, zoning, and environmental regulations and buildout trends.

A review and evaluation program pursuant to RCW 36.70A.215 (“Buildable Lands Program”), will be established, subject to availability of state funding.

Buildable Lands

Overview

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 which were 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. The answers to these questions will help communities in our county determine if they are developing the way they want to develop.

In 1997, the state Growth Management Act (GMA) was amended to add a new growth monitoring section. Meeting the requirements of this new legislation came to be commonly known as the “buildable lands program” because of the law’s emphasis on determining how much buildable land is in the urban areas of the six counties (Clark, King, Kitsap, Pierce, Snohomish, and Thurston) affected by these amendments to GMA. Two purposes for the program are written into the original legislation. The first is to “determine whether a county and its cities are achieving urban densities within urban growth areas.” The legislation requires that this information be provided in a review and evaluation report every five years. This is the first such report.

The second purpose of the legislation flows from the results of the data in the report. If the data shows that urban densities are not being achieved in the urban growth area, then the affected jurisdiction must “identify reasonable measures other than adjusting growth areas” which will have the likelihood of increasing densities in the future.

In addition to determining whether urban densities are currently being achieved, the legislation also requires that a land supply analysis be completed to determine if there is an adequate land supply for future growth within adopted urban growth boundaries. The land supply analysis must be completed for residential, commercial, and industrial lands and is a process of comparing Land Supply to Land Demand.

Three Benchmarks in the key areas of Residential Land Supply, Achieved Net Residential Density, and Commercial/Industrial Land Supply have been developed as the reporting mechanism for meeting buildable lands requirements in a way which is consistent with our region’s already established GMA monitoring program.

As dwelling units are the primary unit of measure on residential lands but employees are the measure on commercial and industrial lands, these different types of land use needed two separate methodological approaches. In the appendix of this report, technical documentation explains in detail the methodology behind the data reported here.

GMA Comprehensive Plans were adopted in our region by the end of 1995. As a result the 5 year evaluation time period in this report is 1996 to 2000.

**Buildable
Lands**

List of Benchmarks found in this chapter

Benchmark 1:

Residential Land Supply is Sufficient to Accommodate Projected Population Growth in Urban Areas.

Benchmark 2:

Achieved Net Residential Density Between 1996 and 2000 has been Consistent with Comprehensive Plans.

Benchmark 3:

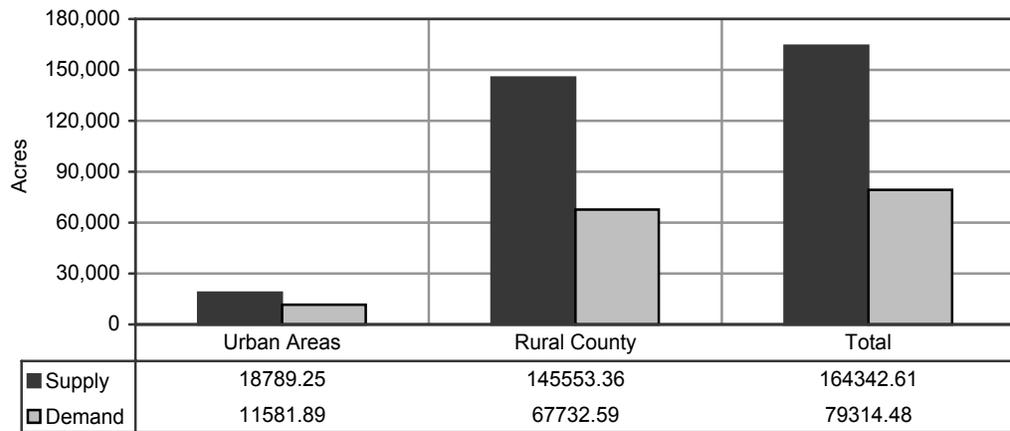
Commercial/Industrial Land Supply is Sufficient to Accommodate Projected Growth in Employment in Urban Areas.

Benchmark 1

Residential Land Supply is Sufficient to Accommodate Projected Population Growth in Urban Areas

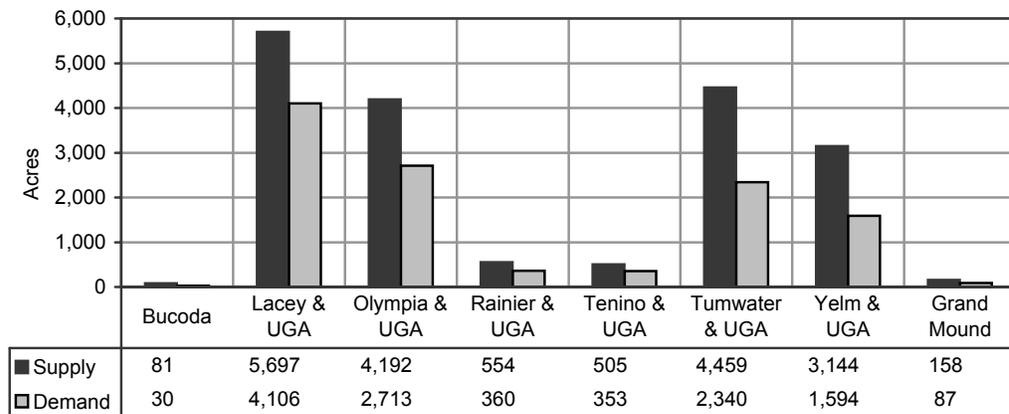


**Figure II-1
Residential Land Supply (2000) versus Demand (2025) for Urban and Rural Areas in Thurston County**



Source: Table II-1

**Figure II-2
Residential Land Supply (2000) versus Demand (2025) for Individual Jurisdictions within Thurston County**



Source: Table II-1

Assessment:
A sufficient residential land supply exists to accommodate 25 years of projected population growth in all jurisdictions within Thurston County.

Benchmark 1
Residential Land Supply is Sufficient to Accommodate Projected Population Growth in Urban Areas

Key Observations:

- In the year 2000, the urban area had over 18,000 acres of land zoned for residential uses available for new development. This estimate includes vacant and partially built parcels of land. Over 145,000 acres were available in the rural county.
- In the county as a whole, approximately 48 percent of the available residential land in 2000 will be consumed by residential growth by the year 2025, assuming the county experiences growth consistent with state and regional forecasts, and zoning remains consistent.
- In the urban area, approximately 38 percent of available residential land in 2000 will remain by the year 2025, assuming the county experiences growth consistent with state and regional forecasts, and zoning remains consistent.
- In the urban area, 1,697 acres of land were consumed by residential development between 1996 and 2000. The Lacey urban area had the highest residential land consumption of the cities. In the rural county, 11,881 acres of land was residentially developed in the same time period.
- In the urban area, the projected residential land consumption (Land Demand) for the time period between 2000 and 2015 is 5,092 acres. In the rural county, residential land demand between 2000 and 2015 is projected to be 35,643 acres.
- Between 1996 and 2000 infill development accounted for 12.6 percent of new dwellings in the urban area and 9.9 percent of acres developed over that time.
- Oversize urban lots are legal lots which are larger than is permissible under current zoning regulations and which are unlikely to be redeveloped or further subdivided. These legacy lots have a significant impact. Although only 2.8 percent of new permitted dwellings were located on oversize lots between 1996 and 2000, the acreage affected by those dwellings is 18.1 percent of total acres developed.

See Table II-1

See Table II-1

See Table II-1

See Table II-2

See Table II-2

See Table II-3

See Table II-4

For Further Information:

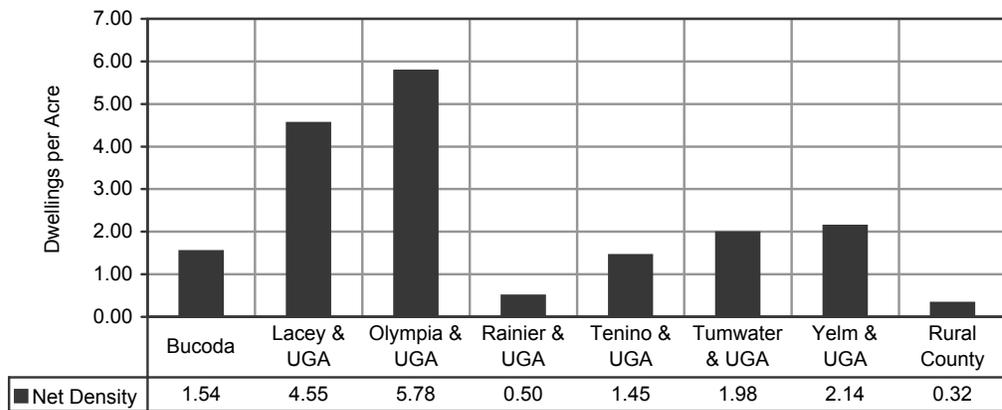
See discussion following the Benchmarks in this chapter.

Benchmark 2

Achieved Net Residential Density Between 1996 and 2000 has been Consistent with Comprehensive Plans

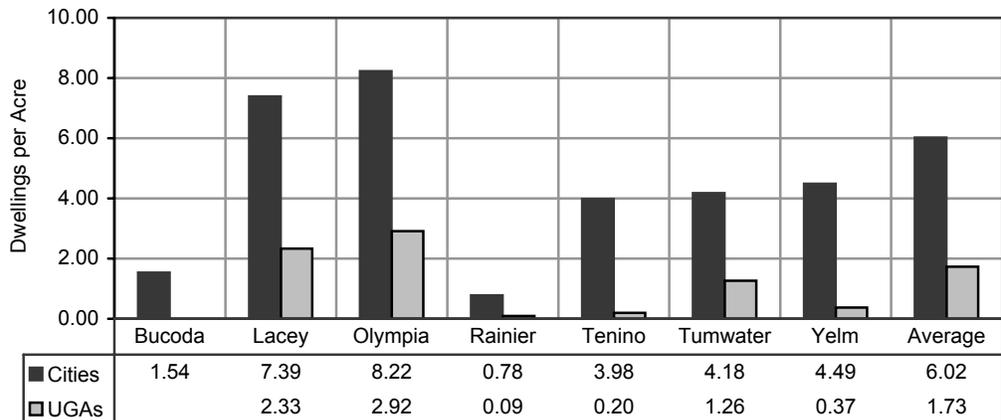


**Figure II-3
Achieved Net Residential Density in Urban and Rural Areas for Building Permits Presumed Built in the Five-Year Interval Between 1996-2000**



Source: Table II-5

**Figure II-4
Achieved Net Residential Density in Cities and UGAs for Building Permits Presumed Built in the Five-Year Interval Between 1996-2000**



Source: Table II-5

Assessment:
The achieved net densities of residential zones have been consistent with Comprehensive Plans inside cities and towns. Densities in the unincorporated portion of the UGAs are lower than densities within the incorporated area.

Benchmark 2

Achieved Net Residential Density Between 1996 and 2000 has been Consistent with Comprehensive Plans

Key Observations:

- Between 1996 and 2000 the average achieved net residential density for cities and towns in the county was 6.02 units per acres. Achieved net density in the residential zoning districts of the cities and towns was consistent with envisioned densities.
- Average achieved net density is lower in the unincorporated portions of the urban growth areas. This is to be expected in the smaller communities due to sewer unavailability. However, in the unincorporated urban growth areas of Lacey, Olympia, and Tumwater, this is because there has been a lot of development activity in older subdivisions and on lots not in plats. In both these cases, lot size is likely to be larger. These legacy lots are lowering the overall achieved densities of the urban growth areas. However, development located in subdivisions approved since 1995 is occurring at higher densities.
- Between 1996 and 2000, single-family development in the urban area had an achieved net density of 4.58 units per acre while this number was 16.91 units per acre for multifamily development. Most manufactured homes are located in the rural county where their achieved net density was 0.47 units per acre.
- In the rural county between 1996 and 2000, the achieved net density for single-family development (0.4 units per acre) was significantly higher than the 1 unit per 5 acre (0.2) density which most of the rural residential land is zoned for. One of the reasons for this is the large number of existing rural lots that are undersized relative to current zoning regulations in the rural area. Thirty seven percent of the new single-family homes in the county were located in the rural county over this time period.
- Residential development tends to be clustered around the medium density (3-8 du/acre) generalized zoning category in the urban area. This category also has the greatest number of both buildable acres and acres zoned for residential use.
- Residential growth occurs in both residential zoning districts and mixed use zoning districts.

See Tables II-5 and II-7

See Tables II-5, II-7, and II-10

See Table II-6

See Tables II-6 and II-11

See Table II-9

See Table II-8

For Further Information:

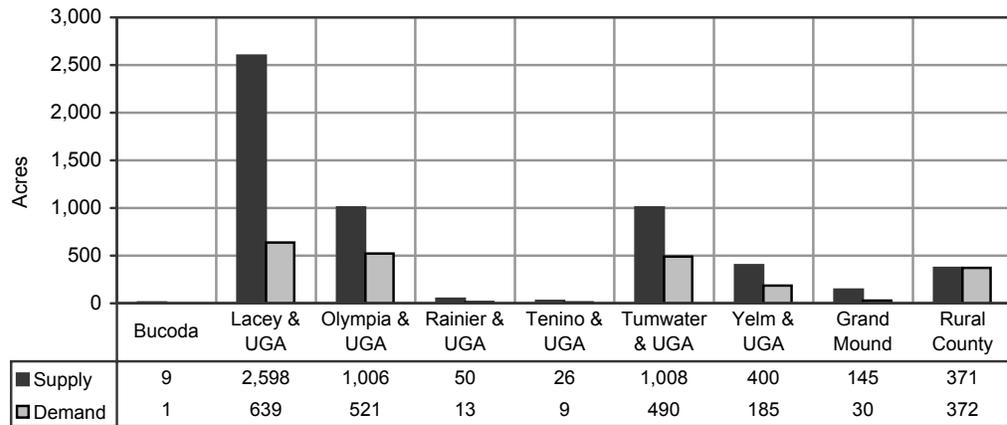
See discussion following the Benchmarks in this chapter.

Benchmark 3

**Commercial/
Industrial
Land Supply
is Sufficient to
Accommodate
Projected
Growth in
Employment in
Urban Areas**

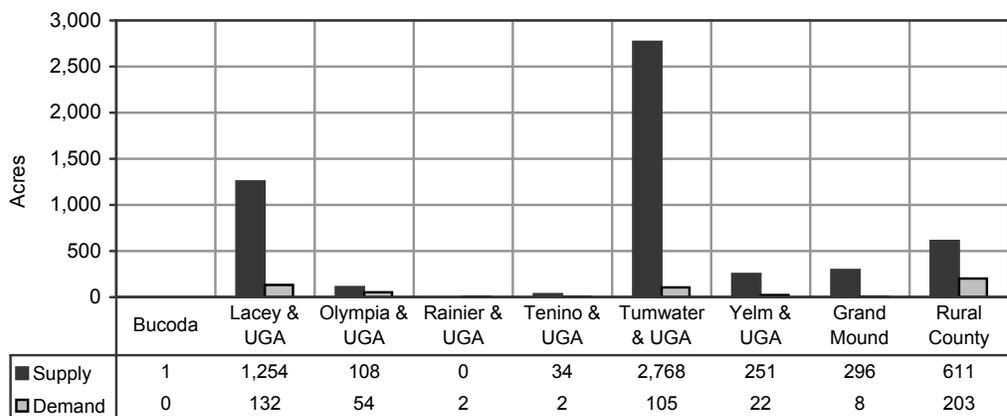


**Figure II-5
Commercial Land Supply (2000) versus Demand (2025) for
Individual Jurisdictions within Thurston County**



Source: Tables II-12 and II-13

**Figure II-6
Industrial Land Supply (2000) versus Demand (2025) for
Individual Jurisdictions within Thurston County**



Source: Tables II-12 and II-13

Assessment:
Sufficient commercial and industrial land supplies exist to accommodate 25 years of projected growth in employment in all urban jurisdictions within Thurston County.

Benchmark 3

Commercial/Industrial Land Supply is Sufficient to Accommodate Projected Growth in Employment in Urban Areas

Key Observation:

Land supply includes land with redevelopment potential, vacant land, and partially used land. Not surprisingly, there is more vacant and partially used land than there is land with redevelopment potential. In Olympia, the proportion of the land supply which lies in redevelopable land is larger than in the other jurisdictions.

See Table II-12

Projections for the urban area show that, approximately 36 percent of the available commercial land in 2000 and 7 percent of available industrial land will be consumed by the year 2025. A higher percentage of commercial lands will likely be consumed by 2025 as compared to industrial lands. The urban area is projected to have more of its industrial land remaining than the rural county does in the year 2025.

See Table II-13

In the urban area, approximately 381 acres of land were consumed by commercial development in the 5 years after Comprehensive Plan adoption. Approximately 132 acres were consumed by industrial development.

See Tables II-14 and II-15

In the urban area, the projected commercial land demand for the time period between 2000 and 2015 is 1,133 acres. Projected industrial land demand is 195 acres.

See Table II-13

In the rural County, the forecast shows that demand for commercial land is greater than supply by the year 2025. This is not perceived to be a problem however. Commercial development in the rural county tends to be very low intensity and results in an inefficient use of land. Over time, as this land becomes less available, new commercial development is likely to use land more efficiently. As such changes occur in development patterns, future estimates of land supply and demand would reflect those changes accordingly.

See Table II-13

This analysis is based on the assumption that new commercial and industrial development will occur at or above the current ratios of gross floor area (square feet) per acre (FAR).

See Tables II-16, II-17, II-18, and II-19

For Further Information:

See discussion following the Benchmarks in this chapter.

**Buildable
Lands****Additional Information****Benchmark 1**

Benchmark 1 addresses the following requirement of the Buildable Lands Statute (RCW 36.70A.215) that states that the buildable land program should:

“Determine whether there is sufficient land to accommodate the county-wide population projection established for the county pursuant to RCW 43.62.035 and the subsequent population allocations within the county and between the county and its cities and the requirements of RCW 36.70A.110.”

Determination of Land Supply

Land supply, or the amount of buildable land available for future residential, commercial, industrial, or government/institutional development, was determined by comparing the current and future land use of individual tax parcels.

Current land use was determined over a multi-year effort of base year data collection. It involved assembling a comprehensive database on residential, commercial, and industrial structures; an inventory of parks and public lands; and GIS layers identifying critical areas and current zoning designations.

Future land use was determined by assigning development assumptions to individual zoning districts based on information found in current comprehensive plans and development codes, recent development trends, and information provided by long range planners from jurisdictions within Thurston County. For further information on methodology used to determine land supply, please refer to the technical documentation in the appendix of this report.

The land status (percent developed - including redevelopment potential, undevelopable, and buildable land) for each individual tax parcel was determined based on the current and future land use conditions. Table II-20 provides an example of how this process works. Each of the tax parcels shown in the table are located in a mixed use zoning district, where residential density is allowable at 15-30 plus dwellings per acre, and expected to occur, on average, at 15 dwellings per acre. Each parcel is then run through a development stream to determine its land status. The first parcel, 62200300600 is a road or right-of-way. It is therefore categorized as completely developed, with no capacity for dwellings or commercial and industrial floor space. The second parcel, 370000000906 is 0.7 acres in size, and contains 4,320 square feet of commercial and industrial building space. It is categorized as a religious institution or private school. In Thurston County,

**Buildable
Lands**

a gross floor area to land area ratio of 3,000 square feet/acre indicates that a parcel is fully built, with no vacant land left for further development. The type of structure indicates that it is not likely to be redeveloped. Therefore this parcel is considered fully-developed.

Further down the example table is parcel 12704440400. This current land use of this parcel is dwelling - residential as it contains 1 dwelling unit. The parcel is relatively large, however, at 2.4 acres. Using general assumptions based on the zoning district being high density multifamily, the existing dwelling is assigned one tenth of an acre as developed land. The remainder of the land is buildable, and separated into residential or commercial components of buildable lands, based on further generalized assumptions on how development is expected to occur. The estimates of land availability can then be converted to estimates of capacity, described in terms of additional dwelling units or additional commercial square feet, the land can accommodate.

All of this detail is not to say that it is in any way possible to predict how development will occur on an individual tax parcel. Each of the assumptions represents a wide range of variability. The goal of the process is to model an average based on the best available data. Aggregating tax parcel information to a neighborhood or planning area level begins to show how current government regulations and existing land use patterns can be used to determine the generalized capacity of the land to hold future development.

Determination of Land Demand

The most recent population and employment forecast for Thurston County was formally adopted by the Thurston Regional Planning Council in 1999. In early 2002, the county-wide forecast was re-examined subsequent to the release of the new state Office of Financial Management population forecast. Its medium scenario regional forecast was found to fall within one percent of the new state medium range forecast, and the Thurston Regional Planning Council approved a motion to continue using the 1999 forecast for planning purposes.

The county-wide forecast was developed using a two-stage computer modeling process. In the county-wide model, the underlying premise is that growth is generated by job opportunities. More jobs mean more people; fewer jobs mean fewer people. Thus the county-wide forecast is conducted using the "EMPFOR" model which forecasts employment and labor force needs, linking an econometric module to a demographic one.

The output of the county-wide employment and population forecasting model EMPFOR is used to generate county-wide housing demand by type. A second model, "POPFOR," allocates the future housing and population to smaller

Buildable Lands

areas within Thurston County. The methodology used by POPFOR is a combination of two common approaches to small-area population forecasting: the ratio method and the area method.

With the ratio method, future residential growth is assigned to a location based on its recent share of a larger area's growth. For example, if Olympia has had 15 percent of Thurston County's growth since 1990, the ratio method would assign 15 percent of the future growth. With the area method, growth is assigned according to the available area for development. More growth is assigned to the areas with more capacity.

POPFOR assigns future growth first to "sub-areas" of the county based on their shares of the growth during the 1990s. It does separate calculations for single-family units, multifamily units, and manufactured homes. Then within each sub-area, POPFOR uses the area method to assign growth to numerous small "forecast analysis zones" (FAZs), based on their capacity for growth (buildable acres times density). Population occupying those dwellings is calculated based on household sizes and vacancy rates derived from the Census. Then the model revises the available acres to account for land consumption and repeats the cycle. POPFOR forecasts in five-year intervals to the year 2025.

For further information of the population and employment forecast, please refer to the Population and Employment Forecast for Thurston County, Final Report, 1999, and Appendix, 1999.

Benchmark 2

Benchmark 2 addresses the housing section of the following requirement in the Buildable Lands Statute (RCW 36.70A.215) that states that the buildable land program should:

“Determine the actual density of housing that has been constructed and the actual amount of land developed for commercial and industrial uses within the urban growth area since the adoption of a comprehensive plan and ... review commercial, industrial, and housing needs by type and density range to determine the amount of land needed for commercial, industrial, and housing for the remaining portion of the twenty-year planning period used in the most recently adopted comprehensive plan.”

Determination of Achieved Net Density

Achieved net residential density was determined by examining trends over five years of building activity, as indicated by the issuance of building permits. Buildable Lands legislation requires that in making the density determination, the time period be for the five-years which followed adoption of the GMA

Buildable Lands

comprehensive plan. In our region, this process was completed by our jurisdictions by the end of 1995. The achieved density numbers in this table are for residential lands only and are based on building permit activity. The achieved density calculation includes both fully built and partially built acres. Fully-built meaning that the land can't accommodate another dwelling unit based on current zoning, and partially-built meaning that there is room for additional dwellings based on current zoning. It is also a net density measure, meaning that it excludes rights-of-way, critical areas, and open space.

Achieved net density is determined by comparing development activity, as measured from building permits, to land area. Building permits are collected on an annual basis and entered into a database that is linked by tax parcel number to a land use inventory.

On any parcels containing a total of more than one dwelling unit in the year 2000, the developed portion of the parcel was directly proportional to the amount of permits issued for new dwelling units on the parcel within the last five years. That is, any development on a parcel prior to 1995 was excluded from the analysis.

It is important to note that many of the urban growth areas in Thurston County are developing at rural densities. In the urban growth areas of Tenino, Rainier, and Yelm, rural County zoning is applied until such time as those areas are annexed into the adjacent cities. In the urban growth areas of Lacey, Olympia, and Tumwater, urban zoning districts are in place, but development is limited by the availability of urban services such as water and sewer, which will be gradually extended to service the entire growth area. In the interim, development is allowed on legally platted lots that may be oversized with respect to current zoning regulation.

It is important to note that many zoning districts within Thurston County saw little or no development activity within the last five years. In these areas, there was simply an inadequate amount of information to determine whether or not achieved densities were consistent with zoned densities.

See Table II-7

In zoning districts that allow mixed residential and commercial activity, inadequate information was available to determine how achieved net residential density compared to zoned density, as some parcels may have developed as mixed residential and commercial projects. In general, however, the mixed use zones achieved relatively high net densities.

See Table II-8

Discussion of Achieved Net Density

While Tables II-7 and II-8 provide insight into the achieved net residential density by individual zoning district, Table II-9 provides a summary of achieved net density by generalized zoning category. Generalized zoning categories were developed to provide a comparison across different naming conventions and slightly different zoning density ranges used in Thurston

Buildable Lands

County jurisdictions. It should be noted that the City of Lacey generally achieves a gross density (density including critical areas, open space tracts, and rights-of-way) consistent with their zoning density, while the cities of Olympia and Tumwater have net densities that are more consistent with their zoned densities. The density ranges overlap to a considerable degree as zoning district density ranges overlap. One additional thing of note is that the Lacey zoning districts of Low Density Residential (LD 3-6) and Low Density Residential (LD 0-4) were achieving net densities of 6.78 and 5.40 respectively. Both districts achieved gross densities of 3.84 and 3.79 respectively in their platted subdivisions. The closeness of both these figures suggests that market factors in Lacey are stimulating growth at the upper end of allowable range in the LD 0-4 district, and the lower end of the allowable density range in the LD 3-6 district. For more information on how subdivision gross densities compare to achieve net densities in residential zoning districts, please refer to the technical documentation in the appendix of this report.

See Figures II-7 and II-8

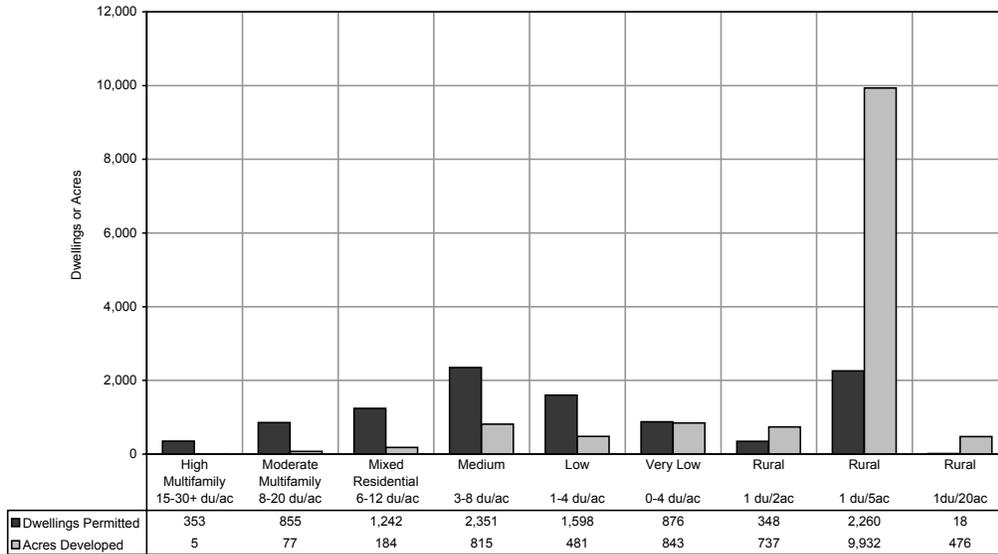
Figure II-7 shows the distribution of dwellings permitted and acres developed, by generalized zoning category. Of note is the bell-shaped distribution of dwellings permitted, centered around the medium density (3-8 du/acre) generalized zoning category. This zoning category also has the greatest amount of total acres zoned for residential uses, and the greatest amount of buildable acres available for development of all the urban zoning categories. The typical dwelling built in this density of zoning is a single-family home, although other types of dwellings are permissible in many specific zoning districts.

Another peak on Figures II-7 and II-8 is found in the rural 1 du/5 acres generalized zoning category. Building activity, as measured by permits, almost equals that of the urban medium density generalized zoning districts. Due to the low density of development, however, the amount of land consumed to accommodate essentially the same number of dwellings exceeds the medium density district more than 10 fold. The amount of buildable land in the rural zoning district exceeds the medium density urban zoning district 15 fold. Single-family homes, as well as manufactured homes, are commonly built in this rural zoning district.

A simple supply and demand comparison suggests that the abundance of land available in the medium density and rural zoning categories results in the land being relatively affordable for single-family home construction. Bearing in mind that a growth management goal is to concentrate growth in urban areas, it is important to note that the rural area is likely to continue to see significant amounts of residential development unless policies are put in place to constrain land supply in rural regions.

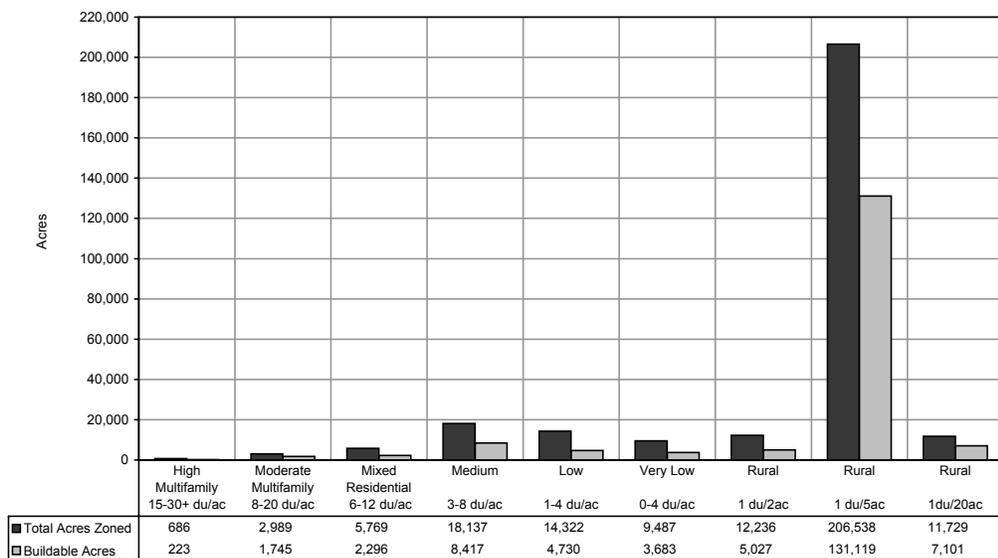
**Buildable
Lands**

**Figure II-7
Dwellings Permitted and Acres Developed by Generalized
Density Category, 1996-2000**



Source: Table II-9

**Figure II-8
Total Residential Acres Zoned, and Total Residential Buildable
Acres by Generalized Density Category, 1996-2000**



Source: Table II-9

Buildable Lands

Urban Growth Areas

Figure II-3 shows net density of new development for each of the jurisdictions in Thurston County's entire urban area, that is, for the area within city limits in combination with the unincorporated urban growth area. Net density is measured for five years of development only, between 1996 and 2000, in keeping with buildable lands legislative requirements. Figure II-4 separates out the densities within city limits from the unincorporated urban growth area. The good news is that all cities are consistent with their Comprehensive Plan densities, inside city limits. The achieved densities in the UGAs, however, are consistently lower than within city limits. It is the lower densities in the UGAs which significantly lower the overall densities for each city's total urban area, as shown in Figure II-3.

There are many possible explanations for this distinct difference in development density between the incorporated and unincorporated urban areas. In the cities and towns in south Thurston County, Yelm, Rainier, and Tenino (Bucoda does not have an UGA) low UGA densities of an average of one dwelling unit per five acres are consistent with zoning density. This is due to the lack of sewer and water infrastructure available to support denser growth. As the infrastructure is put into place, and the cities and towns annex surrounding regions, zoning densities will increase to urban rather than rural densities.

In the UGAs of Lacey, Olympia, and Tumwater, however, urban zoning densities are already in place. Development is dependent on the availability of sewer and water infrastructure, but as the main infrastructure is already in place, only an extension of service is required. In addition, many regions of these UGAs are already served by water and sewer lines, and much of the UGAs can be considered urban in character. The question remains then as to why new development in the UGAs is occurring below allowable zoned densities.

The likely explanation can be found in Table II-10, which examines the development density of new development in the UGAs of Lacey, Olympia, and Tumwater, in relationship to the date of lot approval. TRPC maintains a database on all subdivisions that have been approved since 1970. By cross-referencing the recent development trends with this database, it was apparent that there has been a lot of development activity in older subdivisions and on lots not in subdivisions at all. In both those cases, lot size is likely to be larger than that allowable under current zoning densities. In other words, one of the reasons for lower densities in the UGAs is the large supply of "oversized" legacy lots. These lots are oversized only in terms of the current allowable minimum zoning density. Zoning density changes over time, but the impacts of new regulations is not applied retroactively to legal lots already in existence.

**Buildable
Lands****Land Needs**

Benchmark 1 compares land supply versus demand for a 25-year planning horizon for Thurston County, showing that sufficient land supply exists for residential development if development occurs at rates equal or less than those forecast by the State Office of Financial Management and the Population and Employment Forecast of Thurston County provided by the Thurston Regional Planning Council. This analysis takes into account not only current zoning regulations, but also forecast changes in zoning as annexation occurs and urban services are extended to the urban growth areas of Tenino, Rainier, and Yelm, as agreed upon in interjurisdictional agreements between the cities and towns of south Thurston County and Thurston County. The forecast also examines changes in housing needs related to demographic trends, and rates of infill development in urban cores.

The buildable lands statute also requires that current trends be extended for the remainder of a 20-year planning horizon to determine if adequate land supply exists for future growth. Table II-2 presents the results of this simple extension of current building trends. Again, sufficient land supply is available to accommodate growth at current trends.

Benchmark 3

Benchmark 3 addresses the commercial and industrial sections of the following requirement in the Buildable Lands Statute (RCW 36.70A.215) that states that the buildable land program should:

“Determine the actual density of housing that has been constructed and the actual amount of land developed for commercial and industrial uses within the urban growth area since the adoption of a comprehensive plan and ... review commercial, industrial, and housing needs by type and density range to determine the amount of land needed for commercial, industrial, and housing for the remaining portion of the twenty-year planning period used in the most recently adopted comprehensive plan.”

Determination of Land Supply

Land supply, or the amount of buildable land available for future residential, commercial, industrial, or government/institutional development, was determined by comparing the current and future land use of individual tax parcels. The first step in determining land supply was the development of the base year (2000) inventory of commercial/industrial land and buildings. This was followed by the development and application of the development assumptions for commercial/industrial lands, that is, those related to evaluating fully-developed and partially-developed parcels, as well as the redevelopment potential of parcels. The final step in determining land supply was the evaluation of the land status of each parcel based on

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the current use and the allowable future of the parcel. The development assumptions were then worked through for each individual parcel to determine commercial/industrial land supply, that is, whether a parcel is undevelopable, buildable, or developed. This also allowed for the determination of capacity stated in terms of commercial/industrial square feet, for each parcel, given current development regulations. For further details on this process, please refer to the section in this document under Benchmark 1, or the technical documentation in the appendix of this report.

Determination of Land Demand

The Population and Employment Forecast provided an estimate of the number of employees forecast to work in Thurston County in the year 2025. The forecast did not, however, determine how many acres of land would be required to support the growth in employment. This was estimated through the Buildable Lands program and required two major conversion factors. First, the number of employees was converted to the amount of square feet in commercial or industrial floor space needed to accommodate the employees. Second, the amount of square feet was then converted to land needs in acres. Both of these conversion factors relied heavily on existing development trends found in Thurston County. Details on this methodology can be found in the technical documentation in the appendix of this report.

Other Key Elements of the Buildable Lands Analysis

The determination that sufficient land supply exists in Thurston County to accommodate projected growth is based on a variety of assumptions, many of which were used in the most recent TRPC Population and Employment Forecast to forecast residential land demand and employment. One of the major accomplishments of the Buildable Lands work program was to gather and analyze data in order to examine several of these assumptions in order to determine 1) if the assumptions were valid and reasonable, and 2) if any further refinements were needed to the population and employment forecast model and allocation routines.

TRPC is currently updating the Population and Employment Forecast as part of their periodic (3 to 5 year) update cycle. Modifications to this forecast are expected to be completed in 2004, in time to provide input to the next Buildable Lands report, due within 5 years of this report.

The sections below provide data on some of the recent development trends in Thurston County, as well as basic information on Capital Facilities.

Oversized Urban Lots

In the discussion on achieved net density, it was noted that development densities in the UGAs was consistently lower than zoned densities. This trend

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was attributed to the large inventory of existing legacy lots, which tend to be larger than new lots. This raised an important question. Just how much development is occurring on oversized urban lots?

In this case, oversized lots were defined to have the following characteristics. First of all, they should be relatively large, yet small enough that future subdivision is unlikely. Lots meeting this criteria were between 1 and 5 acres in size. Second of all, lots can only be oversized relative to their zoning. A 5-acre lot in rural zoning would be considered average sized. The analysis was therefore constrained to only those lots that were found in the urban regions of the County, which includes all of the area within existing city or town limits, and the urban growth areas of Lacey, Olympia, and Tumwater. Finally, large lots accommodating a large amount of dwelling units were not considered oversized relative to their use. For this reason, only those lots that accommodated single-family dwellings or manufactured homes were included in the analysis. Manufactured home parks are excluded. These criteria were used to isolate lots that were unlikely to be redeveloped or further subdivided in the future. Trends were only examined for those lots developed within the last five years, 1996-2000, as this shows development or market decisions that are in place today. Finally, it should be noted that some jurisdictions require that new homes placed on oversized lots be situated in a manner that allows for further redevelopment of the tax parcel, should urban services such as sewer and water, become available. The choice on whether or not to redevelop lies with the individual land owner.

Table II-4 provides a detailed analysis of these trends. When development is measured in terms of number of dwelling units, the impact of development on oversized lots seems relatively small. Only 2.8 percent of development in urban areas occurs on these lots. It is apparent, however, that development on oversized lots occurs more often (6.9 percent of total development) in the UGAs than within existing city limits (1.2 percent). It is when development is measured in terms of total acres developed that the trends become startling. Almost 24 percent of the land developed in the UGAs is on oversized lots, or lots greater than one acre in size. Eighteen percent of all land developed in urban areas as a whole is on oversized lots. If these trends continue, then our supply of land that can be realistically expected to be available for further development will decrease at a far greater rate than anticipated. An unknown is whether or not these oversized parcels will be subdivided and redeveloped during the 25-year planning horizon.

Rural Development

Development trends on rural lands present another interesting aspect of the overall development picture in Thurston County. In the areas outside of the UGAs, rural development can occur at development densities that range from 2 dwellings per acre (which is typically considered suburban) to 1 dwelling

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See Table II-11

per 20 acres, on areas zoned to protect long-term agriculture. The vast majority of land area where residential development is permissible is zoned at 1 dwelling unit per 5 acres in order to maintain the rural characteristics of the land.

Efforts to downzone the rural county to rural development densities took place largely in 1990 although modifications to zoning regulations took place during the adoption of the County Comprehensive Plan in 1995, and can occur annually during the Comprehensive Plan amendment process. Prior to 1990, however, it was permissible to create legal lots of varying sizes in the rural County. Table II-11 provides a detailed look at the inventory of the some 6,000 existing or legacy lots that are currently undersized relative to current zoning regulations. The majority of these lots, some 3,000, are in the Rural Residential/Resource zoning district, zoned at a density of 1 dwelling unit per 5 acres. The average lot size of these undersized lots is 2.5 acres, or slightly half the size considered desirable under current zoning regulations. Of the total fully-developed lots in this zoning district, the average lot size is 3.5 acres, or slightly larger than the remaining lots. The average lot size of those lots developed between 1996 and 2000 is also 3.5 acres. Taking the number of dwellings permitted in the 1996-2000 5-year interval and projecting it out into the future, it is estimated that there is more than 8 years worth of supply of these legacy lots already existing on the ground. The same sort of analysis can be performed for each of the County's rural zoning districts. The implications of this large supply of undersized rural lots, combined with development occurring on oversized urban lots, is that the line between urban and rural in Thurston County becomes very hard to find, despite quite significant differences in zoning densities. A decade has already passed since much of the current zoning was put into place in Thurston County. It quite possibly could be more than another decade before the effects of those decisions are fully seen on the ground, due to the time lag between lots being subdivided and when they are built.

Infill

Table II-3 provides details on trends in infill development in Thurston County in the last five years. Infill development generally refers to residential development that does not occur on large tracts of vacant land, such as in a new subdivision. For the purposes of this analysis, infill development is defined as any residential development that occurred within existing city limits or in urban growth areas and that did not occur on subdivisions platted since 1970. In addition, infill can only take place on lots consistent with, or smaller than, zoned densities. For this reason, a threshold of one half acre was used for Lacey, Olympia, Tumwater, and Yelm, and a threshold of one acre was used for the smaller cities and towns of Bucoda, Tenino, Rainier. A large amount of infill occurs in the form of multifamily dwellings. The minimum lot size for multifamily development used in this analysis was three acres.

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The first thing to note in Table II-3 is that the majority of infill development comes in the form of multifamily dwellings. The Boardwalk Apartments in downtown Olympia account for much of the infill development that has occurred in this region in the last 5 years. Another thing to note is that more than half of the infill development captured in the last five years occurred within existing city limits. This trend may be a little deceiving, however, as proportional to total development, infill trends hovered around 12 to 13 percent, for both cities and UGAs. While this seems relatively significant when measured in terms of dwelling units, again taking a look at total acres developed provides a different picture. In the UGAs, only 3.1 percent of the land developed occurred on infill sites. The remainder occurred on larger lots, or in subdivisions. This compares to almost 10 percent in the cities. The simple reason for this is that infill development utilizes land in a more efficient manner than other forms of development.

Housing Mix

Figure II-7 provides an overview of the number of dwellings permitted and land developed in each of the generalized zoning categories in Thurston County. The jurisdictions within Thurston County offer a broad range of zoning categories to accommodate single-family, multifamily, and manufactured homes. This range of housing opportunities provides choices for housing to support the large variety of needs of the county's population. In general, multifamily homes are found in the high multifamily, moderate multifamily, and mixed residential zoning districts. Single-family homes are generally built in the mixed residential zoning district through rural zoning districts. Manufactured homes mainly found in rural zoning districts or in manufactured home parks that can be located in many zoning districts in the county.

Table II-6 shows the distribution new dwelling units, by type, that have been permitted within the 5-year monitoring interval of 1996-2000. In the county as a whole, 64 percent of new dwellings were single-family, 20 percent manufactured homes, and 16 percent multifamily. Single-family homes were a popular choice in all jurisdictions in Thurston County, and in the urban and rural areas. Manufactured homes were most popular in the rural county, but also achieved a high market share, 22 percent, in the urban growth areas. Manufactured homes are built as a solitary dwelling unit on a tax parcel, as a component of manufactured home parks, and increasingly often as a family member unit, or in addition to an existing single-family home on a rural lot.

Multifamily housing is found predominately within existing city limits, where it captures 32 percent of the market share. Ten percent of the market share in the UGAs is captured by multifamily housing.

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The effects of dwelling type on land consumption can be quite startling. Overall, multifamily housing development, from duplexes to large apartment complexes, has achieved a net density of almost 19 units per acre within city limits, and almost 9 units per acre in the UGAs. This compares to single-family homes where development is achieved at net densities of 5.9 units per acre and almost 3 units per acre in cities and UGAs respectively.

Capital Facilities

Table II-21 provides an inventory of capital facilities and other land use categories of special planning interest in Thurston County. Categories included in the inventory are: local government facilities, parks, state and federal land and facilities, tribal land and facilities, roads, railroads, and rights-of-way, religious institutions and private schools, and subdivision open space. These areas are of special planning interest for a variety of reasons. Some categories represent non-residential uses within residential zoning districts such as schools. Others provide indications of how much green space (parks and open space) currently are set aside in this county.

Overall, these areas of special interest, which generally do not provide additional dwellings or new commercial and industrial floor space, comprise 12 percent of the land area in Thurston County. Within city limits, they comprise some 30 percent, in the UGAs some 16 percent, and in the rural county 10 percent. This information is important to assessing the amount of land actually available to support future private development of residences and of commercial and industrial uses.

**Table II-1
Residential Land Supply and Demand, Thurston County**

Jurisdiction	2000 Residential Land Supply (acres)	20 Year Forecast		25 Year Forecast	
		2020 Residential Land Demand (acres)	Percent Remaining in 2020	2025 Residential Land Demand (acres)	Percent Remaining in 2025
Bucoda	81	26	67%	30	63%
Lacey & Lacey UGA	5,697	3,583	37%	4,106	28%
Olympia & Olympia UGA	4,192	2,305	45%	2,713	35%
Rainier & Rainier UGA	554	322	42%	360	35%
Tenino & Tenino UGA	505	319	37%	353	30%
Tumwater & Tumwater UGA	4,459	1,788	60%	2,340	48%
Yelm & Yelm UGA	3,144	1,365	57%	1,594	49%
Grand Mound UGA	158	76	52%	87	45%
Total Urban Areas	18,789	9,785	48%	11,582	38%
Rural Unincorporated County	145,553	56,900	61%	67,733	53%
Thurston County Total	164,343	66,685	59%	79,314	52%

Sources: Buildable Lands Work Program, TRPC; Forecast of Land Demand - Population and Employment Forecast for Thurston County, 1999, TRPC

Table II-2
Simple Projection of Residential Development Trends to Year 2015

Jurisdiction	2000 Residential Land Supply (acres)	Simple Projection of Current Trends			
		Land Consumption between 1996- 2000 (acres)	Projected Land Consumption 2000-2015 (acres)	Land Remaining for Development in 2015 (acres)	Percent Remaining in 2015
Bucoda	81	16	49	32	39%
Lacey & Lacey UGA	5,697	654	1,962	3,735	66%
Olympia & Olympia UGA	4,192	327	981	3,211	77%
Rainier & Rainier UGA	554	130	390	164	30%
Tenino & Tenino UGA	505	38	114	391	77%
Tumwater & Tumwater UGA	4,459	335	1,005	3,454	77%
Yelm & Yelm UGA	3,144	197	591	2,553	81%
Total Urban Areas	18,632	1,697	5,092	13,540	73%
Rural Unincorporated County	145,553	11,881	35,643	109,910	76%
Thurston County Total	164,185	13,578	40,735	123,450	75%

Source: Buildable Lands Work Program, TRPC

**Table II-3
Trends in Infill Development as Measured by Permitted Dwellings and by Acres Developed
For Building Permits Presumed Built in the Five Year Interval 1996-2000**

Jurisdiction	Single-Family	Multi-family	Man. Homes	Total Infill Dwellings	Total Permitted Dwellings	Infill		Total Acres Developed	Infill Developed Acres as a Percent of Total
						Dwellings	As Infill		
Bucoda	2	0	5	7	25	28.0%	2.3	16.3	14.3%
Lacey	60	149	2	211	2,124	9.9%	16.7	287.4	5.8%
UGA	64	40	9	113	854	13.2%	19.9	366.7	5.4%
Total	124	189	11	324	2,978	10.9%	36.6	654.1	5.6%
Olympia	119	439	2	560	1,450	38.6%	33.0	176.3	18.7%
UGA	20	2	1	23	440	5.2%	6.2	150.8	4.1%
Total	139	441	3	583	1,890	30.8%	39.2	327.2	12.0%
Rainier	6	0	4	10	60	16.7%	6.9	77.2	9.0%
UGA	0	0	0	0	5	0.0%	0.0	53.1	0.0%
Total	6	0	4	10	65	15.4%	6.9	130.3	5.3%
Tenino	11	0	5	16	50	32.0%	4.2	12.6	33.1%
UGA	0	0	0	0	5	0.0%	0.0	25.4	0.0%
Total	11	0	5	16	55	29.1%	4.2	37.9	11.0%
Tumwater	27	26	1	54	344	15.7%	8.3	82.3	10.1%
UGA	7	2	3	12	318	3.8%	3.3	252.2	1.3%
Total	34	28	4	66	662	10.0%	11.7	334.5	3.5%
Yelm	7	2	2	11	379	2.9%	1.5	84.4	1.8%
UGA	0	0	0	0	42	0.0%	0.0	112.8	0.0%
Total	7	2	2	11	421	2.6%	1.5	197.2	0.8%
Total Cities	232	616	21	869	4,432	19.6%	73.0	736.5	9.9%
Total UGAs	91	44	13	148	1,664	8.9%	29.5	961.0	3.1%
Total Urban Areas	323	660	34	1,017	6,096	16.7%	102.4	1,697.5	6.0%
Rural Unincorporated County¹	0	0	0	0	3,843	0.0%	0.0	11,880.9	0.0%
Thurston County Total	323	660	34	1,017	9,939	10.2%	102.4	13,578.4	0.8%

Source: Buildable Lands Work Program, TRPC

Note: Definition of Infill Growth in this analysis - Infill can only occur in urban areas, defined for this analysis as within incorporated city limits or in urban growth areas. Infill does not occur on large tracts of land, therefore all parcels undergoing plat activity to subdivisions after 1970 were excluded. Single family infill may only occur on relatively small lots at densities consistent with zoning - for this analysis a threshold of lot size of one half acre was used for Lacey, Olympia, Tumwater, and Yelm and a threshold of one acre was used for Bucoda, Tenino, and Rainier. The threshold for multi-family development was 3 acres. ¹Includes Grand Mound UGA

**Table II-4
Trends in Recent Development on Oversized Urban Lots
For Building Permits Presumed Built in the Five Year Interval 1996-2000**

Jurisdiction	Dwellings on lots sized			Dwellings on lots sized		Dwellings on lots sized		Total Dwellings on Oversized Lots	Total Permitted Dwellings	Dwellings on Oversized Lots as a Percent of Total		Acres Developed on Oversized Lots as a percent of Total
	1 acre to less than 2 acres	2 acres to less than 3 acres	3 acres to less than 5 acres	on 3 acres	on 3 to 5 acres	on 5 to 10 acres	on 10+ acres			on Oversized Lots	on Oversized Lots	
Total	3	0	0	3	25	12.0%	2.9	16.3	17.9%			
Lacey	4	0	2	6	2,124	0.3%	13.4	287.4	4.7%			
UGA	20	3	10	33	854	3.9%	67.5	366.7	18.4%			
Total	24	3	12	39	2,978	1.3%	80.8	654.1	12.4%			
Olympia	5	3	2	10	1,450	0.7%	15.9	176.3	9.0%			
UGA	8	5	2	15	440	3.4%	21.9	150.8	14.5%			
Total	13	8	4	25	1,890	1.3%	37.8	327.2	11.6%			
Rainier	21	1	1	23	60	38.3%	25.7	77.2	33.3%			
UGA	1	0	0	1	5	20.0%	1.6	53.1	3.0%			
Total	22	1	1	24	65	36.9%	27.3	130.3	20.9%			
Tenino	0	0	0	0	50	0.0%	0.0	12.6	0.0%			
UGA	0	1	0	1	5	20.0%	2.0	25.4	7.9%			
Total	0	1	0	1	55	1.8%	2.0	37.9	5.3%			
Tumwater	1	2	2	5	344	1.5%	10.5	82.3	12.8%			
UGA	22	9	12	43	318	13.5%	83.6	252.2	33.2%			
Total	23	11	14	48	662	7.3%	94.2	334.5	28.1%			
Yelm	3	2	1	6	379	1.6%	11.4	84.4	13.5%			
UGA	7	7	8	22	42	52.4%	51.0	112.8	45.2%			
Total	10	9	9	28	421	6.7%	62.4	197.2	31.7%			
Total Cities	37	8	8	53	4,432	1.2%	79.8	736.5	10.8%			
Total UGAs	58	25	32	115	1,664	6.9%	227.6	961.0	23.7%			
Total Urban Areas	95	33	40	168	6,096	2.8%	307.4	1,697.5	18.1%			
Rural Unincorporated County¹	0	0	0	0	3,843	0.0%	0.0	11,880.9	0.0%			
Thurston County Total	95	33	40	168	9,939	1.7%	307.4	13,578.4	2.3%			

Source: Buildable Lands Work Program, TRPC

Note: Definition of Oversized Urban Lots in this analysis - Oversized lots are legal lots that were approved and platted prior to current zoning regulations, and are larger than lots currently permissible under current zoning regulations. Only those lots unlikely to be redeveloped or further subdivided in the future were selected. Lots that met these criteria were between 1 and 5 acres in size, and were not located in the rural county. ¹Includes Grand Mound UGA

Table II-5
Average Achieved Net Density, by Jurisdiction
For Building Permits Presumed Built in the Five Year Interval 1996-2000

Jurisdiction		Average Achieved Net Density		Dwellings	Land Consumption	
		DU / Fully and Partially-Built Acre	DU / Fully-Built Acre	Permitted Dwellings	Fully and Partially-Built Acres	Fully-Built Acres
Bucoda	Total	1.54	1.54	25	16	16
Lacey	City	7.39	7.96	2,124	287	267
	UGA	2.33	4.46	854	367	191
	Total	4.55	6.50	2,978	654	458
Olympia	City	8.22	9.37	1,450	176	155
	UGA	2.92	3.81	440	151	116
	Total	5.78	6.99	1,890	327	270
Rainier	City	0.78	1.47	60	77	41
	UGA	0.09	0.23	5	53	22
	Total	0.50	1.03	65	130	63
Tenino	City	3.98	3.98	50	13	13
	UGA	0.20	0.25	5	25	20
	Total	1.45	1.68	55	38	33
Tumwater	City	4.18	6.05	344	82	57
	UGA	1.26	3.81	318	252	83
	Total	1.98	4.72	662	335	140
Yelm	City	4.49	6.00	379	84	63
	UGA	0.37	0.40	42	113	105
	Total	2.14	2.50	421	197	168
Total Cities		6.02	7.25	4,432	736	611
Total UGAs		1.73	3.09	1,664	961	538
Total Urban Areas		3.59	5.31	6,096	1,697	1,149
Rural Unincorporated County ¹		0.32	0.43	3,843	11,881	8,980
Thurston County Total		0.73	0.98	9,939	13,578	10,129

Source: Buildable Lands Work Program, TRPC

Note: ¹Includes Grand Mound UGA; Permits were given a lag time between approval date and built date for the purposes of this analysis. Time interval is April 1, 1996 to April 1, 2000, to correspond with 2000 Census

**Table II-6
Trends in Type of Dwellings Permitted, 1996-2000**

Jurisdiction	Dwellings			Percent			Total Acres Developed			Achieved Net Density		
	Single-family	Multi-family	Man. Home	Single-family	Multi-family	Man. Home	Single-family	Multi-family	Man. Homes	Single-family	Multi-family	Man. Home
Bucoda	17	0	8	68%	0%	32%	12	0	4	1.39	0.00	1.97
Lacey	1,555	524	45	73%	25%	2%	227	33	7	6.85	15.92	6.47
UGA	481	138	235	56%	16%	28%	131	16	45	3.68	8.79	5.21
Total	2,036	662	280	68%	22%	9%	358	49	52	5.69	13.62	5.38
Olympia	698	746	6	48%	51%	0%	126	28	1	5.54	26.83	7.22
UGA	411	21	8	93%	5%	2%	111	2	2	3.69	9.06	4.09
Total	1,109	767	14	59%	41%	1%	237	30	3	4.67	25.46	5.02
Rainier	22	0	21	51%	0%	49%	15	0	19	1.50	0.00	1.10
UGA	19	0	3	86%	0%	14%	17	0	12	1.09	0.00	0.26
Total	41	0	24	63%	0%	37%	32	0	31	1.28	0.00	0.78
Tenino	34	0	16	68%	0%	32%	9	0	3	3.71	0.00	4.70
UGA	4	0	1	80%	0%	20%	13	0	7	0.30	0.00	0.14
Total	38	0	17	69%	0%	31%	22	0	10	1.70	0.00	1.64
Tumwater ¹	234	64	46	68%	19%	13%	43	7	7	5.40	9.29	6.94
UGA	244	4	70	77%	1%	22%	67	1	16	3.65	7.60	4.38
Total	478	68	116	72%	10%	18%	110	7	23	4.34	9.17	5.13
Yelm	293	60	26	77%	16%	7%	51	6	6	5.75	10.07	4.17
UGA	15	0	27	36%	0%	64%	57	0	48	0.26	0.00	0.56
Total	308	60	53	73%	14%	13%	108	6	54	2.86	10.07	0.97
Grand Mound UGA	3	0	24	11%	0%	89%	1	0	5	3.16	0.00	4.99
Total Cities	2,853	1,394	168	65%	32%	4%	483	74	47	5.90	18.95	3.56
Total UGAs	1,177	163	368	69%	10%	22%	397	19	135	2.96	8.79	2.73
Total Urban Areas	4,030	1,557	536	66%	25%	9%	881	92	182	4.58	16.91	2.95
Rural Unincorporated County²	2,365	9	1,442	62%	0%	38%	5,864	12	3,098	0.40	0.76	0.47
Thurston County Total	6,395	1,566	1,978	64%	16%	20%	6,745	104	3,280	0.95	15.07	0.60

Source: Buildable Lands Work Program, TRPC

**Table II-7
Achieved Net Density Compared to 1995-2000 Zoned Density, Residential Zoning Districts**

Jurisdiction	Name of Zone	1995 to 2000 Zoned Density (du/acre)	Achieved Net Density (du/acre)	Urban Areas Consistent with Zoning	Permitted Dwellings 1996-2000	Acres Developed	
1-High Multifamily (15-30+ du/acre)							
OLYMPIA	RESIDENTIAL MULTI-FAMILY (RM-24)	5-30	13.85	Yes	21	1.5	
OLYMPIA	HIGH RISE MULTIFAMILY	18 or higher	N/A	Inadequate Sample Size	0	0.0	
TUMWATER	MULTI-FAMILY HIGH DENSITY RESIDENTIAL	14-29	5.68	Inadequate Sample Size	1	0.2	
TUMWATER UGA	MULTI-FAMILY HIGH DENSITY RESIDENTIAL	14-29	N/A	Inadequate Sample Size	0	0.0	
Total or Average						22	1.7
2-Moderate Multifamily (8-20 du/acre)							
LACEY	HIGH DENSITY RESIDENTIAL	6-20	7.66	Yes	19	2.5	
OLYMPIA	RESIDENTIAL MULTI-FAMILY (RM-18)	5-24	6.27	Yes	43	6.9	
OLYMPIA	MIXED RESIDENTIAL (MR-10-18)	10-18	18.24	Yes	96	5.3	
TUMWATER	MULTI-FAMILY MEDIUM DENSITY RESIDENTIAL	9-15	5.60	Inadequate Sample Size	3	0.5	
YELM	HIGH DENSITY RESIDENTIAL (R-14)	6-14	7.06	Yes	137	19.4	
LACEY UGA	HIGH DENSITY RESIDENTIAL	6-20	1.73	Inadequate Sample Size	1	0.6	
OLYMPIA UGA	RESIDENTIAL MULTI-FAMILY (RM-18)	5-24	0.41	Inadequate Sample Size	1	2.4	
TUMWATER UGA	MULTI-FAMILY MEDIUM DENSITY RESIDENTIAL	9-15	3.53	Not Yet	25	7.1	
Total or Average						325	44.6
3-Mixed Residential (6-12 du/acre)							
LACEY	MODERATE DENSITY RESIDENTIAL	6-12	11.30	Yes	439	38.9	
OLYMPIA	MANUFACTURED HOUSING PARK	5-12	6.61	Inadequate Sample Size	2	0.3	
OLYMPIA	MIXED RESIDENTIAL (MR-7-13)	7-13	N/A	Inadequate Sample Size	0	0.0	
OLYMPIA	TWO-FAMILY RESIDENTIAL (R-6-12)	6-12	5.96	Yes	136	22.8	
TUMWATER	SINGLE-FAMILY MEDIUM DENSITY RESIDENTIAL	6-9	6.22	Yes	157	25.2	
LACEY UGA	MODERATE DENSITY RESIDENTIAL	6-12	4.80	Not Yet	197	41.1	
OLYMPIA UGA	MIXED RESIDENTIAL (MR-7-13)	7-13	N/A	Inadequate Sample Size	0	0.0	
OLYMPIA UGA	TWO-FAMILY RESIDENTIAL (R-6-12)	6-12	9.04	Yes	16	1.8	
TUMWATER UGA	SINGLE-FAMILY MEDIUM DENSITY RESIDENTIAL	6-9	1.21	Not Yet	27	22.3	
COUNTY	RESIDENTIAL (R 4-16/1)	4-16	6.31	Rural Jurisdiction	2	0.3	
Total or Average						976	152.7

Source: Buildable Lands Work Program, TRPC

Table II-7, continued
Achieved Net Density Compared to 1995-2000 Zoned Density, Residential Zoning Districts

Jurisdiction	Name of Zone	1995 to 2000 Zoned Density (du/acre)	Achieved Net Density (du/acre)	Urban Areas Consistent with Zoning	Permitted Dwellings 1996-2000	Acres Developed
4-Medium (3-8 du/acre)						
LACEY	LOW DENSITY RESIDENTIAL (LD 3-6)	3-6	6.78	Yes	523	77.1
OLYMPIA	SINGLE FAMILY RESIDENTIAL (R-4-8)	4-8	4.60	Yes	539	117.2
TUMWATER	SINGLE-FAMILY LOW DENSITY RESIDENTIAL	4-7	2.97	Not Yet	139	46.8
YELM	MODERATE DENSITY RESIDENTIAL (R-6)	3-6	4.73	Yes	180	38.1
YELM	MASTER PLANNED COMMUNITY	3-6	3.32	Yes	30	9.0
LACEY UGA	MCALLISTER GEOLOGICALLY SENSITIVE AREA	3-6	0.42	Not Yet	57	135.4
LACEY UGA	LOW DENSITY RESIDENTIAL (LD 3-6)	3-6	4.16	Yes	352	84.7
OLYMPIA UGA	SINGLE FAMILY RESIDENTIAL (R-4-8)	4-8	2.71	Not Yet	244	89.9
TUMUGA	SINGLE-FAMILY LOW DENSITY RESIDENTIAL	4-7	1.25	Not Yet	248	198.4
COUNTY	RESIDENTIAL (R 3-6/1)	3-6	1.64	Rural Jurisdiction	19	11.6
Total or Average			2.88		2,331	808.3
5-Low (1-4 du/acre)						
LACEY	LACEY HISTORIC NEIGHBORHOOD	0-2.5	3.99	Inadequate Sample Size	9	2.3
LACEY	LOW DENSITY RESIDENTIAL (LD 0-4)	1-4	5.40	Yes	619	114.7
OLYMPIA	SINGLE FAMILY RESIDENTIAL (R-4)	1-4	0.71	Inadequate Sample Size	1	1.4
OLYMPIA	RESIDENTIAL LOW IMPACT (RLI 2-4) ¹	2-4	5.78	Inadequate Sample Size	7	1.2
TUMWATER	RESIDENTIAL/SENSITIVE RESOURCE	2-4	3.48	Yes	29	8.3
YELM	LOW DENSITY RESIDENTIAL (R-4)	1-4	1.53	Yes	23	15.0
LACEY UGA	LOW DENSITY RESIDENTIAL (LD 0-4)	1-4	2.31	Yes	241	104.2
OLYMPIA UGA	RESIDENTIAL LOW IMPACT (RLI 2-4) ¹	2-4	3.01	Yes	102	33.9
OLYMPIA UGA	SINGLE FAMILY RESIDENTIAL (R-4)	1-4	3.39	Yes	70	20.7
TUMWATER UGA	RESIDENTIAL/SENSITIVE RESOURCE	2-4	0.26	Inadequate Sample Size	3	11.4
RAINIER	HIGH DENSITY RESIDENTIAL	1-6	0.32	Inadequate Sample Size	9	28.1
TENINO	MULTI-FAMILY RESIDENTIAL	1-12	3.49	Yes	22	6.3
TENINO	SINGLE FAMILY/DUPLEX RESIDENTIAL	1-12	4.19	Yes	15	3.6
COUNTY	RURAL RESIDENTIAL (RR 2/1)	0-2	3.59	Rural Jurisdiction	404	112.4
COUNTY	SUBURBAN RESIDENTIAL (SR 4/1)	1-4	2.56	Rural Jurisdiction	44	17.2
Total or Average			3.32		1,598	480.7

Source: Buildable Lands Work Program, TRPC

Note: ¹The Olympia Residential Low Impact (RLI 2-4) Zone was first introduced in the 2001 Comprehensive plan amendments for the City of Olympia. Previously, much of this land area was zoned at higher densities. Development is therefore more consistent with the Medium (3-8 du/acre) density category.

Table II-7, continued
 Achieved Net Density Compared to 1995-2000 Zoned Density, Residential Zoning Districts

Jurisdiction	Name of Zone	1995 to 2000 Zoned Density (du/acre)	Achieved Net Density (du/acre)	Urban Areas Consistent with Zoning	Permitted Dwellings 1996-2000	Acres Developed
6-Very Low (0-4 du/acre)						
BUCODA	RESIDENTIAL	0-1	1.50	Yes	24	16.0
RAINIER	LOW DENSITY RESIDENTIAL	0-1	0.95	Yes	27	28.6
RAINIER	MEDIUM DENSITY RESIDENTIAL	1-4	1.19	Yes	22	18.5
TENINO	SINGLE FAMILY RESIDENTIAL	1-8	4.09	Inadequate Sample Size	4	1.0
COUNTY	MEDIUM DENSITY RESIDENTIAL	1-6	1.12	Rural Jurisdiction	131	117.0
COUNTY	RURAL RESIDENTIAL (RR 1/1)	0-1	1.02	Rural Jurisdiction	659	649.2
Total or Average			1.04		867	830.2
7-Rural-1du/2acres						
COUNTY	RURAL RESIDENTIAL (RR 1/2)	0-0.50	0.47	Rural Jurisdiction	348	737.2
Total or Average			0.47		348	737.2
8-Rural-1du/5acres						
LACEY UGA	AGRICULTURE	0-0.20	N/A	Inadequate Sample Size	0	0.0
OLYMPIA UGA	RESIDENTIAL (R 1/5)	0-0.20	2.94	Inadequate Sample Size	5	1.7
COUNTY	RURAL RESIDENTIAL/RESOURCE (RRR 1/5)	0-0.20	0.22	Rural Jurisdiction	1,948	8,942.1
COUNTY	MCALLISTER GEOLOGICALLY SENSITIVE AREA	0-0.20	0.27	Rural Jurisdiction	190	703.4
COUNTY	RURAL RESIDENTIAL (RR 1/5)	0-0.20	0.69	Rural Jurisdiction	66	95.7
RAINIER UGA	RURAL RESIDENTIAL/RESOURCE 1/5	0-0.20	0.09	Rural Jurisdiction	5	53.1
TENINO UGA	RURAL RESIDENTIAL/RESOURCE 1/5	0-0.20	0.20	Rural Jurisdiction	5	25.4
YELM UGA	RURAL RESIDENTIAL 1/5	0-0.20	0.37	Rural Jurisdiction	41	110.8
Total or Average			0.23		2,260	9,932.4
9-Rural-1du/20acres						
COUNTY	LONG-TERM AGRICULTURE	0.05	0.04	Rural Jurisdiction	18	476.0
Total or Average			0.04		18	476.0

Source: Buildable Lands Work Program, TRPC

**Table II-8
Achieved Net Density Compared to 1995-2000 Zoned Density, Mixed Use Zoning Districts**

Jurisdiction	Name of Zone	1995 to 2000			Achieved		
		Zoned Density (du/acre)	Permitted Dwellings 1996-2000	Acres Developed	Net Density (du/acre)	Permitted Dwellings 1996-2000	
1-High Multifamily (15-30+ du/acre)							
OLYMPIA	RESIDENTIAL MIXED USE	15 or higher	0	0.0	N/A	0	
OLYMPIA	DOWNTOWN BUSINESS	15 or higher	47	0.4	111.19	47	
OLYMPIA	URBAN WATERFRONT	15 or higher	284	2.8	101.25	284	
OLYMPIA	URBAN CENTER	7-24	0	0.0	N/A	0	
TUMWATER	MIXED USE	14 or higher	0	0.0	N/A	0	
OLYMPIA UGA	COMMUNITY ORIENTED SHOPPING CENTER	7-24	0	0.0	N/A	0	
Total or Average						331	3.2
2-Moderate Multifamily (8-20 du/acre)							
LACEY	CENTRAL BUSINESS DISTRICT	6-20	56	1.5	1.52	56	
LACEY	MIXED USE HIGH DENSITY CORRIDOR	6-20	190	13.3	14.29	190	
OLYMPIA	URBAN VILLAGE	7-14	1	0.5	1.93	1	
OLYMPIA	GENERAL COMMERCIAL	7-18	0	0.0	N/A	0	
OLYMPIA	MEDICAL SERVICE	7-18	60	3.6	16.52	60	
OLYMPIA	PROFESSIONAL OFFICE/RESIDENTIAL MULTI-FAMILY	7-18	212	12.1	17.48	212	
TUMWATER	COMMUNITY SERVICES	0-15 or higher	2	0.2	10.14	2	
LACEY UGA	HAWKS PRAIRIE BUSINESS DISTRICT	6-20	0	0.0	N/A	0	
LACEY UGA	VILLAGE CENTER	3-20	4	0.4	9.21	4	
LACEY UGA	MIXED USE HIGH DENSITY CORRIDOR	12-20	2	0.3	7.63	2	
LACEY UGA	CENTRAL BUSINESS DISTRICT	6-20	0	0.0	N/A	0	
OLYMPIA UGA	PROFESSIONAL OFFICE/RESIDENTIAL MULTI-FAMILY	7-18	2	0.5	4.03	2	
OLYMPIA UGA	MEDICAL SERVICE	7-18	0	0.0	N/A	0	
OLYMPIA UGA	GENERAL COMMERCIAL	7-18	0	0.0	N/A	0	
TUMWATER UGA	COMMERCIAL DEVELOPMENT	0-29 or higher	1	0.2	4.67	1	
Total or Average						530	32.7

Source: Buildable Lands Work Program, TRPC

Table II-8, continued
 Achieved Net Density Compared to 1995-2000 Zoned Density, Mixed Use Zoning Districts

Jurisdiction	Name of Zone	1995 to 2000 Zoned Density (du/acre)	Achieved Net Density (du/acre)	Permitted Dwellings 1996-2000	Acres Developed
3-Mixed Residential (6-12 du/acre)					
LACEY	VILLAGE CENTER	3-20	8.59	265	30.9
LACEY	MIXED USE MODERATE DENSITY CORRIDOR	8-12	N/A	0	0.0
OLYMPIA	HIGH DENSITY CORRIDOR-4	1-15 or higher	N/A	0	0.0
OLYMPIA	NEIGHBORHOOD VILLAGE	7-13	N/A	0	0.0
OLYMPIA	PLANNED UNIT DEVELOPMENT - Evergreen	4-12	4.87	1	0.2
OLYMPIA	HIGH DENSITY CORRIDOR-3	1-15 or higher	N/A	0	0.0
LACEY UGA	MIXED USE MODERATE DENSITY CORRIDOR	8-12	N/A	0	0.0
OLYMPIA UGA	NEIGHBORHOOD VILLAGE	7-13	N/A	0	0.0
Total or Average			8.56	266	31.1
4-Medium (3-8 du/acre)					
OLYMPIA	HIGH DENSITY CORRIDOR-2	1-7 or higher	N/A	0	0.0
OLYMPIA	HIGH DENSITY CORRIDOR-1	1-7 or higher	N/A	0	0.0
OLYMPIA	NEIGHBORHOOD RETAIL	4-8	N/A	0	0.0
YELM	CENTRAL BUSINESS DISTRICT	0-14 or higher	N/A	0	0.0
YELM	HEAVY COMMERCIAL	0-14 or higher	N/A	0	0.0
YELM	COMMERCIAL	0-14 or higher	3.13	9	2.9
OLYMPIA UGA	NEIGHBORHOOD RETAIL	4-8	N/A	0	0.0
RAINIER	CORE COMMERCIAL	4-8	0.97	2	2.1
TENINO	COMMERCIAL 2	0-12	5.29	9	1.7
TENINO	COMMERCIAL 1	0-12	N/A	0	0.0
Total or Average			3.01	20	6.6
6-Very Low (0-4 du/acre)					
BUCODA	COMMERCIAL	0-1	4.33	1	0.2
COUNTY	RURAL COMMERCIAL CENTER	0-1	0.63	8	12.8
Total or Average			0.69	9	13.0

Source: Buildable Lands Work Program, TRPC

Table II-9
Average Achieved Density by Generalized Density Category,
Residential and Mixed Use Zoning

Density Category	Net Achieved Density (du/acre)	Permitted Dwellings 1996-2000	Acres Developed	Total Zoned Residential Acres	Buildable Acres
1-High Multifamily (15-30+ du/acre)	71.75	353	4.9	686	223
2-Moderate Multifamily (8-20 du/acre)	11.06	855	77.3	2,989	1,745
3-Mixed Residential (6-12 du/acre)	6.76	1,242	183.7	5,769	2,296
4-Medium (3-8 du/acre)	2.88	2,351	815.0	18,137	8,417
5-Low (1-4 du/acre)	3.32	1,598	480.7	14,322	4,730
6-Very Low (0-4 du/acre)	1.04	876	843.2	9,487	3,683
7-Rural-1du/2acres	0.47	348	737.2	12,236	5,027
8-Rural-1du/5acres	0.23	2,260	9,932.4	206,538	131,119
9-Rural-1du/20acres	0.04	18	476.0	11,729	7,101

Source: Buildable Lands Work Program, TRPC

**Table II-10
Trends in Development in Urban Growth Areas of Lacey, Olympia, and Tumwater
For Building Permits Presumed Built in the Five Year Interval 1996-2000**

Jurisdiction and Zone	2000 Zoned Density Range	Achieved Net Density	Total Permitted Dwellings	Total Developed Acres	Achieved Net Density , by Date of Subdivision Approval									
					1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	Not in a Subdivision			
Lacey UGA														
Low Density Residential (LD 0-4) 1-4 du/ acre	2.31	241	104	4.18	3.06	1.97	4.31	2.17	1.65	2.96				
Low Density Residential (LD 3-6) 3-6 du/ acre	4.16	352	85	-	-	-	-	-	5.77	3.04				
McCallister Geologically Sensitive Area 3-6 du/ acre	0.42	57	135	-	-	1.75	0.73	2.24	-	0.33				
Moderate Density Residential 6-12 du/ acre	4.80	197	41	-	-	3.50	-	-	8.18	3.17				
Olympia UGA														
Residential Low Impact (RLI 2-4) 2-4 du/ acre	3.01	102	34	-	-	-	-	-	3.01	-				
Single Family Residential (R-4) 1-4 du/ acre	3.39	70	21	-	-	-	-	3.78	-	1.61				
Single Family Residential (R-4-8) 4-8 du/ acre	2.71	244	90	2.63	2.89	2.06	-	3.73	4.66	1.00				
Two-Family Residential (R-6-12) 6-12 du/ acre	9.04	16	2	-	-	-	-	-	9.04	-				
Tumwater UGA														
Single-Family Low Density Residential 4-7 du/ acre	1.25	248	198	1.87	3.60	3.39	3.32	1.65	3.70	0.47				
Single-Family Medium Density Residential 6-9 du/ acre	1.21	27	22	-	-	2.69	-	2.83	-	0.91				
Multi-family Medium Density Residential 9-15 du/ acre	3.53	25	7	-	-	-	-	-	-	3.53				

Source: Buildable Lands Work Program, TRPC

**Table II-11
Inventory of Rural Lots that are Undersized Relative to Current Zoning Regulations, Thurston County**

Rural Zoning District	2000 Zoning Density Range	Undersized Vacant Lots		Developed Lots		Lots Developed in 96-00		Projected Years of Supply of Undersized Vacant Lots
		Average Size (acres)	Number	Average Size (acres)	Number	Average Size (acres)	Number	
Rural Residential (RR 2/1)	0-2 du/ acre	0.22	1,624	0.29	3,516	0.27	396	20.5
Rural Residential (RR 1/1)	0-1 du/ acre	0.42	533	0.79	3,401	0.82	639	4.2
Rural Residential (RR 1/2)	0-1 du/ 2 acres	0.86	555	1.54	2,803	1.64	320	8.7
Rural Residential (RR 1/5)	0-1 du/ 5 acres	1.35	81	1.44	201	1.62	27	15.0
Rural Residential/Resource (RRR 1/5)	0-1 du/ 5 acres	2.52	3,103	3.58	9,073	3.54	1,830	8.5
McAllister Geologically Sensitive Area	0-1 du/ 5 acres	1.41	364	1.72	1,495	2.71	183	9.9
Long-Term Agriculture	0-1 du/ 20 acres	8.33	119	12.23	142	17.21	18	33.1
Total			6,379		20,631		3,413	

Source: Buildable Lands Work Program, TRPC

**Table II-12
2000 Land Supply in Thurston County - Industrial and Commercial Zoning**

Jurisdiction	Industrial Land Supply (acres)			Commercial Land Supply (acres)		
	Vacant or Partially Used Land	Land with Redevelopment Potential	Total	Vacant or Partially Used Land	Land with Redevelopment Potential	Total
Bucoda	1	0	1	7	2	9
Lacey & Lacey UGA	1,184	70	1,254	2,202	396	2,598
Olympia & Olympia UGA	44	64	108	626	380	1,006
Rainier & Rainier UGA	0	0	0	47	2	50
Tenino & Tenino UGA	32	2	34	20	6	26
Tumwater & Tumwater UGA	2,480	289	2,768	853	155	1,008
Yelm & Yelm UGA	226	26	251	325	75	400
Grand Mound UGA	264	32	296	119	26	145
Total Urban Areas	4,229	483	4,712	4,200	1,042	5,242
Rural Unincorporated County	568	43	611	279	92	371
Thurston County Total	4,797	526	5,323	4,479	1,134	5,613

Source: Buildable Lands Work Program, TRPC

Explanation: Partially used parcels contain less than 3,000 square feet per acre of commercial or industrial building activity, indicating room for further development. Redevelopment potential is based on a building to land value ratio, where buildings are present. Residential properties in commercial or industrial zoning and parking lots are considered redevelopable.

**Table II-13
2000 Land Supply Compared to 2025 Land Demand, Thurston County**

Jurisdiction	Industrial Lands				Commercial Lands			
	2000 Land Supply (acres)	2015 Land Demand (acres)	2025 Land Demand (acres)	Percent Remaining in 2025	2000 Land Supply (acres)	2015 Land Demand (acres)	2025 Land Demand (acres)	Percent Remaining in 2025
Bucoda	1	0	0	69%	9	0	1	94%
Lacey & Lacey UGA	1,254	79	132	89%	2,598	383	639	75%
Olympia & Olympia UGA	108	32	54	50%	1,006	313	521	48%
Rainier & Rainier UGA	0	1	2	0%	50	8	13	73%
Tenino & Tenino UGA	34	1	2	95%	26	6	9	64%
Tumwater & Tumwater UGA	2,768	63	105	96%	1,008	294	490	51%
Yelm & Yelm UGA	251	13	22	91%	400	111	185	54%
Grand Mound UGA	296	5	8	97%	145	18	30	79%
Total Urban Areas	4,712	195	325	93%	5,242	1,133	1,889	64%
Rural Unincorporated County	611	122	203	67%	371	223	372	0%
Thurston County Total	5,323	317	528	90%	5,613	1,356	2,261	60%

Source: Buildable Lands Work Program, TRPC

Explanation: For further details, please see Buildable Lands Technical Documentation in the appendix of this report.

Table II-14
Simple Projection of Commercial Development Trends to Year 2015

Jurisdiction	Simple Projection of Current Trends				
	2000 Land Supply (acres)	Land Consumption between 1995-1999 (acres)	Projected Land Consumption 2000-2015 (acres)	Land Remaining for Development in 2015 (acres)	Percent Remaining in 2015
Bucoda	9	0	0	9	100%
Lacey & Lacey UGA	2,598	80	241	2,357	91%
Olympia & Olympia UGA	1,006	148	443	563	56%
Rainier & Rainier UGA	50	5	16	34	68%
Tenino & Tenino UGA	26	0	1	25	97%
Tumwater & Tumwater UGA	1,008	115	344	663	66%
Yelm & Yelm UGA	400	23	70	329	82%
Grand Mound UGA	145	9	27	118	81%
Total Urban Areas	5,242	381	1,142	4,100	78%
Rural Unincorporated County	371	37	110	261	70%
Thurston County Total	5,613	417	1,252	4,360	78%

Source: Buildable Lands Work Program, TRPC

Explanation: For further details, please see Buildable Lands Technical Documentation in the appendix of this report

**Table II-15
Simple Projection of Industrial Development Trends to Year 2015**

Jurisdiction	Simple Projection of Current Trends					Percent Remaining in 2015
	2000 Land Supply (acres)	Land Consumption between 1996-2000 (acres)	Projected Land Consumption 2000-2015 (acres)	Land Remaining for Development in 2015 (acres)		
Bucoda	1	0	0	1		79%
Lacey & Lacey UGA	1,254	43	128	1,125		90%
Olympia & Olympia UGA	108	4	13	95		88%
Rainier & Rainier UGA	0	0	0	0		0%
Tenino & Tenino UGA	34	0	0	34		100%
Tumwater & Tumwater UGA	2,768	80	239	2,529		91%
Yelm & Yelm UGA	251	5	16	235		94%
Grand Mound UGA	296	0	0	296		100%
Total Urban Areas	4,712	132	397	4,316		92%
Rural Unincorporated County	611	3	10	601		98%
Thurston County Total	5,323	136	407	4,916		92%

Source: Buildable Lands Work Program, TRPC

Explanation: For further details, please see Buildable Lands Technical Documentation in the appendix of this report.

Table II-16
Development Snapshot of Total Commercial Inventory by Jurisdiction
Thurston County, 2000

Jurisdiction		Total Building Floor Area (square feet)	Ground Floor Area (square feet)	Average Number of Stories	Developed Land including Parking (acres)	1,000 Square Feet Gross Floor Area Per Gross Acre
Bucoda	Total	24,875	21,275	1.17	2	10.69
Lacey	City	5,061,702	4,409,056	1.15	647	7.82
	UGA	563,793	556,443	1.01	196	2.88
	Total	5,625,495	4,965,499	1.13	843	6.67
Olympia	City	14,343,381	11,521,068	1.24	1,022	14.03
	UGA	267,475	248,451	1.08	47	5.74
	Total	14,610,856	11,769,519	1.24	1,069	13.67
Rainier	City	117,801	117,801	1.00	25	4.76
	UGA	5,968	5,968	1.00	4	1.60
	Total	123,769	123,769	1.00	28	4.35
Tenino	City	178,995	177,315	1.01	14	13.03
	UGA	1,000	1,000	1.00	0	3.00
	Total	179,995	178,315	1.01	14	12.79
Tumwater	City	2,861,897	2,623,667	1.09	493	5.81
	UGA	634,851	633,507	1.00	151	4.19
	Total	3,496,748	3,257,174	1.07	644	5.43
Yelm	City	996,174	977,992	1.02	250	3.98
	UGA	47,644	47,644	1.00	14	3.53
	Total	1,043,818	1,025,636	1.02	264	3.96
Grand Mound UGA	Total	169,143	168,143	1.01	40	4.24
Total Cities		23,584,825	19,848,174	1.19	2,453	9.61
Total UGAs		1,689,874	1,661,156	1.02	451	3.74
Total Urban Areas		25,274,698	21,509,330	1.18	2,905	8.70
Rural Unincorporated County		1,123,156	1,109,714	1.01	532	2.11
Thurston County Total		26,397,854	22,619,044	1.17	3,437	7.68

Source: Buildable Lands Work Program, TRPC

Note: Includes only development at the parcel level; does not include parking on adjacent parcels. Inventory of buildings existing in the year 2000. Excludes schools, churches, colleges, jails, libraries, the airport, golf courses, recreation parcels, horse arenas, reservoirs, and tanks.

Table II-17
Development Snapshot of Total Industrial Inventory by Jurisdiction
Thurston County, 2000

Jurisdiction		Total Building Floor Area (square feet)	Ground Floor Area (square feet)	Average Number of Stories	Developed Land including Parking (acres)	1,000 Square Feet Gross Floor Area Per Gross Acre
Bucoda	Total	1,200	1,200	1.00	0	2.83
Lacey	City	838,507	829,927	1.01	114	7.38
	UGA	388,420	386,620	1.00	63	6.14
	Total	1,226,927	1,216,547	1.01	177	6.94
Olympia	City	988,415	969,161	1.02	85	11.65
	UGA	152,907	152,907	1.00	13	11.57
	Total	1,141,322	1,122,068	1.02	98	11.64
Rainier	City	0	0	0.00	0	0.00
	UGA	0	0	0.00	0	0.00
	Total	0	0	0.00	0	0.00
Tenino	City	40,309	39,109	1.03	3	11.59
	UGA	1,618	1,618	1.00	1	3.00
	Total	41,927	40,727	1.03	4	10.44
Tumwater	City	2,213,582	2,196,325	1.01	207	10.67
	UGA	725,067	724,167	1.00	114	6.34
	Total	2,938,649	2,920,492	1.01	322	9.13
Yelm	City	150,551	150,551	1.00	28	5.40
	UGA	16,800	16,800	1.00	5	3.30
	Total	167,351	167,351	1.00	33	5.07
Grand Mound UGA	Total	86,916	82,870	1.05	23	3.75
Total Cities		4,232,564	4,186,273	1.01	438	9.67
Total UGAs		1,371,728	1,364,982	1.00	220	6.25
Total Urban Areas		5,604,292	5,551,255	1.01	657	8.53
Rural Unincorporated County		525,280	525,280	1.00	174	3.01
Thurston County Total		6,129,572	6,076,535	1.01	832	7.37

Source: Buildable Lands Work Program, TRPC

Note: Includes only development at the parcel level; does not include parking on adjacent parcels. Inventory of buildings existing in the year 2000. Excludes schools, churches, colleges, jails, libraries, the airport, golf courses, recreation parcels, horse arenas, reservoirs, and tanks.

Table II-18
Development Trends in Commercial Growth, Thurston County, 1900-1999

Time Interval	Total Building Floor Area (square feet)	Ground Floor Area (square feet)	Average Number of Stories	Developed Land (acres)	1,000 Square Feet Gross Floor Area Per Gross Acre
1900-1909	643,538	489,808	1.31	65	9.97
1910-1919	399,480	300,400	1.33	13	31.02
1920-1929	940,948	648,615	1.45	38	24.71
1930-1939	834,104	519,697	1.60	83	10.10
1940-1949	1,037,357	711,748	1.46	71	14.60
1950-1959	1,024,097	783,149	1.31	107	9.56
1960-1969	2,558,763	2,321,369	1.10	318	8.04
1970-1979	4,417,458	4,120,387	1.07	662	6.68
1980-1989	5,794,352	4,873,926	1.19	717	8.09
1990-1999	7,164,457	6,266,644	1.14	784	9.14
Total/Average	24,814,553	21,035,743	1.18	2,857	8.68
Last Thirty Years of Activity, by 5 year Interval					
1970-1974	1,993,408	1,793,273	1.11	391	5.10
1975-1979	2,424,050	2,327,114	1.04	271	8.94
1980-1984	2,097,239	1,889,654	1.11	249	8.41
1985-1989	3,697,113	2,984,272	1.24	467	7.91
1990-1994	3,997,663	3,454,412	1.16	367	10.90
1995-1999	3,166,794	2,812,232	1.13	417	7.59

Source: Buildable Lands Work Program, TRPC

Note: Includes only development at the parcel level; does not include parking on adjacent parcels. Inventory of buildings existing in the year 2000. Excludes schools, churches, colleges, jails, libraries, the airport, golf courses, recreation parcels, horse arenas, reservoirs, and tanks.

Table II-19
Development Trends in Industrial Growth, Thurston County, 1900-1999

Time Interval	Total Building Floor Area (square feet)	Ground Floor Area (square feet)	Average Number of Stories	Developed Land (acres)	1,000 Square Feet Gross Floor Area Per Gross Acre
1900-1909	12,717	12,717	1.00	0	27.95
1910-1919	14,070	12,870	1.09	1	9.83
1920-1929	53,334	53,334	1.00	5	11.79
1930-1939	17,116	17,116	1.00	3	6.77
1940-1949	121,551	111,251	1.09	5	25.43
1950-1959	53,281	49,235	1.08	7	7.58
1960-1969	544,489	537,289	1.01	89	6.13
1970-1979	1,206,443	1,204,643	1.00	170	7.10
1980-1989	1,026,723	1,025,343	1.00	178	5.77
1990-1999	2,462,148	2,435,037	1.01	266	9.25
Total/Average	5,511,872	5,458,835	1.01	723	7.62
Last Five Years of Activity					
1970-1974	472,889	472,889	1.00	68	6.93
1975-1979	733,554	731,754	1.00	102	7.22
1980-1984	571,627	571,627	1.00	99	5.76
1985-1989	455,096	453,716	1.00	79	5.80
1990-1994	1,005,414	991,722	1.01	131	7.70
1995-1999	1,456,734	1,443,315	1.01	136	10.75

Source: Buildable Lands Work Program, TRPC

Note: Includes only development at the parcel level; does not include parking on adjacent parcels. Inventory of buildings existing in the year 2000. Excludes schools, churches, colleges, jails, libraries, the airport, golf courses, recreation parcels, horse arenas, reservoirs, and tanks

Table II-20
Example of Parcel Specific Land Categorization and Development Capacity
Estimation from the Buildable Lands Database

Parcel Number	Land Use in 2000	Total Land Area (acres)		Undevelopable Land (acres)			Buildable Land (acres)		Redevelopable Land (acres)		Dwelling Units		Commercial & Industrial (sq. ft.)	
		Developed Land (acres)	Other Land (acres)	Critical Areas	Residential	Comm. or Industrial	%	Total (2000)	Potential Capacity	Total (2000)	Potential Capacity			
62200300600	Roads & Rights of Way	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0	0	0
37000000906	Religious Institutions & Private Schools	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0	4,320	0
12835331100	State	9.9	9.9	0.0	0.0	0.0	0.0	75	7.4	0	0	0	61,337	81,367
37000000500	Local	14.9	14.9	0.0	0.0	0.0	0.0	0	0.0	0	0	0	47,840	0
37000001003	Federal - Civilian	1.7	1.6	0.0	0.0	0.1	100	1.6	0	0	0	0	4,682	18,635
62200100700	Dwellings	0.3	0.3	0.0	0.0	0.0	0.0	0	0.0	0	6	0	0	0
12704440400	Dwellings	2.4	0.1	0.0	0.0	0.2	2.1	0	0.0	1	3	0	23,073	0
37000002006	Commercial/Industrial	0.6	0.6	0.0	0.0	0.0	100	0.6	0	0	0	0	2,435	6,697
09470053000	Commercial/Industrial	32.7	1.2	16.3	0.0	1.5	13.7	100	1.2	0	23	6,912	163,365	0
12703320100	Undeveloped Private	26.8	0.0	0.0	0.0	2.7	24.1	0	0.0	0	40	0	264,947	0
12703320901	Undeveloped Government	1.5	0.0	0.0	0.0	0.0	1.5	0	0.0	0	0	0	16,287	0

Source: Buildable Lands Work Program, TRPC

Note: Each parcel is categorized based on existing land use, dwellings, and commercial or industrial buildings. Potential development decisions are based on zoning. All data are in draft format and do not represent true future conditions.

**Table II-21
Capital Facilities and Other Land Use Categories of Special Planning Interest in Thurston County
by Jurisdiction, 2000 Includes Subdivision Open Space for Planning Purposes**

Jurisdiction	Local Government Facilities (acres)		State and Federal Land & Facilities (acres)		Tribal Land & Facilities (acres)		Railroads, Roads, and Rights of Way (acres)		Religious, Private Schools (acres)		Subdivision Open Space (acres)		All Categories (acres)		All Categories as Percent of Total Land Area
	Local Government Facilities (acres)	Total	State and Federal Land & Facilities (acres)	Total	Tribal Land & Facilities (acres)	Total	Railroads, Roads, and Rights of Way (acres)	Total	Religious, Private Schools (acres)	Total	Subdivision Open Space (acres)	Total	All Categories (acres)	Total	
Bucoda	5	9	0	0	0	0	83	83	0	0	0	0	98	274	36%
Lacey	320	241	92	92	0	0	1,114	1,114	470	470	234	234	2,471	10,409	24%
UGA	343	151	99	99	0	0	1,147	1,147	74	74	286	286	2,099	10,760	20%
Total	663	392	190	190	0	0	2,260	2,260	545	545	520	520	4,570	21,169	22%
Olympia	590	561	535	535	0	0	1,916	1,916	120	120	155	155	3,877	11,131	35%
UGA	33	50	18	18	0	0	482	482	48	48	213	213	844	4,863	17%
Total	623	611	553	553	0	0	2,398	2,398	168	168	368	368	4,720	15,994	30%
Rainier	52	37	0	0	0	0	117	117	0	0	3	3	209	987	21%
UGA	24	24	0	0	0	0	37	37	0	0	0	0	61	437	14%
Total	52	61	0	0	0	0	154	154	0	0	3	3	270	1,424	19%
Tenino	51	72	0	0	0	0	132	132	1	1	2	2	259	500	52%
UGA	2	29	0	0	0	0	52	52	0	0	8	8	91	731	12%
Total	53	101	0	0	0	0	184	184	1	1	10	10	350	1,231	28%
Tumwater ¹	1,479	348	103	103	0	0	638	638	42	42	95	95	2,705	6,424	42%
UGA	142	42	250	250	0	0	510	510	39	39	206	206	1,189	8,782	14%
Total	1,621	390	353	353	0	0	1,148	1,148	80	80	301	301	3,894	15,206	26%
Yelm	154	31	0	0	0	0	170	170	27	27	13	13	395	3,567	11%
UGA	20	20	0	0	0	0	93	93	3	3	4	4	140	2,463	6%
Total	174	51	0	0	0	0	263	263	30	30	17	17	535	6,030	9%
Total Cities	2,651	1,300	729	729	0	0	4,170	4,170	661	661	502	502	10,013	33,291	30%
Total UGAs	539	315	367	367	0	0	2,322	2,322	163	163	716	716	4,423	28,036	16%
Total Urban Areas	3,191	1,615	1,096	1,096	0	0	6,491	6,491	825	825	1,219	1,219	14,436	61,327	24%
Rural Unincorporated County²	953	2,324	24,951	24,951	2,386	2,386	9,770	9,770	161	161	1,313	1,313	41,858	410,332	10%
Thurston County Total	4,143	3,939	26,047	26,047	2,386	2,386	16,261	16,261	986	986	2,532	2,532	56,294	471,659	12%

Source: Buildable Lands Work Program, TRPC

Note: ¹Tumwater Local government facilities includes the regional airport. ²Includes Grand Mound UGA.

Growth**Related GMA Goals:**

GMA Goal (1) Urban growth. Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.

GMA Goal (2) Reduce sprawl. Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.

Indicators Used:

- Total Dwelling Units
- Small Lot Creation
- Subdivision Density

Related County-Wide Planning Policies:

Urban growth within Thurston County will occur only in designated urban growth areas.

Thurston County and each city and town will concentrate development in growth areas.

Growth

Overview

The data in this chapter can be viewed as a supplement to data presented in Chapter II, the Buildable Lands Report. It includes data generated by the buildable lands program but which was not directly related to meeting the legislative requirements of the “buildable lands” provisions of GMA. The benchmarks monitor the distribution of total dwelling units in the county over time, and data related to development activity in subdivisions in particular. Beyond the benchmarks themselves, detailed data tables include information on dwelling units by type, a 2025 dwelling unit forecast by type, small area population estimates, population forecast, annexation of population, a wide variety of subdivision data, and an analysis of recent changes in land use.

Growth

List of Benchmarks found in this chapter

Benchmark 4:

Urban Areas Show an Increase in Their Share of Total Dwelling Units Over Time.

Benchmark 5:

The Percentage of Small Lots Created in Subdivisions in the Cities and UGAs Increases Over Time.

Benchmark 6:

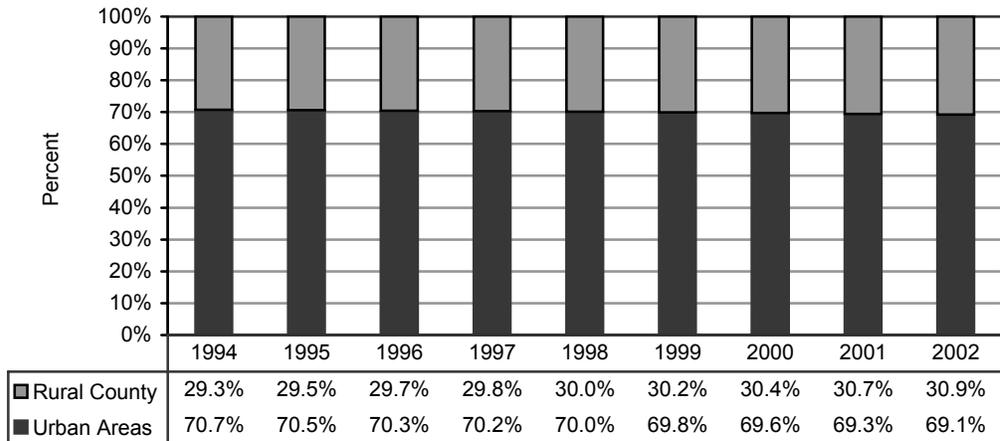
Subdivision Density Increases Over Time in Urban Areas.

Benchmark 4

Urban Areas Show an Increase in Their Share of Total Dwelling Units Over Time

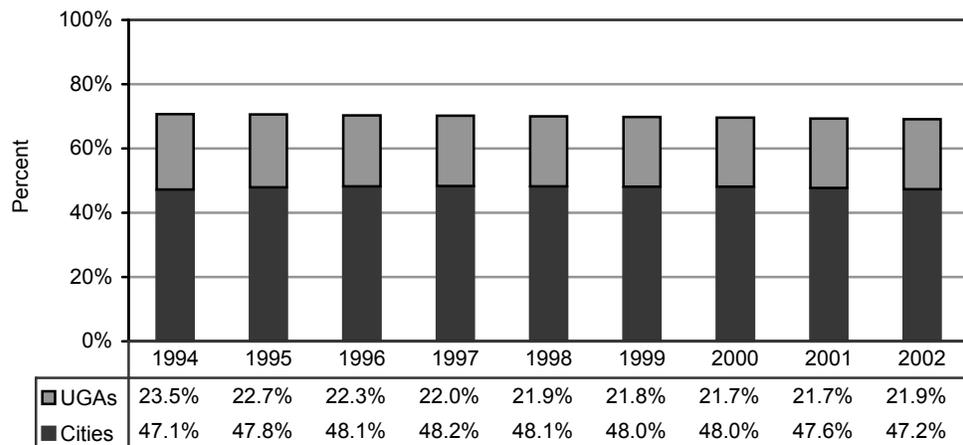


**Figure III-1
Distribution of Total Dwelling Units, Urban, and Rural Areas**



Source: Table III-2

**Figure III-2
Distribution of Total Dwelling Units, Cities, and UGAs**



Source: Table III-2

Assessment:
**Urban Areas have seen a decline in their share
of total dwelling units over time.**

Key Observations:

- The share of total dwelling units in the urban areas has been steadily decreasing. Correspondingly, the share of total dwelling units which are located in the rural area has been steadily increasing.
- Interestingly, the rural area's average rate of growth in dwelling units has generally been declining over this same time period.
- Although the urban areas continue to be the location of the majority of the county's dwelling units, the above trends indicate that the amount of growth going into the rural area is large enough that even when it is declining in its rate of growth, it is still occurring at a high enough level to cause the rural area to have a steadily increasing share of the county's total dwelling units.
- The urban area's share of new dwelling units has declined, moving from 61.8 percent in 1995 to 58.7 percent in 2002. Correspondingly, the rural area's share of new dwelling units has increased from 38.2 percent in 1995 to 28.6 percent in 2002.
- The decline in the share of new dwelling units which are locating within city limits is significant, from 57.6 percent in 1995 to 28.6 percent in 2002.
- Not all of this decline reflects a movement of new dwelling units to the rural areas. Much of it is attributable to an increase in new dwelling units locating in the UGAs.
- A positive trend is the significant increase in the UGA share of new dwellings, moving from only 4.2 percent of new dwellings in 1995 to 30.1 percent of new dwellings in 2002.

For Further Information:

See Tables III-1 to III-13 and Chapter III of The Profile.

Benchmark 4
Urban Areas
Show an
Increase in
Their Share of
Total Dwelling
Units Over
Time

see Figure III-1; Table III-2

see Table III-3

see Tables III-2 and III-3

see Table III-5

see Table III-5

see Tables III-4 and III-5

see Tables III-4 and III-5

Benchmark 5

The Percentage of Small Lots* Created in Subdivisions in the Cities and UGAs Increases Over Time

*Note: For purposes of this report the definition of small lots varies between cities and the unincorporated urban growth areas. In the cities, a “small” lot is less than one seventh of an acre. In the UGAs, a “small” lot is less than a quarter acre.

Source: Table III-22

Source: Table III-22



Figure III-3
Percentage of Lots Created at a Size of less than a 0.15 acres (one seventh of an acre) in Cities

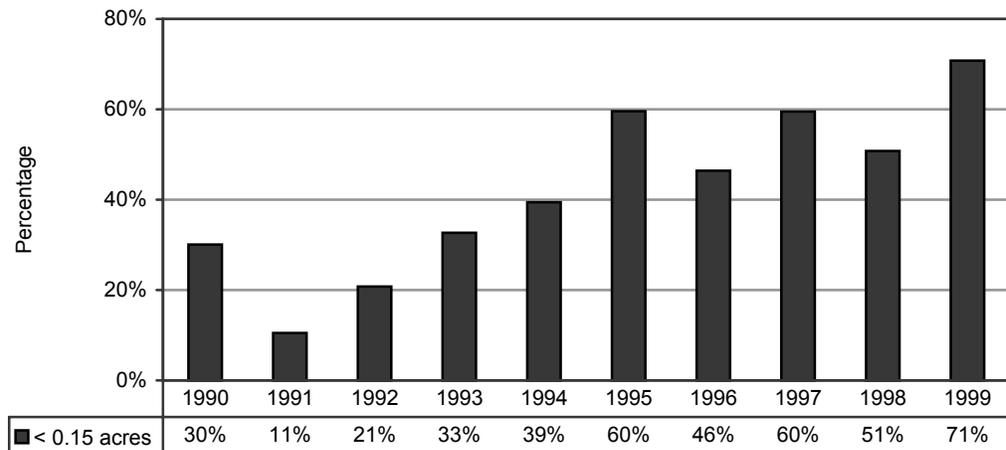
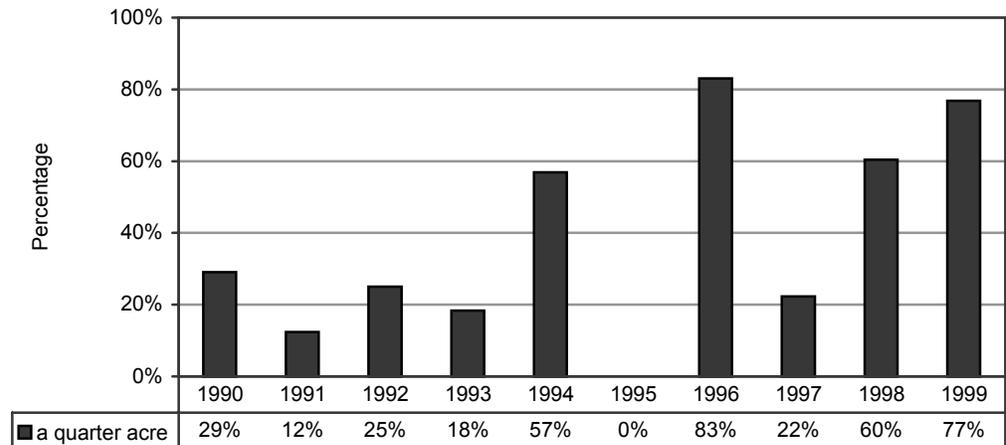


Figure III-4
Percentage of Lots Created at a Size of less than a quarter acre in UGAs



Assessment:

The percentage of small lots created in subdivisions has been increasing over time in the cities. In the unincorporated urban growth areas, data reflect a large amount of variability, and significant trends are not yet observable.

Key Observations:

- Lot size measures differ from density measures in that these data does not include rights-of-way and open space.
- In urban areas, the amount of lots created at a size of less than one seventh of an acre (7 lots per acre) more than tripled between the 1980s and the 1990s.
- In the urban areas as a whole, the amount of small lots has been steadily increasing, while the amount of medium and large urban lots (half acre to a quarter acre in size) has been steadily decreasing.
- In the UGAs there is more variability in the data than in the cities. Although there appears to be increasing small lot development, more data needs to be collected over time before it is clear if this is a trend.
- Developed regions of the unincorporated urban growth areas are more likely to be annexed into a city than undeveloped regions. This analysis only looks at those areas that were already designated as urban growth areas as of 1998, the baseline year for these data. It does not track subdivisions that were approved in urban growth areas and subsequently annexed by a city. This is a large part of the explanation as to why trends are more difficult to detect in the UGAs.

For Further Information:

See Tables III-21 III-22 and Chapter III of [The Profile](#).

Benchmark 5

The Percentage of Small Lots* Created in Subdivisions in the Cities and UGAs Increases Over Time

see Benchmark 6 for overall density of subdivisions.

see Tables III-21 and III-22

see Tables III-21 and III-22

*Note: For purposes of this report the definition of small lots varies between cities and the unincorporated urban growth areas. In the cities, a “small” lot is less than one seventh of an acre. In the UGAs, a “small” lot is less than a quarter acre.

Benchmark 6

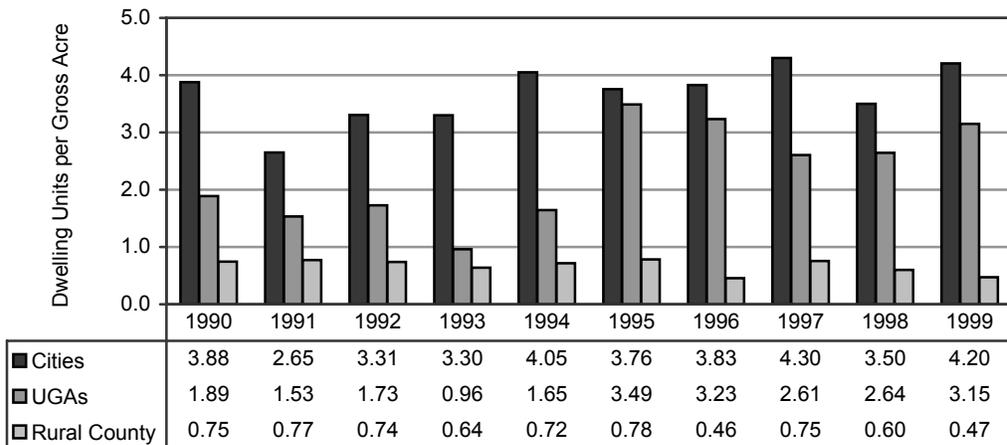
**Subdivision
Density*
Increases Over
Time in Urban
Areas**

*Note This measure is a combination of recorded single-family subdivision plats and built multifamily units

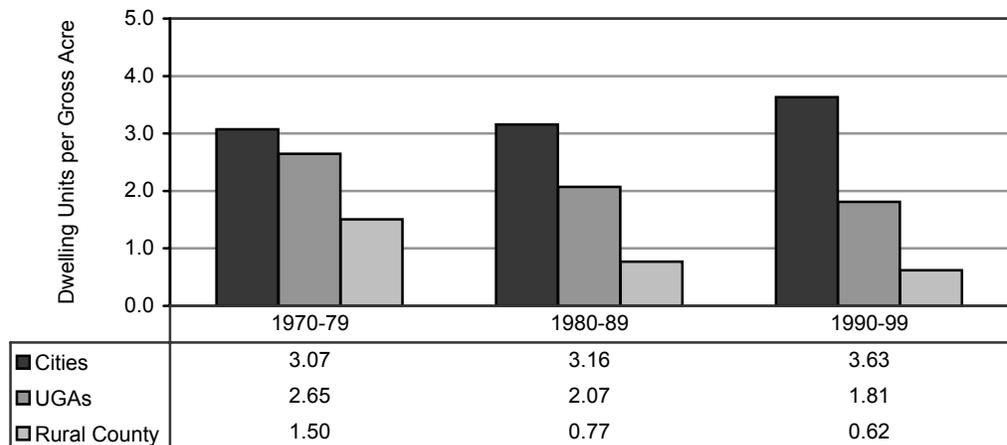
Source: Tables III-27



**Figure III-5
Number of Approved Dwelling Units per Total Acre
in Subdivisions, 1990-1999**



**Figure III-6
Number of Approved Dwelling Units per Total Acre
in Subdivisions, 1970-1999**



Source: Table III-25

Assessment:
**Subdivision density in the urban areas has
 increased over time.**

Benchmark 6

**Subdivision
 Density*
 Increases Over
 Time in Urban
 Areas**

Key Observations:

- Subdivision density includes lands set aside for open space and rights-of-way, as well as land given to new residential development.
- Subdivision density in the cities has increased from 3.88 in 1990 to 4.20 in 1999.
- Subdivision density in unincorporated urban growth areas has increased over the last decade, increasing from 1.89 in 1990 to 3.15 in 1999.
- This is a positive reversal of trends towards lowers densities in the UGAs. UGA subdivision density over the decade of the 1970s was 2.65. However, by 1993, UGA subdivision density had dropped down to 0.96. Beginning in 1994 UGA subdivision density began to steadily increase, reaching 3.15 by 1999.
- Subdivision densities in the rural area have decreased over time. This is consistent with County planning goals to keep the rural areas rural in character. The amount of land being platted as subdivisions in the rural county has not varied substantially over the last three decades.

see Figure III-6 and
 Table III-27

see Figure III-6 and
 Table III-27

see Tables III-25 and
 III-27

see Tables III-23 and
 III-24

For Further Information:

See Tables III-23 to III-28 and Chapter III of [The Profile](#).

***Note** This measure is a combination of recorded single-family subdivision plats and built multifamily units

Table III-1
Dwelling Unit Estimates of Cities and UGAs, Thurston County, 1994-2002

Jurisdiction		1994	1995	1996	1997	1998	1999	2000	2001	2002
Bucoda	Total	212	214	220	228	232	235	236	238	242
Lacey	City	10,332	11,036	11,594	12,121	12,477	12,898	13,160	13,304	13,491
	UGA	10,534	10,419	10,525	10,602	10,758	10,900	11,014	11,132	11,492
	Total	20,866	21,455	22,119	22,723	23,235	23,798	24,174	24,436	24,983
Olympia	City	17,689	18,138	18,464	18,820	19,049	19,325	19,738	19,742	19,889
	UGA	3,453	3,474	3,436	3,512	3,616	3,694	3,806	3,942	4,039
	Total	21,142	21,612	21,900	22,332	22,665	23,019	23,544	23,684	23,928
Rainier	City	486	492	502	530	542	547	551	549	551
	UGA	60	62	63	62	67	67	66	67	68
	Total	546	554	565	592	609	614	617	616	619
Tenino	City	531	568	581	592	601	610	615	621	627
	UGA	83	54	56	56	57	59	60	60	62
	Total	614	622	637	648	658	669	675	681	689
Tumwater	City	5,281	5,626	5,716	5,749	5,793	5,897	5,953	5,987	6,031
	UGA	2,795	2,844	2,844	2,899	2,939	2,999	3,089	3,117	3,167
	Total	8,076	8,470	8,560	8,648	8,732	8,896	9,042	9,104	9,198
Yelm	City	847	952	1,039	1,110	1,163	1,230	1,323	1,379	1,487
	UGA	429	408	414	415	425	433	425	431	439
	Total	1,276	1,360	1,453	1,525	1,588	1,663	1,748	1,810	1,926
Grand Mound UGA	Total	302	305	307	310	313	316	316	318	324
Chehalis Reservation		13								
Nisqually Reservation		211	211	212	212	212	212	212	212	213
Total Cities		35,378	37,026	38,116	39,150	39,857	40,742	41,576	41,820	42,318
Total UGAs		17,656	17,566	17,645	17,856	18,175	18,468	18,776	19,067	19,592
Total Urban Areas		53,034	54,592	55,761	57,006	58,032	59,210	60,352	60,887	61,910
Rural Unincorporated County		22,005	22,789	23,511	24,205	24,882	25,593	26,300	26,934	27,655
Thurston County Total		75,039	77,381	79,272	81,211	82,914	84,803	86,652	87,821	89,565

Sources: TRPC; U.S. Bureau of the Census; Washington State Office of Financial Management; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. City and UGA boundaries may change over time due to annexations. Data are for April 1 of each year.

Note: Dwelling unit estimates incorporate housing starts data, however, the methodology also includes calibrating to U.S. Census and OFM data, includes demolitions, and does not include replacements and activity in manufactured home parks. For more information, please see technical documentation on “Small Area Population and Dwelling Unit Estimates” in the appendix of this report.

Table III-2
Distribution of Estimated Total Dwelling Units for Cities and UGAs
by Percentage, Thurston County, 1994-2002

Jurisdiction		1994	1995	1996	1997	1998	1999	2000	2001	2002
Bucoda	Total	0.3%								
Lacey	City	13.8%	14.3%	14.6%	14.9%	15.0%	15.2%	15.2%	15.1%	15.1%
	UGA	14.0%	13.5%	13.3%	13.1%	13.0%	12.9%	12.7%	12.7%	12.8%
	Total	27.8%	27.7%	27.9%	28.0%	28.0%	28.1%	27.9%	27.8%	27.9%
Olympia	City	23.6%	23.4%	23.3%	23.2%	23.0%	22.8%	22.8%	22.5%	22.2%
	UGA	4.6%	4.5%	4.3%	4.3%	4.4%	4.4%	4.4%	4.5%	4.5%
	Total	28.2%	27.9%	27.6%	27.5%	27.3%	27.1%	27.2%	27.0%	26.7%
Rainier	City	0.6%	0.6%	0.6%	0.7%	0.7%	0.6%	0.6%	0.6%	0.6%
	UGA	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
	Total	0.7%								
Tenino	City	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
	UGA	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
	Total	0.8%								
Tumwater	City	7.0%	7.3%	7.2%	7.1%	7.0%	7.0%	6.9%	6.8%	6.7%
	UGA	3.7%	3.7%	3.6%	3.6%	3.5%	3.5%	3.6%	3.5%	3.5%
	Total	10.8%	10.9%	10.8%	10.6%	10.5%	10.5%	10.4%	10.4%	10.3%
Yelm	City	1.1%	1.2%	1.3%	1.4%	1.4%	1.5%	1.5%	1.6%	1.7%
	UGA	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
	Total	1.7%	1.8%	1.8%	1.9%	1.9%	2.0%	2.0%	2.1%	2.2%
Grand Mound UGA	Total	0.4%								
Chehalis Reservation		0.0%								
Nisqually Reservation		0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%
Total Cities		47.1%	47.8%	48.1%	48.2%	48.1%	48.0%	48.0%	47.6%	47.2%
Total UGAs		23.5%	22.7%	22.3%	22.0%	21.9%	21.8%	21.7%	21.7%	21.9%
Total Urban Areas		70.7%	70.5%	70.3%	70.2%	70.0%	69.8%	69.6%	69.3%	69.1%
Rural Unincorporated County		29.3%	29.5%	29.7%	29.8%	30.0%	30.2%	30.4%	30.7%	30.9%
Thurston County Total		100.0%								

Sources: TRPC; U.S. Bureau of the Census; Washington State Office of Financial Management; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. City and UGA boundaries may change over time due to annexations. Data are for April 1 of each year.

Note: Dwelling unit estimates incorporate housing starts data, however, the methodology also includes calibrating to U.S. Census and OFM data, includes demolitions, and does not include replacements and activity in manufactured home parks. For more information, please see technical documentation on "Small Area Population and Dwelling Unit Estimates" in the appendix of this report.

Table III-3
Average Annual Growth Rate of Estimated Dwelling Units
Thurston County, 1994-2002

Jurisdiction		1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	Average
Bucoda	Total	0.9%	2.8%	3.6%	1.8%	1.3%	0.4%	0.8%	1.7%	1.7%
Lacey	City	6.8%	5.1%	4.5%	2.9%	3.4%	2.0%	1.1%	1.4%	3.4%
	UGA	-1.1%	1.0%	0.7%	1.5%	1.3%	1.0%	1.1%	3.2%	1.1%
	Total	2.8%	3.1%	2.7%	2.3%	2.4%	1.6%	1.1%	2.2%	2.3%
Olympia	City	2.5%	1.8%	1.9%	1.2%	1.4%	2.1%	0.0%	0.7%	1.5%
	UGA	0.6%	-1.1%	2.2%	3.0%	2.2%	3.0%	3.6%	2.4%	2.0%
	Total	2.2%	1.3%	2.0%	1.5%	1.6%	2.3%	0.6%	1.0%	1.6%
Rainier	City	1.2%	2.0%	5.6%	2.3%	0.9%	0.7%	-0.4%	0.4%	1.6%
	UGA	3.3%	1.6%	-1.6%	8.1%	0.0%	-1.5%	1.5%	1.9%	1.6%
	Total	1.5%	2.0%	4.8%	2.9%	0.8%	0.5%	-0.2%	0.5%	1.6%
Tenino	City	7.0%	2.3%	1.9%	1.5%	1.5%	0.8%	1.0%	1.0%	2.1%
	UGA	-34.9%	3.7%	0.0%	1.8%	3.5%	1.7%	0.0%	3.8%	-3.5%
	Total	1.3%	2.4%	1.7%	1.5%	1.7%	0.9%	0.9%	1.2%	1.5%
Tumwater	City	6.5%	1.6%	0.6%	0.8%	1.8%	0.9%	0.6%	0.7%	1.7%
	UGA	1.8%	0.0%	1.9%	1.4%	2.0%	3.0%	0.9%	1.6%	1.6%
	Total	4.9%	1.1%	1.0%	1.0%	1.9%	1.6%	0.7%	1.0%	1.6%
Yelm	City	12.4%	9.1%	6.8%	4.8%	5.8%	7.6%	4.2%	7.8%	7.3%
	UGA	-4.9%	1.5%	0.2%	2.4%	1.9%	-1.8%	1.4%	1.8%	0.3%
	Total	6.6%	6.8%	5.0%	4.1%	4.7%	5.1%	3.5%	6.4%	5.3%
Grand Mound UGA	Total	1.0%	0.7%	1.0%	1.0%	1.0%	0.0%	0.6%	2.0%	0.9%
Chehalis Reservation		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%
Nisqually Reservation		0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%
Total Cities		4.7%	2.9%	2.7%	1.8%	2.2%	2.0%	0.6%	1.2%	2.3%
Total UGAs		-0.5%	0.4%	1.2%	1.8%	1.6%	1.7%	1.5%	2.8%	1.3%
Total Urban Areas		2.9%	2.1%	2.2%	1.8%	2.0%	1.9%	0.9%	1.7%	2.0%
Rural Unincorporated County		3.6%	3.2%	3.0%	2.8%	2.9%	2.8%	2.4%	2.7%	2.9%
Thurston County Total		3.1%	2.4%	2.4%	2.1%	2.3%	2.2%	1.3%	2.0%	2.2%

Sources: TRPC; U.S. Bureau of the Census; Washington State Office of Financial Management; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. City and UGA boundaries may change over time due to annexations. Data are for April 1 of each year.

Note: Dwelling unit estimates incorporate housing starts data, however, the methodology also includes calibrating to U.S. Census and OFM data, includes demolitions, and does not include replacements and activity in manufactured home parks. For more information, please see technical documentation on "Small Area Population and Dwelling Unit Estimates" in the appendix of this report.

Table III-4
Number of Estimated New Dwelling Units of Cities and UGAs
Thurston County, 1994-2002

Jurisdiction		1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	Average
Bucoda	Total	2	6	8	4	3	1	2	4	4
Lacey	City	704	558	527	356	421	262	144	187	395
	UGA	-115	106	77	156	142	114	118	361	120
	Total	589	664	604	512	563	376	262	548	515
Olympia	City	449	326	356	229	276	413	4	147	275
	UGA	21	-38	76	104	78	112	136	96	73
	Total	470	288	432	333	354	525	140	243	348
Rainier	City	6	10	28	12	5	4	-2	2	8
	UGA	2	1	-1	5	0	-1	1	1	1
	Total	8	11	27	17	5	3	-1	3	9
Tenino	City	37	13	11	9	9	5	6	6	12
	UGA	-29	2	0	1	2	1	0	2	-3
	Total	8	15	11	10	11	6	6	8	9
Tumwater	City	345	90	33	44	104	56	34	44	94
	UGA	49	0	55	40	60	90	28	50	46
	Total	394	90	88	84	164	146	62	94	140
Yelm	City	105	87	71	53	67	93	56	108	80
	UGA	-21	6	1	10	8	-8	6	8	1
	Total	84	93	72	63	75	85	62	116	81
Grand Mound UGA	Total	3	2	3	3	3	0	2	6	3
Chehalis Reservation		0								
Nisqually Reservation		0	1	0	0	0	0	0	1	0
Total Cities		1,648	1,090	1,034	707	885	834	244	498	867
Total UGAs		-90	79	211	319	293	308	291	525	242
Total Urban Areas		1,558	1,169	1,245	1,026	1,178	1,142	535	1,023	1,109
Rural Unincorporated County		784	722	694	677	711	707	634	721	706
Thurston County Total		2,342	1,891	1,939	1,703	1,889	1,849	1,169	1,744	1,816

Sources: TRPC; U.S. Bureau of the Census; Washington State Office of Financial Management; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. City and UGA boundaries may change over time due to annexations. Data are for April 1 of each year.

Note: Dwelling unit estimates incorporate housing starts data, however, the methodology also includes calibrating to U.S. Census and OFM data, includes demolitions, and does not include replacements and activity in manufactured home parks. For more information,

Table III-5
Distribution of Estimated New Dwelling Units for Cities and UGAs by Percentage
Thurston County, 1994-2002

Jurisdiction		1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	Average
Bucoda	Total	0.1%	0.3%	0.4%	0.2%	0.2%	0.1%	0.2%	0.2%	0.2%
Lacey	City	30.1%	29.5%	27.2%	20.9%	22.3%	14.2%	12.3%	10.7%	21.7%
	UGA	-4.9%	5.6%	4.0%	9.2%	7.5%	6.2%	10.1%	20.7%	6.6%
	Total	25.1%	35.1%	31.2%	30.1%	29.8%	20.3%	22.4%	31.4%	28.3%
Olympia	City	19.2%	17.2%	18.4%	13.4%	14.6%	22.3%	0.3%	8.4%	15.1%
	UGA	0.9%	-2.0%	3.9%	6.1%	4.1%	6.1%	11.7%	5.5%	4.0%
	Total	20.1%	15.2%	22.3%	19.6%	18.7%	28.4%	12.0%	14.0%	19.2%
Rainier	City	0.3%	0.5%	1.4%	0.7%	0.3%	0.2%	-0.2%	0.1%	0.4%
	UGA	0.1%	0.1%	-0.1%	0.3%	0.0%	-0.1%	0.1%	0.1%	0.1%
	Total	0.3%	0.6%	1.4%	1.0%	0.3%	0.2%	-0.1%	0.2%	0.5%
Tenino	City	1.6%	0.7%	0.6%	0.5%	0.5%	0.3%	0.5%	0.3%	0.7%
	UGA	-1.2%	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%	-0.1%
	Total	0.3%	0.8%	0.6%	0.6%	0.6%	0.3%	0.5%	0.5%	0.5%
Tumwater	City	14.7%	4.8%	1.7%	2.6%	5.5%	3.0%	2.9%	2.5%	5.2%
	UGA	2.1%	0.0%	2.8%	2.3%	3.2%	4.9%	2.4%	2.9%	2.6%
	Total	16.8%	4.8%	4.5%	4.9%	8.7%	7.9%	5.3%	5.4%	7.7%
Yelm	City	4.5%	4.6%	3.7%	3.1%	3.5%	5.0%	4.8%	6.2%	4.4%
	UGA	-0.9%	0.3%	0.1%	0.6%	0.4%	-0.4%	0.5%	0.4%	0.1%
	Total	3.6%	4.9%	3.7%	3.7%	4.0%	4.6%	5.3%	6.6%	4.5%
Grand Mound UGA	Total	0.1%	0.1%	0.2%	0.2%	0.2%	0.0%	0.2%	0.4%	0.2%
Chehalis Reservation		0.0%								
Nisqually Reservation		0.0%	0.1%	0.0%						
Total Cities		70.4%	57.6%	53.3%	41.5%	46.9%	45.1%	20.9%	28.6%	47.8%
Total UGAs		-3.8%	4.2%	10.9%	18.7%	15.5%	16.7%	24.9%	30.1%	13.3%
Total Urban Areas		66.5%	61.8%	64.2%	60.2%	62.4%	61.8%	45.7%	58.7%	61.1%
Rural Unincorporated County		33.5%	38.2%	35.8%	39.8%	37.6%	38.2%	54.3%	41.3%	38.9%
Thurston County Total		100.0%								

Sources: TRPC; U.S. Bureau of the Census; Washington State Office of Financial Management; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. City and UGA boundaries may change over time due to annexations. Data are for April 1 of each year.

Note: Dwelling unit estimates incorporate housing starts data, however, the methodology also includes calibrating to U.S. Census and OFM data, includes demolitions, and does not include replacements and activity in manufactured home parks. For more information, please see technical documentation on "Small Area Population and Dwelling Unit Estimates" in the appendix of this report.

Table III-6
Single-Family Dwelling Unit Estimates of Cities and UGAs
Thurston County, 1994-2002

Jurisdiction		1994	1995	1996	1997	1998	1999	2000	2001	2002
Bucoda	Total	178	180	185	191	195	197	197	197	199
Lacey	City	5,676	6,100	6,511	6,827	7,125	7,420	7,620	7,743	7,881
	UGA	7,785	7,840	7,927	7,998	8,084	8,200	8,308	8,399	8,549
	Total	13,461	13,940	14,438	14,825	15,209	15,620	15,928	16,142	16,430
Olympia	City	9,673	9,894	10,086	10,219	10,339	10,547	10,679	10,722	10,851
	UGA	2,460	2,480	2,450	2,523	2,617	2,688	2,783	2,908	2,993
	Total	12,133	12,374	12,536	12,742	12,956	13,235	13,462	13,630	13,844
Rainier	City	374	377	386	408	416	416	416	419	422
	UGA	52	52	52	50	55	55	55	56	56
	Total	426	429	438	458	471	471	471	475	478
Tenino	City	389	395	407	417	423	425	428	435	438
	UGA	39	39	40	40	41	43	43	43	44
	Total	428	434	447	457	464	468	471	478	482
Tumwater	City	2,547	2,573	2,650	2,678	2,715	2,794	2,838	2,865	2,899
	UGA	1,607	1,650	1,644	1,690	1,719	1,770	1,853	1,878	1,919
	Total	4,154	4,223	4,294	4,368	4,434	4,564	4,691	4,742	4,818
Yelm	City	529	578	637	697	739	794	867	907	975
	UGA	285	270	273	273	276	277	271	275	277
	Total	814	848	910	970	1,015	1,071	1,138	1,182	1,252
Grand Mound UGA	Total	87	87	89	89	89	89	89	89	93
Chehalis Reservation		8								
Nisqually Reservation		205	206							
Total Cities		19,366	20,097	20,862	21,437	21,952	22,593	23,045	23,288	23,664
Total UGAs		12,315	12,418	12,475	12,663	12,881	13,122	13,402	13,647	13,931
Total Urban Areas		31,681	32,515	33,337	34,100	34,833	35,715	36,447	36,935	37,596
Rural Unincorporated County		16,181	16,703	17,182	17,659	18,063	18,516	18,978	19,448	20,034
Thurston County Total		47,862	49,218	50,519	51,759	52,896	54,231	55,425	56,383	57,630

Sources: TRPC; U.S. Bureau of the Census; Washington State Office of Financial Management; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. City and UGA boundaries may change over time due to annexations. Data are for April 1 of each year.

Note: Dwelling unit estimates incorporate housing starts data, however, the methodology also includes calibrating to U.S. Census and OFM data, includes demolitions, and does not include replacements and activity in manufactured home parks. For more information, please see technical documentation on "Small Area Population and Dwelling Unit Estimates" in the appendix of this report.

Table III-7
Number of Estimated New Single-Family Dwelling Units of Cities and UGAs
Thurston County, 1994-2002

Jurisdiction		1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	Average
Bucoda	Total	2	5	6	4	2	0	0	2	3
Lacey	City	424	411	316	298	295	200	123	138	276
	UGA	55	87	71	86	116	108	91	150	95
	Total	479	498	387	384	411	308	214	288	371
Olympia	City	221	192	133	120	208	132	43	129	147
	UGA	20	-30	73	94	71	95	125	85	67
	Total	241	162	206	214	279	227	168	215	214
Rainier	City	3	9	22	8	0	0	3	3	6
	UGA	0	0	-2	5	0	0	1	0	1
	Total	3	9	20	13	0	0	4	3	6
Tenino	City	6	12	10	6	2	3	7	3	6
	UGA	0	1	0	1	2	0	0	1	1
	Total	6	13	10	7	4	3	7	5	7
Tumwater	City	26	77	28	37	79	44	27	34	44
	UGA	43	-6	46	29	51	83	25	41	39
	Total	69	71	74	66	130	127	51	75	83
Yelm	City	49	59	60	42	55	73	40	67	56
	UGA	-15	3	0	3	1	-6	4	2	-1
	Total	34	62	60	45	56	67	44	69	55
Grand Mound UGA	Total	0	2	0	0	0	0	0	4	1
Chehalis Reservation		0	0	0	0	0	0	0	0	0
Nisqually Reservation		0	0	0	0	0	0	0	1	0
Total Cities		731	765	575	515	641	452	243	377	537
Total UGAs		103	57	188	218	241	280	245	284	202
Total Urban Areas		834	822	763	733	882	732	488	661	739
Rural Unincorporated County		522	479	477	404	453	462	470	586	482
Thurston County Total		1,356	1,301	1,240	1,137	1,335	1,194	958	1,246	1,221

Sources: TRPC; U.S. Bureau of the Census; Washington State Office of Financial Management; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. City and UGA boundaries may change over time due to annexations. Data are for April 1 of each year.

Note: Dwelling unit estimates incorporate housing starts data, however, the methodology also includes calibrating to U.S. Census and OFM data, includes demolitions, and does not include replacements and activity in manufactured home parks. For more information, please see technical documentation on “Small Area Population and Dwelling Unit Estimates” in the appendix of this report.

Table III-8
Multifamily Dwelling Unit Estimates of Cities and UGAs
Thurston County, 1994-2002

Jurisdiction		1994	1995	1996	1997	1998	1999	2000	2001	2002
Bucoda	Total	0								
Lacey	City	3,837	4,064	4,205	4,411	4,463	4,587	4,649	4,667	4,707
	UGA	1,538	1,415	1,423	1,423	1,492	1,513	1,513	1,519	1,709
	Total	5,375	5,479	5,628	5,834	5,955	6,100	6,162	6,185	6,416
Olympia	City	7,301	7,529	7,653	7,876	7,983	8,049	8,331	8,299	8,325
	UGA	818	818	820	822	832	836	854	866	875
	Total	8,119	8,347	8,473	8,698	8,815	8,885	9,185	9,165	9,201
Rainier	City	36	36	36	36	36	36	36	35	35
	UGA	0	0	0	0	0	0	0	0	0
	Total	36	35	35						
Tenino	City	93	93	93	93	93	93	93	93	93
	UGA	4	4	4	4	4	4	4	4	4
	Total	97								
Tumwater	City	2,281	2,599	2,611	2,617	2,625	2,653	2,667	2,675	2,685
	UGA	444	445	441	443	445	445	445	445	447
	Total	2,725	3,044	3,052	3,060	3,070	3,098	3,112	3,120	3,132
Yelm	City	229	272	298	308	318	324	328	342	372
	UGA	15	12	12	12	12	14	14	14	14
	Total	244	284	310	320	330	338	342	356	386
Grand Mound UGA	Total	36								
Chehalis Reservation		0								
Nisqually Reservation		0								
Total Cities		13,777	14,593	14,896	15,341	15,518	15,742	16,104	16,110	16,217
Total UGAs		2,855	2,730	2,736	2,740	2,821	2,848	2,866	2,884	3,085
Total Urban Areas		16,632	17,323	17,632	18,081	18,339	18,590	18,970	18,994	19,302
Rural Unincorporated County		893	893	893	893	897	898	902	905	920
Thurston County Total		17,525	18,216	18,525	18,974	19,236	19,488	19,872	19,898	20,222

Sources: TRPC; U.S. Bureau of the Census; Washington State Office of Financial Management; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. City and UGA boundaries may change over time due to annexations. Data are for April 1 of each year.

Note: Dwelling unit estimates incorporate housing starts data, however, the methodology also includes calibrating to U.S. Census and OFM data, includes demolitions, and does not include replacements and activity in manufactured home parks. For more information, please see technical documentation on "Small Area Population and Dwelling Unit Estimates" in the appendix of this report.

Table III-9
Number of Estimated New Multifamily Dwelling Units of Cities and UGAs
Thurston County, 1994-2002

Jurisdiction		1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	Average
Bucoda	Total	0	0	0	0	0	0	0	0	0
Lacey	City	227	141	206	52	124	62	18	40	109
	UGA	-123	8	0	69	21	0	6	190	21
	Total	104	149	206	121	145	62	23	230	130
Olympia	City	228	124	223	107	66	282	-32	26	128
	UGA	0	2	2	10	4	18	12	10	7
	Total	228	126	225	117	70	300	-20	35	135
Rainier	City	0	0	0	0	0	0	-1	0	0
	UGA	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	-1	0	0
Tenino	City	0	0	0	0	0	0	0	0	0
	UGA	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0
Tumwater	City	318	12	6	8	28	14	8	10	50
	UGA	1	-4	2	2	0	0	0	2	0
	Total	319	8	8	10	28	14	8	12	51
Yelm	City	43	26	10	10	6	4	14	31	18
	UGA	-3	0	0	0	2	0	0	0	0
	Total	40	26	10	10	8	4	14	31	18
Grand Mound UGA	Total	0	0	0	0	0	0	0	0	0
Chehalis Reservation		0	0	0	0	0	0	0	0	0
Nisqually Reservation		0	0	0	0	0	0	0	0	0
Total Cities		816	303	445	177	224	362	6	107	305
Total UGAs		-125	6	4	81	27	18	18	202	29
Total Urban Areas		691	309	449	258	251	380	24	309	334
Rural Unincorporated County		0	0	0	4	1	4	3	15	3
Thurston County Total		691	309	449	262	252	384	26	323	337

Sources: TRPC; U.S. Bureau of the Census; Washington State Office of Financial Management; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. City and UGA boundaries may change over time due to annexations. Data are for April 1 of each year.

Note: Dwelling unit estimates incorporate housing starts data, however, the methodology also includes calibrating to U.S. Census and OFM data, includes demolitions, and does not include replacements and activity in manufactured home parks. For more information, please see technical documentation on “Small Area Population and Dwelling Unit Estimates” in the appendix of this report.

Table III-10
Manufactured Home Dwelling Unit Estimates of Cities and UGAs
Thurston County, 1994-2002

Jurisdiction		1994	1995	1996	1997	1998	1999	2000	2001	2002
Bucoda	Total	34	34	35	37	37	38	39	41	43
Lacey	City	819	872	878	883	889	891	891	894	903
	UGA	1,211	1,164	1,175	1,181	1,182	1,187	1,193	1,214	1,235
	Total	2,030	2,036	2,053	2,064	2,071	2,078	2,084	2,108	2,138
Olympia	City	715	715	725	725	727	729	728	721	713
	UGA	175	176	166	167	167	170	169	169	171
	Total	890	891	891	892	894	899	897	890	883
Rainier	City	76	79	80	86	90	95	99	95	94
	UGA	8	10	11	12	12	12	11	11	12
	Total	84	89	91	98	102	107	110	106	106
Tenino	City	49	80	81	82	85	92	94	94	96
	UGA	40	11	12	12	12	12	13	13	14
	Total	89	91	93	94	97	104	107	107	110
Tumwater	City	453	454	455	454	453	450	448	448	447
	UGA	744	749	759	766	775	784	791	794	801
	Total	1,197	1,203	1,214	1,220	1,228	1,234	1,239	1,242	1,248
Yelm	City	89	102	104	105	106	112	128	130	140
	UGA	129	126	129	130	137	142	140	142	148
	Total	218	228	233	235	243	254	268	272	288
Grand Mound UGA	Total	179	182	182	185	188	191	191	193	195
Chehalis Reservation		5	5	5	5	5	5	5	5	5
Nisqually Reservation		6	6	7						
Total Cities		2,235	2,336	2,358	2,372	2,387	2,407	2,427	2,422	2,437
Total UGAs		2,486	2,418	2,434	2,453	2,473	2,498	2,508	2,536	2,575
Total Urban Areas		4,721	4,754	4,792	4,825	4,860	4,905	4,935	4,958	5,012
Rural Unincorporated County		4,931	5,193	5,436	5,653	5,922	6,179	6,420	6,581	6,702
Thurston County Total		9,652	9,947	10,228	10,478	10,782	11,084	11,355	11,539	11,713

Sources: TRPC; U.S. Bureau of the Census; Washington State Office of Financial Management; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. City and UGA boundaries may change over time due to annexations. Data are for April 1 of each year.

Note: Dwelling unit estimates incorporate housing starts data, however, the methodology also includes calibrating to U.S. Census and OFM data, includes demolitions, and does not include replacements and activity in manufactured home parks. For more information, please see technical documentation on "Small Area Population and Dwelling Unit Estimates" in the appendix of this report.

Table III-11
Number of Estimated New Manufactured Home Dwelling Units of Cities
and UGAs, Thurston County, 1994-2002

Jurisdiction		1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	Average
Bucoda	Total	0	1	2	0	1	1	2	2	1
Lacey	City	53	6	5	6	2	0	3	9	11
	UGA	-47	11	6	1	5	6	21	21	3
	Total	6	17	11	7	7	6	24	30	14
Olympia	City	0	10	0	2	2	-1	-7	-8	0
	UGA	1	-10	1	0	3	-1	0	2	-1
	Total	1	0	1	2	5	-2	-7	-6	-1
Rainier	City	3	1	6	4	5	4	-4	-1	2
	UGA	2	1	1	0	0	-1	0	1	1
	Total	5	2	7	4	5	3	-4	0	3
Tenino	City	31	1	1	3	7	2	0	2	6
	UGA	-29	1	0	0	0	1	0	1	-3
	Total	2	2	1	3	7	3	0	3	3
Tumwater	City	1	1	-1	-1	-3	-2	0	0	-1
	UGA	5	10	7	9	9	7	3	7	7
	Total	6	11	6	8	6	5	3	7	6
Yelm	City	13	2	1	1	6	16	2	10	6
	UGA	-3	3	1	7	5	-2	2	6	2
	Total	10	5	2	8	11	14	4	16	9
Grand Mound UGA	Total	3	0	3	3	3	0	2	2	2
Chehalis Reservation		0	0	0	0	0	0	0	0	0
Nisqually Reservation		0	1	0	0	0	0	0	0	0
Total Cities		101	22	14	15	20	20	-5	14	25
Total UGAs		-68	16	19	20	25	10	28	40	11
Total Urban Areas		33	38	33	35	45	30	23	54	36
Rural Unincorporated County		262	243	217	269	257	241	161	120	221
Thurston County Total		295	281	250	304	302	271	184	174	258

Sources: TRPC; U.S. Bureau of the Census; Washington State Office of Financial Management; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. City and UGA boundaries may change over time due to annexations. Data are for April 1 of each year.

Note: Dwelling unit estimates incorporate housing starts data, however, the methodology also includes calibrating to U.S. Census and OFM data, includes demolitions, and does not include replacements and activity in manufactured home parks. For more information, please see technical documentation on "Small Area Population and Dwelling Unit Estimates" in the appendix of this report.

**Table III-12
Dwelling Unit Forecast of Cities and UGAs, Thurston County, 2005-2025**

Jurisdiction	Total Dwelling Units					Single-Family				
	2005	2010	2015	2020	2025	2005	2010	2015	2020	2025
Bucoda	245	251	254	256	258	200	204	206	207	208
City	15,020	16,681	18,101	19,400	20,366	9,574	10,632	11,400	12,045	12,478
UGA	12,156	13,788	15,651	17,166	18,342	9,388	10,624	12,054	13,186	14,035
Total	27,176	30,469	33,752	36,566	38,708	18,962	21,256	23,454	25,231	26,513
Olympia	21,787	23,510	25,343	27,081	28,601	11,547	11,849	12,197	12,515	12,830
City	4,338	5,329	6,862	8,235	9,295	3,293	4,048	5,179	6,166	6,897
UGA	17,449	18,181	18,481	18,846	19,306	8,254	7,801	7,018	6,349	5,933
Total	26,126	28,839	32,205	35,315	37,896	14,840	15,897	17,375	18,680	19,727
Rainier	637	708	760	804	845	413	463	500	531	563
City	74	80	83	86	90	52	56	59	61	64
UGA	563	628	677	718	755	361	407	441	470	499
Total	711	788	843	890	935	465	520	558	592	627
Tenino	625	633	643	657	669	445	448	452	463	472
City	53	61	69	76	145	35	42	49	55	124
UGA	572	572	574	581	524	410	406	403	408	348
Total	678	694	712	732	814	480	490	501	517	596
Tumwater	6,660	7,273	7,993	8,776	9,470	3,262	3,441	3,744	4,132	4,457
City	3,877	4,479	5,296	6,442	8,060	2,237	2,539	3,080	3,970	5,373
UGA	2,783	2,794	2,697	2,334	1,410	1,025	664	664	1,162	914
Total	10,537	11,753	13,289	15,218	17,531	5,499	5,980	6,825	8,102	9,831
Yelm	1,786	2,304	2,820	3,305	3,684	1,191	1,465	1,650	1,810	1,923
City	555	581	740	950	1,245	326	342	494	698	989
UGA	1,231	1,723	2,080	2,355	2,439	865	1,123	1,156	1,112	934
Total	2,341	2,885	3,560	4,254	4,930	1,517	1,807	2,143	2,508	2,911
Grand Mound UGA	427	489	541	581	610	114	143	166	184	199
Total Cities	46,761	51,360	55,914	60,277	63,894	26,633	28,504	30,148	31,703	32,931
Total UGAs	21,480	24,807	29,243	33,535	37,788	15,445	17,793	21,081	24,319	27,681
Total Urban Areas	68,240	76,166	85,157	93,812	101,682	42,078	46,297	51,229	56,022	60,612
Rural Unincorporated County	33,529	36,677	39,583	42,295	44,520	22,535	24,988	27,373	29,690	31,603
Thurston County Total	101,769	112,843	124,740	136,107	146,202	64,613	71,285	78,602	85,712	92,215

Sources: TRPC; U.S. Bureau of the Census; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth

**Table III-12, continued
Dwelling Unit Forecast of Cities and UGAs, Thurston County, 2005-2025**

Jurisdiction	Multifamily					Manufactured Homes				
	2005	2010	2015	2020	2025	2005	2010	2015	2020	2025
Bucoda	2	2	2	2	2	43	44	46	47	47
Lacey	4,490	5,091	5,745	6,400	6,935	956	957	957	955	953
UGA	1,370	1,755	2,179	2,557	2,881	1,398	1,410	1,418	1,423	1,425
Total	5,861	6,846	7,924	8,957	9,816	2,354	2,367	2,375	2,378	2,379
Olympia	9,415	10,810	12,277	13,683	14,879	826	851	869	883	893
UGA	851	1,084	1,485	1,869	2,196	194	197	199	200	201
Total	10,266	11,894	13,762	15,552	17,075	1,019	1,048	1,068	1,083	1,094
Rainier	27	30	32	34	36	197	214	228	238	247
UGA	0	0	0	0	0	22	24	25	25	26
Total	27	30	32	34	36	219	238	253	264	272
Tenino	95	98	104	107	110	86	87	87	87	87
UGA	0	0	0	0	0	17	19	20	20	21
Total	95	99	104	108	110	103	105	107	107	108
Tumwater	2,845	3,256	3,654	4,036	4,395	552	576	594	608	618
UGA	600	857	1,100	1,333	1,529	1,040	1,083	1,115	1,139	1,158
Total	3,446	4,113	4,754	5,368	5,923	1,592	1,660	1,710	1,747	1,776
Yelm	441	672	994	1,310	1,571	153	167	177	185	191
UGA	18	17	17	17	17	211	221	229	235	239
Total	459	690	1,011	1,327	1,588	364	388	406	420	431
Grand Mound UGA	53	79	103	120	131	259	267	273	278	281
Total Cities	17,316	19,959	22,808	25,572	27,926	2,812	2,896	2,958	3,002	3,036
Total UGAs	2,893	3,792	4,883	5,896	6,755	3,141	3,221	3,279	3,321	3,352
Total Urban Areas	20,209	23,752	27,692	31,467	34,681	5,953	6,117	6,236	6,323	6,388
Rural Unincorporated County	793	789	785	781	777	10,202	10,901	11,425	11,824	12,140
Thurston County Total	21,001	24,540	28,476	32,248	35,458	16,155	17,018	17,662	18,147	18,529

Sources: TRPC; U.S. Bureau of the Census; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. Assumes constant 1998 City and UGA boundaries.

**Table III-13
Distribution of Forecast Dwelling Units for Cities and UGAs by Percentage, Thurston County, 2005-2025**

Jurisdiction	Total Dwelling Units					Single-Family				
	2005	2010	2015	2020	2025	2005	2010	2015	2020	2025
Bucoda	Total	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.2%	0.2%
Lacey	City	14.8%	14.8%	14.5%	14.3%	14.8%	14.9%	14.5%	14.1%	13.5%
	UGA	11.9%	12.2%	12.5%	12.6%	14.5%	14.9%	15.3%	15.4%	15.2%
	Total	26.7%	27.0%	27.1%	26.9%	29.3%	29.8%	29.8%	29.4%	28.8%
Olympia	City	21.4%	20.8%	20.3%	19.9%	17.9%	16.6%	15.5%	14.6%	13.9%
	UGA	4.3%	4.7%	5.5%	6.1%	5.1%	5.7%	6.6%	7.2%	7.5%
	Total	25.7%	25.6%	25.8%	25.9%	23.0%	22.3%	22.1%	21.8%	21.4%
Rainier	City	0.6%	0.6%	0.6%	0.6%	0.6%	0.7%	0.6%	0.6%	0.6%
	UGA	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
	Total	0.7%								
Tenino	City	0.6%	0.6%	0.5%	0.5%	0.7%	0.6%	0.6%	0.5%	0.5%
	UGA	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
	Total	0.7%	0.6%	0.6%	0.6%	0.7%	0.7%	0.6%	0.6%	0.6%
Tumwater	City	6.5%	6.4%	6.4%	6.4%	5.0%	4.8%	4.8%	4.8%	4.8%
	UGA	3.8%	4.0%	4.2%	4.7%	3.5%	3.6%	3.9%	4.6%	5.8%
	Total	10.4%	10.4%	10.7%	11.2%	8.5%	8.4%	8.7%	9.5%	10.7%
Yelm	City	1.8%	2.0%	2.3%	2.4%	1.8%	2.1%	2.1%	2.1%	2.1%
	UGA	0.5%	0.5%	0.6%	0.7%	0.5%	0.5%	0.6%	0.8%	1.1%
	Total	2.3%	2.6%	2.9%	3.1%	2.3%	2.5%	2.7%	2.9%	3.2%
Grand Mound UGA	Total	0.4%	0.4%	0.4%	0.4%	0.2%	0.2%	0.2%	0.2%	0.2%
Total Cities		45.9%	45.5%	44.8%	44.3%	41.2%	40.0%	38.4%	37.0%	35.7%
Total UGAs		21.1%	22.0%	23.4%	24.6%	23.9%	25.0%	26.8%	28.4%	30.0%
Total Urban Areas		67.1%	67.5%	68.3%	68.9%	65.1%	64.9%	65.2%	65.4%	65.7%
Rural Unincorporated County		32.9%	32.5%	31.7%	31.1%	34.9%	35.1%	34.8%	34.6%	34.3%
Thurston County Total		100.0%								

Sources: TRPC; U.S. Bureau of the Census; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. Assumes constant 1998 City and UGA boundaries.

Table III-13, continued
Distribution of Forecast Dwelling Units for Cities and UGAs by Percentage, Thurston County, 2005-2025

Jurisdiction	Multifamily					Manufactured Homes				
	2005	2010	2015	2020	2025	2005	2010	2015	2020	2025
Bucoda	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.3%	0.3%	0.3%
Lacey	21.4%	20.7%	20.2%	19.8%	19.6%	5.9%	5.6%	5.4%	5.3%	5.1%
UGA	6.5%	7.1%	7.7%	7.9%	8.1%	8.7%	8.3%	8.0%	7.8%	7.7%
Total	27.9%	27.9%	27.8%	27.8%	27.7%	14.6%	13.9%	13.4%	13.1%	12.8%
Olympia	44.8%	44.1%	43.1%	42.4%	42.0%	5.1%	5.0%	4.9%	4.9%	4.8%
UGA	4.1%	4.4%	5.2%	5.8%	6.2%	1.2%	1.2%	1.1%	1.1%	1.1%
Total	48.9%	48.5%	48.3%	48.2%	48.2%	6.3%	6.2%	6.0%	6.0%	5.9%
Rainier	0.1%	0.1%	0.1%	0.1%	0.1%	1.2%	1.3%	1.3%	1.3%	1.3%
UGA	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Total	0.1%	0.1%	0.1%	0.1%	0.1%	1.4%	1.4%	1.4%	1.5%	1.5%
Tenino	0.5%	0.4%	0.4%	0.3%	0.3%	0.5%	0.5%	0.5%	0.5%	0.5%
UGA	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Total	0.5%	0.4%	0.4%	0.3%	0.3%	0.6%	0.6%	0.6%	0.6%	0.6%
Tumwater	13.5%	13.3%	12.8%	12.5%	12.4%	3.4%	3.4%	3.4%	3.3%	3.3%
UGA	2.9%	3.5%	3.9%	4.1%	4.3%	6.4%	6.4%	6.3%	6.3%	6.3%
Total	16.4%	16.8%	16.7%	16.6%	16.7%	9.9%	9.8%	9.7%	9.6%	9.6%
Yelm	2.1%	2.7%	3.5%	4.1%	4.4%	0.9%	1.0%	1.0%	1.0%	1.0%
UGA	0.1%	0.1%	0.1%	0.1%	0.0%	1.3%	1.3%	1.3%	1.3%	1.3%
Total	2.2%	2.8%	3.6%	4.1%	4.5%	2.3%	2.3%	2.3%	2.3%	2.3%
Grand Mound UGA	0.3%	0.3%	0.4%	0.4%	0.4%	1.6%	1.6%	1.5%	1.5%	1.5%
Total Cities	82.4%	81.3%	80.1%	79.3%	78.8%	17.4%	17.0%	16.7%	16.5%	16.4%
Total UGAs	13.8%	15.5%	17.1%	18.3%	19.1%	19.4%	18.9%	18.6%	18.3%	18.1%
Total Urban Areas	96.2%	96.8%	97.2%	97.6%	97.8%	36.9%	35.9%	35.3%	34.8%	34.5%
Rural Unincorporated County	3.8%	3.2%	2.8%	2.4%	2.2%	63.1%	64.1%	64.7%	65.2%	65.5%
Thurston County Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Sources: TRPC; U.S. Bureau of the Census; Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Building Departments

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those dwelling units outside the city limits but within the long-term Urban Growth Management boundary. Assumes constant 1998 City and UGA boundaries.

Table III-14
Small Area Population Estimates and Population Forecast
Thurston County Jurisdictions, 1990-2025

Jurisdiction	Census			Estimate			Forecast		
	1990	2000	2003	2005	2010	2015	2020	2025	
Bucoda	Total	536	628	645	619	633	637	641	
Lacey	City	19,279	31,226	32,240	36,218	39,856	45,757	48,049	
	UGA	25,127	28,632	29,652	31,746	35,624	43,768	46,648	
	Total	44,406	59,858	61,892	67,964	75,479	89,525	94,697	
Olympia	City	33,729	42,514	42,860	45,440	48,080	54,020	56,969	
	UGA	7,195	9,269	9,859	10,639	12,940	19,627	22,057	
	Total	40,924	51,783	52,719	56,078	61,019	73,647	79,025	
Rainier	City	991	1,492	1,515	1,626	1,794	2,022	2,127	
	UGA	65	163	169	157	166	179	186	
	Total	1,056	1,655	1,684	1,783	1,961	2,201	2,314	
Tenino	City	1,292	1,447	1,495	1,502	1,503	1,538	1,566	
	UGA	193	151	155	130	149	186	365	
	Total	1,485	1,598	1,650	1,632	1,652	1,724	1,931	
Tumwater	City	9,976	12,698	12,740	14,200	15,179	17,991	19,423	
	UGA	6,053	7,281	7,542	8,849	10,157	14,768	18,742	
	Total	16,029	19,979	20,282	23,050	25,336	32,758	38,165	
Yelm	City	1,337	3,289	3,830	4,377	5,561	7,730	8,559	
	UGA	1,360	1,095	1,123	1,221	1,268	2,128	2,827	
	Total	2,697	4,384	4,953	5,597	6,829	9,858	11,386	
Grand Mound UGA	Total	708	811	824	1,316	1,700	1,876	2,064	
Total Cities		67,140	93,294	95,325	103,982	112,601	129,696	137,334	
Total UGAs		40,700	47,401	49,324	54,057	61,821	82,532	92,890	
Total Urban Areas		107,840	140,695	144,649	158,039	174,422	212,228	230,223	
Rural Unincorporated County		53,398	66,660	70,151	78,368	85,365	98,502	104,035	
Thurston County Total		161,238	207,355	214,800	236,406	259,787	310,730	334,258	

Sources: U.S. Bureau of the Census 1990, 2000, Washington State Office of Financial Management; TRPC

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include that population outside the city limits but within the long-term Urban Growth Management boundary. Includes population growth by annexation. Census and estimates are for April 1 of each year.

Table III-15
Population Distribution by Percentage, Thurston County

Jurisdiction	Census			Estimate			Forecast			
	1990	2000	2003	2005	2010	2015	2020	2025		
Bucoda	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%		
Lacey	12.0%	15.1%	15.0%	15.3%	15.3%	15.0%	14.7%	14.4%		
UGA	15.6%	13.8%	13.8%	13.4%	13.7%	14.0%	14.1%	14.0%		
Total	27.5%	28.9%	28.8%	28.7%	29.1%	29.1%	28.8%	28.3%		
Olympia	20.9%	20.5%	20.0%	19.2%	18.5%	17.9%	17.4%	17.0%		
UGA	4.5%	4.5%	4.6%	4.5%	5.0%	5.8%	6.3%	6.6%		
Total	25.4%	25.0%	24.5%	23.7%	23.5%	23.7%	23.7%	23.6%		
Rainier	0.6%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.6%		
UGA	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%		
Total	0.7%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%		
Tenino	0.8%	0.7%	0.7%	0.6%	0.6%	0.5%	0.5%	0.5%		
UGA	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%		
Total	0.9%	0.8%	0.8%	0.7%	0.6%	0.6%	0.6%	0.6%		
Turnwater	6.2%	6.1%	5.9%	6.0%	5.8%	5.8%	5.8%	5.8%		
UGA	3.8%	3.5%	3.5%	3.7%	3.9%	4.2%	4.8%	5.6%		
Total	9.9%	9.6%	9.4%	9.7%	9.8%	10.0%	10.5%	11.4%		
Yelm	0.8%	1.6%	1.8%	1.9%	2.1%	2.3%	2.5%	2.6%		
UGA	0.8%	0.5%	0.5%	0.5%	0.5%	0.6%	0.7%	0.8%		
Total	1.7%	2.1%	2.3%	2.4%	2.6%	2.9%	3.2%	3.4%		
Grand Mound UGA	0.4%	0.4%	0.4%	0.6%	0.6%	0.6%	0.6%	0.6%		
Total Cities	41.6%	45.0%	44.4%	44.0%	43.3%	42.5%	41.7%	41.1%		
Total UGAs	25.2%	22.9%	23.0%	22.9%	23.8%	25.3%	26.6%	27.8%		
Total Urban Areas	66.9%	67.9%	67.3%	66.9%	67.1%	67.8%	68.3%	68.9%		
Rural Unincorporated County	33.1%	32.1%	32.7%	33.1%	32.9%	32.2%	31.7%	31.1%		
Thurston County Total	100.0%									

Sources: U.S. Bureau of the Census 1990, 2000; Washington State Office of Financial Management; TRPC

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include that population outside the city limits but within the long-term Urban Growth Management boundary. Includes population growth by annexation. Census and estimates are for April 1 of each year.

Table III-16
Annexation of Population in Unincorporated Areas into Cities,
Thurston County Jurisdictions, 1990-1999

Jurisdiction	Bucoda	Lacey	Olympia	Rainier	Tenino	Tumwater	Yelm	Total Cities
1990-91	0	167	0	0	0	1	0	168
1991-92	0	10	0	0	0	10	0	20
1992-93	0	256	0	0	0	2	12	270
1993-94	0	198	0	0	0	0	358	556
1994-95	0	112	0	0	101	0	90	303
1995-96	0	0	318	0	0	107	0	425
1996-97	0	0	0	0	0	0	2	2
1997-98	0	54	0	0	0	4	0	58
1998-99	0	4	65	0	0	0	0	69
1999-00	0	0	0	0	0	0	25	25
2000-01	1	0	0	0	0	0	1	2
2001-02	0	0	0	0	0	1	0	1

Source: Washington State Office of Financial Management. Data are for April 1 of each year.

Table III-17
Estimate of Buildable Land in Acres by Jurisdiction, 2000

Jurisdiction		Total Land Area	Developed and Undevelopable Land ¹	Residential Buildable Land ²	Commercial and Industrial Buildable Land ²	Redevelopable Land ³
Bucoda	Total	274	186	81	8	2
Lacey	City	10,409	5,698	2,077	2,633	356
	UGA	10,760	6,185	3,620	955	196
	Total	21,169	11,883	5,697	3,588	552
Olympia	City	11,131	8,314	2,189	628	439
	UGA	4,863	2,701	2,003	159	14
	Total	15,994	11,014	4,192	787	453
Rainier	City	987	567	387	33	6
	UGA	437	248	168	22	0
	Total	1,424	815	554	55	6
Tenino	City	500	400	69	31	8
	UGA	731	271	437	24	0
	Total	1,231	671	505	55	8
Tumwater	City	6,424	4,222	915	1,287	218
	UGA	8,782	3,049	3,544	2,189	235
	Total	15,206	7,271	4,459	3,476	453
Yelm	City	3,567	904	2,248	414	95
	UGA	2,463	1,431	895	137	7
	Total	6,030	2,335	3,144	551	102
Grand Mound UGA	Total	983	431	158	395	60
Total Cities		33,291	20,291	7,965	5,035	1,123
Total UGAs		29,019	14,315	10,824	3,879	513
Total Urban Areas		62,310	34,607	18,789	8,914	1,636
Rural Unincorporated County		409,349	261,245	145,553	2,551	224
Thurston County Total		471,659	295,852	164,343	11,465	1,860

Source: TRPC

Explanation: ¹Developed and Undevelopable Land includes land uses or zoning districts that are either already developed as “fully-built” or are incompatible with future residential or commercial development (some examples include critical areas and open space, rights-of-way, parks, utilities, and cemeteries). ²Buildable Land includes both vacant land and the undeveloped portion of partially developed lands. ³Redevelopable Land is a subcategory of Developed Land and is based on a building to land value ratio.

Table III-18
Estimate of Gross and Net Residential Density by Jurisdiction, 2000

Jurisdiction		Total Land Area (acres)	Gross Residential Density ¹ (du/acre)	Developed Residential Land ² (acres)	Net Residential Density ³ (du/acre)
Bucoda	Total	274	0.88	86	2.79
Lacey	City	10,409	1.27	2,580	4.94
	UGA	10,760	1.04	4,440	2.51
	Total	21,169	1.15	7,020	3.40
Olympia	City	11,131	1.77	3,765	5.09
	UGA	4,863	0.78	2,121	1.79
	Total	15,994	1.47	5,886	3.90
Rainier	City	987	0.56	440	1.22
	UGA	437	0.16	177	0.38
	Total	1,424	0.43	617	0.98
Tenino	City	500	1.41	167	4.09
	UGA	731	0.07	173	0.29
	Total	1,231	0.62	340	2.16
Tumwater	City	6,424	0.92	1,445	4.06
	UGA	8,782	0.36	3,525	0.87
	Total	15,206	0.60	4,969	1.79
Yelm	City	3,567	0.36	686	1.83
	UGA	2,463	0.22	1,397	0.38
	Total	6,030	0.30	2,083	0.85
Grand Mound UGA	Total	983	0.34	329	0.97
Total Cities		33,291	1.25	9,168	4.42
Total UGAs		29,019	0.66	12,163	1.56
Total Urban Areas		62,310	0.98	21,330	2.79
Rural Unincorporated County		409,349	0.07	69,066	0.39
Thurston County Total		471,659	0.19	90,396	0.96

Source: TRPC

Explanation: ¹Gross Density measures overall density, that is, it includes lands set aside for right-of-ways, freshwater bodies, parks, and open space. ²Developed Residential Land consists of land that is currently occupied by one or more residential units (single-family, multifamily, or manufactured homes). ³Net Density includes all lots developed for residential uses. It excludes nondevelopable lands such as critical areas, open space, and rights-of-way, as well as vacant lands and those lands developed for commercial, industrial, or mixed-use purposes.

**Table III-19
Number of Single-Family Residential Lots Created in Subdivisions
by Lot Size Thurston County, 1970-1999**

Jurisdiction	> half an acre			half acre - qtr. acre			qtr. acre - 0.15 acres			< 0.15 acres			Total						
	70s	80s	90s	70s	80s	90s	70s	80s	90s	70s	80s	90s	70s	80s	90s	70s	80s	90s	
Total	0	0	14	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	19
Lacey	7	2	11	480	113	179	585	434	1,504	70	252	1,695	1,142	801	3,389				
UGA	105	169	215	1,357	1,239	281	902	407	342	3	190	11	2,367	2,005	849				
Total	112	171	226	1,837	1,352	460	1,487	841	1,846	73	442	1,706	3,509	2,806	4,238				
Olympia	36	17	9	502	221	184	587	457	758	18	85	432	1,143	780	1,383				
UGA	53	31	23	424	217	375	189	100	250	2	0	161	668	348	809				
Total	89	48	32	926	438	559	776	557	1,008	20	85	593	1,811	1,128	2,192				
Rainier	1	2	43	21	8	109	4	0	0	0	0	0	26	10	152				
UGA	0	0	1	0	0	18	0	0	0	0	0	0	0	0	19				
Total	1	2	44	21	8	127	4	0	0	0	0	0	26	10	171				
Tenino	0	0	2	2	0	32	14	0	87	1	0	2	17	0	123				
UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Total	0	0	2	2	0	32	14	0	87	1	0	2	17	0	123				
Tumwater	11	18	5	75	206	64	126	202	171	5	56	141	217	482	381				
UGA	31	39	134	185	157	304	16	12	60	1	0	41	233	208	539				
Total	42	57	139	260	363	368	142	214	231	6	56	182	450	690	920				
Yelm	1	3	5	61	10	28	57	6	294	0	0	107	119	19	434				
UGA	8	43	7	20	29	0	0	18	0	0	0	0	28	90	7				
Total	9	46	12	81	39	28	57	24	294	0	0	107	147	109	441				
Total Cities	56	42	89	1,141	558	601	1,373	1,099	2,814	94	393	2,377	2,664	2,092	5,881				
Total UGAs	197	282	380	1,986	1,642	978	1,107	537	652	6	190	213	3,296	2,651	2,223				
Total Urban Areas	253	324	469	3,127	2,200	1,579	2,480	1,636	3,466	100	583	2,590	5,960	4,743	8,104				
Rural Unincorp. County	867	622	966	1,322	156	259	1,227	21	4	21	1	0	3,437	800	1,229				
Thurston County Total	1,120	946	1,435	4,449	2,356	1,838	3,707	1,657	3,470	121	584	2,590	9,397	5,543	9,333				

Sources: TRPC, Thurston County Assessor's Office; Thurston County Auditor's Office.

Explanation: UGA is unincorporated Urban Growth Area

Note: Grand Mound UGA data is included in "Rural Unincorporated County." Due to data limitations, it is not currently possible to break out the Grand Mound UGA as a separate category for this data.

Table III-20
Percentage of Single-Family Residential Lots Created in Subdivisions
by Lot Size Thurston County, 1970-1999

Jurisdiction	> half an acre			half acre - qtr acre			qtr. acre - 0.15 acres			< 0.15 acres			Total		
	70s	80s	90s	70s	80s	90s	70s	80s	90s	70s	80s	90s	70s	80s	90s
Total	0%	0%	74%	0%	0%	26%	0%	0%	0%	0%	0%	0%	0%	0%	100%
City	1%	0%	0%	42%	14%	5%	51%	54%	44%	6%	31%	50%	100%	100%	100%
UGA	4%	8%	25%	57%	62%	33%	38%	20%	40%	0%	9%	1%	100%	100%	100%
Total	3%	6%	5%	52%	48%	11%	42%	30%	44%	2%	16%	40%	100%	100%	100%
City	3%	2%	1%	44%	28%	13%	51%	59%	55%	2%	11%	31%	100%	100%	100%
UGA	8%	9%	3%	63%	62%	46%	28%	29%	31%	0%	0%	20%	100%	100%	100%
Total	5%	4%	1%	51%	39%	26%	43%	49%	46%	1%	8%	27%	100%	100%	100%
City	4%	20%	28%	81%	80%	72%	15%	0%	0%	0%	0%	0%	100%	100%	100%
UGA	0%	0%	5%	0%	0%	95%	0%	0%	0%	0%	0%	0%	100%	100%	100%
Total	4%	20%	26%	81%	80%	74%	15%	0%	0%	0%	0%	0%	100%	100%	100%
City	0%	0%	2%	12%	0%	26%	82%	0%	71%	6%	0%	2%	100%	100%	100%
UGA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%
Total	0%	0%	2%	12%	0%	26%	82%	0%	71%	6%	0%	2%	100%	100%	100%
City	5%	4%	1%	35%	43%	17%	58%	42%	45%	2%	12%	37%	100%	100%	100%
UGA	13%	19%	25%	79%	75%	56%	7%	6%	11%	0%	0%	8%	100%	100%	100%
Total	9%	8%	15%	58%	53%	40%	32%	31%	25%	1%	8%	20%	100%	100%	100%
City	1%	16%	1%	51%	53%	6%	48%	32%	68%	0%	0%	25%	100%	100%	100%
UGA	29%	48%	100%	71%	32%	0%	0%	20%	0%	0%	0%	0%	100%	100%	100%
Total	6%	42%	3%	55%	36%	6%	39%	22%	67%	0%	0%	24%	100%	100%	100%
Total Cities	2%	2%	2%	43%	27%	10%	52%	53%	48%	4%	19%	40%	100%	100%	100%
Total UGAs	6%	11%	17%	60%	62%	44%	34%	20%	29%	0%	7%	10%	100%	100%	100%
Total Urban Areas	4%	7%	6%	52%	46%	19%	42%	34%	43%	2%	12%	32%	100%	100%	100%
Rural Unincorp. County	25%	78%	79%	38%	20%	21%	36%	3%	0%	1%	0%	0%	100%	100%	100%
Thurston County Total	12%	17%	15%	47%	43%	20%	39%	30%	37%	1%	11%	28%	100%	100%	100%

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: UGA is unincorporated Urban Growth Area.

Note: Grand Mound UGA data is included in "Rural Unincorporated County." Due to data limitations, it is not currently possible to break out the Grand Mound UGA as a

Table III-21
Number of Single-Family Residential Lots Created in Subdivisions, by Lot Size
Cities and UGAs, 1970-1999

Year	Cities					UGAs				
	> half acre	half to qtr. acre	qtr. to 0.15 acres	< 0.15 acres	Total	> half acre	half to qtr. acre	qtr. to 0.15 acres	< 0.15 acres	Total
1970	4	34	52	0	90	11	88	34	0	133
1971	12	204	238	6	460	23	254	259	4	540
1972	2	23	39	6	70	12	144	205	0	361
1973	3	128	97	1	229	1	111	2	0	114
1974	0	18	24	1	43	2	143	25	0	170
1975	4	30	46	0	80	11	69	212	1	293
1976	7	56	112	0	175	1	131	108	0	240
1977	1	89	118	16	224	35	227	58	1	321
1978	6	254	239	61	560	56	490	88	0	634
1979	17	305	408	3	733	45	329	116	0	490
1970s	56	1,141	1,373	94	2,664	197	1,986	1,107	6	3,296
1980	7	85	103	0	195	121	364	16	0	501
1981	3	28	16	23	70	1	162	86	0	249
1982	0	11	32	139	182	5	57	6	0	68
1983	4	5	3	11	23	17	68	2	0	87
1984	2	66	150	38	256	2	62	87	36	187
1985	1	36	120	30	187	13	311	115	146	585
1986	0	48	80	97	225	17	74	17	0	108
1987	18	151	242	50	461	38	369	117	8	532
1988	6	48	53	2	109	14	9	8	0	31
1989	1	80	300	3	384	54	166	83	0	303
1980s	42	558	1,099	393	2,092	282	1,642	537	190	2,651
1990	3	111	249	156	519	36	130	68	0	234
1991	32	127	284	52	495	60	173	33	0	266
1992	5	57	381	116	559	48	153	67	0	268
1993	8	87	550	313	958	47	118	37	0	202
1994	10	74	634	468	1,186	49	38	110	5	202
1995	22	44	133	293	492	14	91	0	0	105
1996	2	9	138	129	278	1	20	102	1	124
1997	2	25	192	322	541	47	141	35	19	242
1998	1	32	153	192	378	70	69	154	58	351
1999	4	35	100	337	476	8	45	46	130	229
1990s	89	601	2,814	2,378	5,882	380	978	652	213	2,223
Total	187	2,300	5,286	2,865	10,638	859	4,606	2,296	409	8,170

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: UGA is unincorporated Urban Growth Area.

Table III-22
Percentage of Single-Family Residential Lots Created in Subdivisions, by Lot Size
Cities and UGAs, 1970-1999

Year	Cities					UGAs				
	> half acre	half to qtr. acre	qtr. to 0.15 acres	< 0.15 acres	Total	> half acre	half to qtr. acre	qtr. to 0.15 acres	< 0.15 acres	Total
1970	4%	38%	58%	0%	100%	8%	66%	26%	0%	100%
1971	3%	44%	52%	1%	100%	4%	47%	48%	1%	100%
1972	3%	33%	56%	9%	100%	3%	40%	57%	0%	100%
1973	1%	56%	42%	0%	100%	1%	97%	2%	0%	100%
1974	0%	42%	56%	2%	100%	1%	84%	15%	0%	100%
1975	5%	38%	58%	0%	100%	4%	24%	72%	0%	100%
1976	4%	32%	64%	0%	100%	0%	55%	45%	0%	100%
1977	0%	40%	53%	7%	100%	11%	71%	18%	0%	100%
1978	1%	45%	43%	11%	100%	9%	77%	14%	0%	100%
1979	2%	42%	56%	0%	100%	9%	67%	24%	0%	100%
1970s	2%	43%	52%	4%	100%	6%	60%	34%	0%	100%
1980	4%	44%	53%	0%	100%	24%	73%	3%	0%	100%
1981	4%	40%	23%	33%	100%	0%	65%	35%	0%	100%
1982	0%	6%	18%	76%	100%	7%	84%	9%	0%	100%
1983	17%	22%	13%	48%	100%	20%	78%	2%	0%	100%
1984	1%	26%	59%	15%	100%	1%	33%	47%	19%	100%
1985	1%	19%	64%	16%	100%	2%	53%	20%	25%	100%
1986	0%	21%	36%	43%	100%	16%	69%	16%	0%	100%
1987	4%	33%	52%	11%	100%	7%	69%	22%	2%	100%
1988	6%	44%	49%	2%	100%	45%	29%	26%	0%	100%
1989	0%	21%	78%	1%	100%	18%	55%	27%	0%	100%
1980s	2%	27%	53%	19%	100%	11%	62%	20%	7%	100%
1990	1%	21%	48%	30%	100%	15%	56%	29%	0%	100%
1991	6%	26%	57%	11%	100%	23%	65%	12%	0%	100%
1992	1%	10%	68%	21%	100%	18%	57%	25%	0%	100%
1993	1%	9%	57%	33%	100%	23%	58%	18%	0%	100%
1994	1%	6%	53%	39%	100%	24%	19%	54%	2%	100%
1995	4%	9%	27%	60%	100%	13%	87%	0%	0%	100%
1996	1%	3%	50%	46%	100%	1%	16%	82%	1%	100%
1997	0%	5%	35%	60%	100%	19%	58%	14%	8%	100%
1998	0%	8%	40%	51%	100%	20%	20%	44%	17%	100%
1999	1%	7%	21%	71%	100%	3%	20%	20%	57%	100%
1990s	2%	10%	48%	40%	100%	17%	44%	29%	10%	100%
Total	2%	22%	50%	27%	100%	11%	56%	28%	5%	100%

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: UGA is unincorporated Urban Growth Area.

**Table III-23
Acreage in Residential Subdivisions of Lots, Open Space, and Right-of-Ways
Thurston County, 1970-1999**

Jurisdiction	1970-1979					1980-1989				
	Residential Lots	Acres in Open Space	Acres in Right-of-Way	Acres in Platted	Total Acres	Residential Lots	Acres in Open Space	Acres in Right-of-Way	Acres in Platted	Total Acres
Bucoda	0	0	0	0	0	0	0	0	0	0
City	306	27	90	423	423	143	35	37	215	215
UGA	737	80	196	1,012	1,012	649	109	146	904	904
Total	1,042	106	287	1,435	1,435	792	144	183	1,119	1,119
Olympia	306	37	80	424	424	190	32	42	264	264
City	306	37	80	424	424	190	32	42	264	264
UGA	264	62	67	394	394	111	35	21	168	168
Total	570	99	147	817	817	301	68	63	432	432
Rainier	7	0	4	11	11	4	0	2	6	6
City	7	0	4	11	11	4	0	2	6	6
UGA	0	0	0	0	0	0	0	0	0	0
Total	7	0	4	11	11	4	0	2	6	6
Tenino	4	1	0	5	5	0	0	0	0	0
City	4	1	0	5	5	0	0	0	0	0
UGA	0	0	0	0	0	0	0	0	0	0
Total	4	1	0	5	5	0	0	0	0	0
Tumwater	68	12	15	95	95	146	48	44	239	239
City	68	12	15	95	95	146	48	44	239	239
UGA	98	17	22	137	137	101	32	17	150	150
Total	166	29	38	233	233	248	80	61	389	389
Yelm	30	0	8	38	38	11	0	1	12	12
City	30	0	8	38	38	11	0	1	12	12
UGA	14	0	1	15	15	74	1	2	77	77
Total	44	0	9	52	52	85	1	3	89	89
Total Cities	720	77	198	996	996	494	116	126	736	736
Total UGAs	1,113	159	287	1,558	1,558	936	177	186	1,299	1,299
Total Urban Areas	1,833	236	485	2,554	2,554	1,430	293	312	2,035	2,035
Rural Unincorporated County	1,695	394	281	2,370	2,370	907	83	85	1,074	1,074
Thurston County Total	3,527	631	766	4,924	4,924	2,336	375	397	3,109	3,109

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office
 Explanation: UGA is unincorporated Urban Growth Area. This table does not include residential lots created in mobile home parks.
 Note: Grand Mound UGA data is included in "Rural Unincorporated County." Due to data limitations, it is not currently possible to break out the Grand Mound UGA as a separate category for this data.

Table III-23, continued
Acres in Residential Subdivisions of Lots, Open Space, and Right-of-Ways
Thurston County, 1970-1999

Jurisdiction	1990-1999						Total, 1970-1999					
	Acres in Residential Lots	Acres in Open Space	Acres in Right-of-Way	Total Acres Platted	Acres in Residential Lots	Acres in Open Space	Acres in Right-of-Way	Total Acres Platted	Acres in Residential Lots	Acres in Open Space	Acres in Right-of-Way	Total Acres Platted
Bucoda	15	0	1	16					15	0	1	16
Lacey	508	157	164	829	956	218	292	1,466	337	63	79	479
UGA	845	220	243	1,308	2,679	470	713	3,861				
Olympia	271	64	77	412	767	133	199	1,100	205	99	61	366
UGA	477	163	138	778	1,348	330	349	2,027				
Rainier	87	5	14	106	98	5	20	123	8	1	9	9
UGA	94	5	16	115	106	5	21	132				
Tenino	30	8	4	42	34	9	4	47	30	8	4	42
UGA	30	8	4	42	34	9	4	47				
Tumwater	80	31	20	131	294	92	79	465	261	120	40	422
UGA	341	152	60	553	754	261	159	1,174				
Yelm	88	15	27	130	129	15	36	179	7	1	3	99
UGA	95	16	27	137	223	17	38	279				
Total Cities	1,080	279	307	1,666	2,294	472	631	3,397				
Total UGAs	818	283	181	1,283	2,866	619	654	4,140				
Total Urban Areas	1,898	562	488	2,948	5,160	1,092	1,285	7,537				
Rural Unincorporated County	1,560	366	98	2,023	4,161	843	463	5,467				
Thurston County Total	3,457	928	586	4,972	9,321	1,935	1,749	13,004				

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: UGA is unincorporated Urban Growth Area. This table does not include residential lots created in mobile home parks.

Note: Grand Mound UGA data is included in "Rural Unincorporated County." Due to data limitations, it is not currently possible to break out the Grand Mound UGA as a separate category for this data.

**Table III-24
Acreage of Residential Subdivisions of Lots, Open Space and Right-of-Way, by Percentage
Thurston County, 1970-1999**

Jurisdiction	1970-1979				1980-1989			
	% of Acres in Residential Lots		% of Acres in Open Space		% of Acres in Residential Lots		% of Acres in Open Space	
	% of Acres in Residential Lots	% of Acres in Open Space	% of Acres in Right-of-Way	% of Acres Platted	% of Acres in Residential Lots	% of Acres in Open Space	% of Acres in Right-of-Way	% of Acres Platted
Bucoda	0%	0%	0%	0%	0%	0%	0%	0%
Lacey	72%	6%	21%	100%	66%	16%	17%	100%
UGA	73%	8%	19%	100%	72%	12%	16%	100%
Total	73%	7%	20%	100%	71%	13%	16%	100%
Olympia	72%	9%	19%	100%	72%	12%	16%	100%
UGA	67%	16%	17%	100%	66%	21%	13%	100%
Total	70%	12%	18%	100%	70%	16%	15%	100%
Rainier	65%	0%	35%	100%	70%	0%	30%	100%
UGA	0%	0%	0%	0%	0%	0%	0%	0%
Total	65%	0%	35%	100%	70%	0%	30%	100%
Tenino	69%	21%	10%	100%	0%	0%	0%	0%
UGA	0%	0%	0%	0%	0%	0%	0%	0%
Total	69%	21%	10%	100%	0%	0%	0%	0%
Tumwater	71%	13%	16%	100%	61%	20%	18%	100%
UGA	71%	12%	16%	100%	67%	21%	11%	100%
Total	71%	13%	16%	100%	64%	21%	16%	100%
Yelm	79%	0%	21%	100%	90%	0%	10%	100%
UGA	93%	0%	7%	100%	96%	2%	2%	100%
Total	83%	0%	17%	100%	95%	1%	3%	100%
Total Cities	72%	8%	20%	100%	67%	16%	17%	100%
Total UGAs	71%	10%	18%	100%	72%	14%	14%	100%
Total Urban Areas	72%	9%	19%	100%	70%	14%	15%	100%
Rural Unincorporated County	72%	17%	12%	100%	84%	8%	8%	100%
Thurston County Total	72%	13%	16%	100%	75%	12%	13%	100%

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: UGA is unincorporated Urban Growth Area. This table does not include residential lots created in mobile home parks

Note: Grand Mound UGA data is included in "Rural Unincorporated County." Due to data limitations, it is not currently possible to break out the Grand

Table III-24, continued
Acreege of Residential Subdivisions of Lots, Open Space and Right-of-Way, by Percentage
Thurston County, 1970-1999

Jurisdiction	1990-1999				Total, 1970-1999			
	% of Acres in Residential Lots	% of Acres in Open Space	% of Acres in Right-of-Way	% of Total Acres Platted	% of Acres in Residential Lots	% of Acres in Open Space	% of Acres in Right-of-Way	% of Total Acres Platted
Bucoda	94%	0%	6%	100%	94%	0%	6%	100%
Lacey	61%	19%	20%	100%	65%	15%	20%	100%
UGA	70%	13%	16%	100%	72%	10%	18%	100%
Total	65%	17%	19%	100%	69%	12%	18%	100%
Olympia	66%	15%	19%	100%	70%	12%	18%	100%
UGA	56%	27%	17%	100%	63%	21%	16%	100%
Total	61%	21%	18%	100%	67%	16%	17%	100%
Rainier	82%	5%	13%	100%	80%	4%	16%	100%
UGA	84%	0%	16%	100%	84%	0%	16%	100%
Total	82%	4%	14%	100%	80%	4%	16%	100%
Tenino	72%	18%	9%	100%	72%	19%	9%	100%
UGA	0%	0%	0%	100%	0%	0%	0%	100%
Total	72%	18%	9%	100%	72%	19%	9%	100%
Tumwater	61%	24%	15%	100%	63%	20%	17%	100%
UGA	62%	29%	9%	100%	65%	24%	11%	100%
Total	62%	27%	11%	100%	64%	22%	14%	100%
Yelm	68%	11%	20%	100%	72%	8%	20%	100%
UGA	91%	9%	0%	100%	95%	2%	3%	100%
Total	69%	11%	19%	100%	80%	6%	14%	100%
Total Cities	65%	17%	18%	100%	68%	14%	19%	100%
Total UGAs	64%	22%	14%	100%	69%	15%	16%	100%
Total Urban Areas	64%	19%	17%	100%	68%	14%	17%	100%
Rural Unincorporated County	77%	18%	5%	100%	76%	15%	8%	100%
Thurston County Total	70%	19%	12%	100%	72%	15%	13%	100%

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: UGA is unincorporated Urban Growth Area. This table does not include residential lots created in mobile home parks.

Note: Grand Mound UGA data is included in "Rural Unincorporated County." Due to data limitations, it is not currently possible to break out the Grand

**Table III-25
Average Number of Approved Dwelling Units per Total Acres Platted in
Residential Subdivisions Thurston County, 1970-1999**

Jurisdiction	1970-1979			1980-1989			1990-1999		
	Approved Dwelling Units	Total Acres Platted	Approved DU/Total Acres Platted	Approved Dwelling Units	Total Acres Platted	Approved DU/Total Acres Platted	Approved Dwelling Units	Total Acres Platted	Approved DU/Total Acres Platted
Bucoda	0	0	0.00	0	0	0.00	20	16	1.22
Lacey	1,422	423	3.36	843	215	3.93	3,275	829	3.95
UGA	2,807	1,012	2.77	2,040	904	2.26	966	479	2.02
Total	4,229	1,435	2.95	2,883	1,119	2.58	4,241	1,308	3.24
Olympia	1,203	424	2.84	855	264	3.23	1,541	412	3.74
UGA	966	394	2.45	348	168	2.07	789	366	2.16
Total	2,169	817	2.65	1,203	432	2.78	2,330	778	3.00
Rainier	26	11	2.30	10	6	1.65	153	106	1.45
UGA	0	0	0.00	0	0	0.00	19	9	2.03
Total	26	11	2.30	10	6	1.65	172	115	1.49
Tenino	19	5	3.66	0	0	0.00	134	42	3.20
UGA	0	0	0.00	0	0	0.00	0	0	0.00
Total	19	5	3.66	0	0	0.00	134	42	3.20
Tumwater	281	95	2.95	584	239	2.45	417	131	3.19
UGA	319	137	2.32	210	150	1.40	539	422	1.28
Total	600	233	2.58	794	389	2.04	956	553	1.73
Yelm	107	38	2.84	29	12	2.44	513	130	3.95
UGA	36	15	2.44	91	77	1.18	7	7	0.94
Total	143	52	2.73	120	89	1.35	520	137	3.79
Total Cities	3,058	996	3.07	2,321	736	3.16	6,053	1,666	3.63
Total UGAs	4,128	1,558	2.65	2,689	1,299	2.07	2,320	1,283	1.81
Total Urban Areas	7,186	2,554	2.81	5,010	2,035	2.46	8,373	2,948	2.84
Rural Unincorporated County	3,565	2,370	1.50	826	1,074	0.77	1,256	2,023	0.62
Thurston County Total	10,751	4,924	2.18	5,836	3,109	1.88	9,629	4,972	1.94

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: UGA is unincorporated Urban Growth Area. This table does not include residential lots created in mobile home parks; represents scenario if subdivision were completely built out.

Note: Grand Mound UGA data is included in "Rural Unincorporated County." Due to data limitations, it is not currently possible to break out the Grand Mound UGA as a separate category for this data.

**Table III-26
Average Number of Approved Dwelling Units per Residential Acre in Residential Subdivisions
Thurston County, 1970-1999**

Jurisdiction	1970-1979			1980-1989			1990-1999		
	Approved Dwelling Units	Res. Lots	Approved DU/Res. Acre	Approved Dwelling Units	Res. Lots	Approved DU/Res. Acre	Approved Dwelling Units	Res. Lots	Approved DU/Res. Acre
Bucoda	0	0	0.00	0	0	0.00	20	15	1.30
Lacey	1,419	306	4.64	841	143	5.90	3,274	508	6.45
UGA	2,807	737	3.81	2,040	649	3.14	966	337	2.87
Total	4,226	1,042	4.05	2,881	792	3.64	4,240	845	5.02
Olympia	1,203	306	3.93	855	190	4.50	1,541	271	5.68
UGA	966	264	3.65	348	111	3.13	789	205	3.85
Total	2,169	570	3.80	1,203	301	3.99	2,330	477	4.89
Rainier	26	7	3.52	10	4	2.37	153	87	1.77
UGA	0	0	0.00	0	0	0.00	19	8	2.41
Total	26	7	3.52	10	4	2.37	172	94	1.82
Tenino	19	4	5.31	0	0	0.00	134	30	4.44
UGA	0	0	0.00	0	0	0.00	0	0	0.00
Total	19	4	5.31	0	0	0.00	134	30	4.44
Tumwater	281	68	4.15	584	146	3.99	417	80	5.22
UGA	319	98	3.26	210	101	2.08	539	261	2.06
Total	600	166	3.62	794	248	3.21	956	341	2.80
Yelm	107	30	3.60	29	11	2.70	513	88	5.81
UGA	36	14	2.61	91	74	1.23	7	7	1.03
Total	143	44	3.28	120	85	1.42	520	95	5.47
Total Cities	3,055	720	4.24	2,319	494	4.69	6,052	1,080	5.61
Total UGAs	4,128	1,113	3.71	2,689	936	2.87	2,320	818	2.84
Total Urban Areas	7,183	1,833	3.92	5,008	1,430	3.50	8,372	1,898	4.41
Rural Unincorporated County	3,563	1,695	2.10	826	907	0.91	1,256	1,560	0.81
Thurston County Total	10,746	3,527	3.05	5,834	2,336	2.50	9,628	3,457	2.78

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: UGA is unincorporated Urban Growth Area. This table does not include residential lots created in mobile home parks; represents scenario if subdivision were completely built out.

Note: Grand Mound UGA data is included in "Rural Unincorporated County." Due to data limitations, it is not currently possible to break out the Grand Mound UGA as a separate category for this data.

Table III-27
Average Number of Approved Dwelling Units per Total Acre
Thurston County, 1990-1999

Year	Cities			UGAs			Rural County		
	Approved Dwelling Units	Total Acres Platted	Approved DU/ Total Acres Platted	Approved Dwelling Units	Total Acres Platted	Approved DU/ Total Acres Platted	Approved Dwelling Units	Total Acres Platted	Approved DU/ Total Acres Platted
1990	672	173	3.88	234	124	1.89	105	141	0.75
1991	495	187	2.65	266	174	1.53	44	57	0.77
1992	641	194	3.31	287	166	1.73	181	246	0.74
1993	962	292	3.30	202	210	0.96	49	77	0.64
1994	1,316	325	4.05	202	123	1.65	59	82	0.72
1995	549	146	3.76	225	64	3.49	187	238	0.78
1996	320	84	3.83	124	38	3.23	123	270	0.46
1997	577	134	4.30	426	163	2.61	145	193	0.75
1998	412	118	3.50	392	148	2.64	108	179	0.60
1999	478	114	4.20	330	105	3.15	255	540	0.47
Total	6,422	1,766	3.64	2,688	1,315	2.04	1,256	2,023	0.62

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: UGA is unincorporated Urban Growth Area. Represents scenario if subdivisions were built out to full potential.

Table III-28
Average Number of Approved Dwelling Units per Residential Acre in Residential Lots, Thurston County, 1990-1999

Year	Cities			UGAs			Rural County		
	Approved Dwelling Units	Acres in Res. Lots	Approved DU/ Res. Acres	Approved Dwelling Units	Acres in Res. Lots	Approved DU/ Res. Acres	Approved Dwelling Units	Acres in Res. Lots	Approved DU/ Res. Acres
1990	672	116	5.79	234	99	2.35	105	121	0.87
1991	495	135	3.67	266	117	2.27	44	49	0.90
1992	641	112	5.70	287	122	2.36	181	224	0.81
1993	962	171	5.62	202	82	2.47	49	66	0.74
1994	1,315	218	6.02	202	71	2.83	59	56	1.05
1995	549	101	5.44	225	47	4.77	187	194	0.96
1996	320	52	6.19	124	26	4.69	123	149	0.83
1997	577	87	6.60	426	99	4.32	145	145	1.00
1998	412	70	5.87	392	109	3.59	108	119	0.90
1999	478	114	4.20	330	105	3.15	255	540	0.47
Total	6,421	1,177	5.46	2,688	878	3.06	1,256	1,664	0.75

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: UGA is unincorporated Urban Growth Area. Represents scenario if subdivisions were built out to full potential.

**Table III-29
Changes in Land Use Between 2000 and 2002 (2 year interval) in acres, Thurston County**

Jurisdiction	Land in New Development Status			Net Losses and Gains in Land Status		
	New Open Space	New Rights of Way	New Vacant Land	Gain in Vacant Land from Subdivision of Partially Developed Land	Loss/Gain in Farmlands	Loss/Gain in Forest Lands
Bucoda	0	0	0	0	0	0
Lacey	3	8	41	4	0	-37
UGA	27	26	90	53	-57	0
Total	30	34	131	57	-57	-37
Olympia	2	8	5	10	0	0
UGA	38	1	3	1	0	0
Total	41	10	8	11	0	0
Rainier	0	1	6	6	0	0
UGA	0	0	0	0	0	0
Total	0	1	6	6	0	0
Tenino	0	0	1	1	0	0
UGA	0	0	257	0	0	-257
Total	0	0	258	1	0	-257
Tumwater	4	5	20	23	0	0
UGA	0	2	3	14	0	0
Total	4	7	23	37	0	0
Yelm	2	22	6	7	0	0
UGA	0	0	10	0	-10	0
Total	2	22	16	7	-10	0
Grand Mound UGA	0	0	0	0	0	0
Total Cities	11	45	80	52	0	-37
Total UGAs	66	30	363	69	-67	-257
Total Urban Areas	77	74	444	121	-67	-294
Rural Unincorporated County¹	122	88	1,393	390	-535	-978
Thurston County Total	199	163	1,837	511	-602	-1,272

Source: Buildable Lands Work Program, TRPC

Note: Gains in Vacant Lands result from conversions of farmlands and forest lands, as well as the subdivision of partially developed lots into vacant and developed parcels. Residential, commercial, and industrial development activity is shown in the following tables.

**Table III-30
Trends in Residential Development, 2000-2002 (2 year interval) in acres, Thurston County**

Jurisdiction	Change in Land Use				Other Activity											
	Residential Land Developed 00-02 (acres)	Dwellings Permitted on New Devel. Land	Net Density (DU/acre)	Additional Units (DU)	# Parcels	Net SF Activity (DU)	Net MF Activity (DU)	Net MH Activity (DU)	Demolitions (DU)	Other Dwellings	Swaps (One Unit Replaced by Another)	Net SF Activity (DU)	Net MF Activity (DU)	Net MH Activity (DU)	Demolitions (DU)	Other Dwellings
Total	3	5	1.77	0	0	0	0	0	0	0	0	0	0	0	0	0
Lacey	33	236	7.22	5	4	1	0	-1	-4	3						
UGA	105	465	4.44	38	13	3	0	-3	-1	1						
Total	137	701	5.10	43	17	4	0	-4	-5	4						
Olympia	39	200	5.16	2	4	0	0	0	-10	0						
UGA	55	278	5.05	1	6	4	0	-4	-2	0						
Total	94	478	5.10	3	10	4	0	-4	-12	0						
Rainier	3	9	2.65	0	3	3	0	-3	0	0						
UGA	5	1	0.20	0	1	1	0	-1	0	0						
Total	8	10	1.19	0	4	4	0	-4	0	0						
Tenino	3	11	4.16	3	0	0	0	0	0	0						
UGA	0	0	0.00	0	1	1	0	-1	0	0						
Total	3	11	4.16	3	1	1	0	-1	0	0						
Turnwater	33	78	2.35	7	3	-1	2	0	-6	0						
UGA	47	59	1.25	7	11	1	0	-1	-3	0						
Total	81	137	1.70	14	14	0	2	-1	-9	0						
Yelm	30	168	5.58	1	1	0	0	0	-1	0						
UGA	20	8	0.41	4	4	0	0	0	-1	0						
Total	50	176	3.54	5	5	0	0	0	-2	0						
Grand Mound UGA	5	4	0.84	3	0	0	0	0	0	0						
Total	5	4	0.84	3	0	0	0	0	0	0						
Total Cities	144	707	4.92	18	15	3	2	-4	-21	3						
Total UGAs	236	815	3.45	53	36	10	0	-10	-7	1						
Total Urban Areas	380	1,522	4.01	71	51	13	2	-14	-28	4						
Rural Unincorporated County¹	2,886	1,052	0.36	63	295	65	0	-65	-26	15						
Thurston County Total	3,266	2,574	0.79	134	346	78	2	-79	-54	19						

Source: Buildable Lands Work Program, TRPC
Note: DU is Dwelling Units. SF is single-family. MF is multifamily. MH is manufactured homes. Additional Units include accessory dwellings, family member units, and additional homes placed in manufactured home parks with no associated demolition to indicate a swap. Swaps are identified by a demolition permit, closely followed by a permit for a new home. Many swaps involve the replacement of one manufactured home for another. Another common swap in dwellings is the replacement of a manufactured home with a single family home. Other includes dwellings permitted on non-residential land, including farm homes.

**Table III-31
Trends in Commercial Building Activity, 2000-2002 (2 year interval) in acres, Thurston County**

Jurisdiction	Trends on Parcels Vacant in 2000					Trends on Parcels Developed in 2000				
	Land Developed 00-02 (Acres)	Building Square Feet Added (1,000)	FAR (1,000 Ft./Acre)	Land Further Developed (Acres)	Number of Parcels Developed	Existing Sq. Ft. in 2000 (1,000)	Additional Sq. Ft. in 2000-2001 (1,000)	Total Sq. Ft. in 2002 (1,000)	2000 FAR (1,000 Sq. Ft./Acre)	2002 FAR (1,000 Sq. Ft./Acre)
Total	0	0	0.0	0	0	0	0	0	0.0	0.0
Lacey	22	369	16.5	15	6	92	11	103	5.9	6.7
UGA	0	0	0.0	21	2	28	8	36	1.4	1.7
Total	22	369	16.5	36	8	120	19	139	3.3	3.8
Olympia	18	263	14.6	63	13	1,632	70	1,702	25.9	27.1
UGA	1	5	6.2	0	0	0	0	0	0.0	0.0
Total	19	268	14.2	63	13	1,632	70	1,702	25.9	27.1
Rainier	0	0	0.0	0	1	1	2	3	0.0	0.0
UGA	0	0	0.0	0	0	0	0	0	0.0	0.0
Total	0	0	0.0	0	1	1	2	3	0.0	0.0
Tenino	0	0	0.0	0	0	0	0	0	0.0	0.0
UGA	0	0	0.0	0	0	0	0	0	0.0	0.0
Total	0	0	0.0	0	0	0	0	0	0.0	0.0
Tumwater	35	442	12.7	43	5	212	39	251	4.9	5.8
UGA	0	0	0.0	21	4	48	92	140	2.3	6.7
Total	35	442	12.7	64	9	261	131	392	4.1	6.1
Yelm	9	37	4.0	24	6	76	44	120	3.2	5.0
UGA	0	0	0.0	0	0	0	0	0	0.0	0.0
Total	9	37	4.0	24	6	76	44	120	3.2	5.0
Grand Mound UGA	0	0	0.0	0	0	0	0	0	0.0	0.0
Total	0	0	0.0	0	0	0	0	0	0.0	0.0
Total Cities	85	1,110	13.1	145	31	2,012	166	2,179	13.8	15.0
Total UGAs	1	5	6.2	42	6	77	100	177	1.8	4.2
Total Urban Areas	85	1,115	13.1	187	37	2,089	267	2,355	11.2	12.6
Rural Unincorporated County¹	4	22	5.0	12	4	24	14	39	2.1	3.3
Thurston County Total	90	1,136	12.7	199	41	2,113	281	2,394	10.6	12.0

Source: Buildable Lands Work Program, TRPC

Note: FAR is Floor to Area Ratio. This table only includes data on new buildings considered suitable for accommodating growth in employment. This table does not include activity on those parcels where it is inappropriate to measure floor to area ratio (FAR). These include churches, schools, jails, libraries, and colleges

**Table III-32
Trends in Industrial Building Activity, 2000-2002 (2 year interval) in acres, Thurston County**

Jurisdiction	Trends on Parcels Vacant in 2000				Trends on Parcels Developed in 2000						
	Land Developed 00-02 (Acres)	Building Square Feet Added (1,000)	FAR (1,000 Ft./Acre)		Land Further Developed (Acres)	Number of Developed Parcels	Existing Sq. Ft. in 2000 (1,000)	Additional Sq. Ft. 2000-2001 (1,000)	Total Sq. Ft. in 2002 (1,000)	2000 FAR (1,000 Sq. Ft./Acre)	2002 FAR (1,000 Sq. Ft./Acre)
Total	0	1	0.0		0	0	0	0	0	0	0.0
Lacey	4	22	6.0		5	4	31	31	62	6.0	11.9
UGA	0	0	0.0		0	0	0	0	0	0.0	0.0
Total	4	22	6.0		5	4	31	31	62	6.0	11.9
Olympia	0	0	0.0		0	0	0	0	0	0.0	0.0
UGA	0	0	0.0		0	0	0	0	0	0.0	0.0
Total	0	0	0.0		0	0	0	0	0	0.0	0.0
Rainier	0	0	0.0		0	0	0	0	0	0.0	0.0
UGA	0	0	0.0		0	0	0	0	0	0.0	0.0
Total	0	0	0.0		0	0	0	0	0	0.0	0.0
Tenino	0	0	0.0		0	0	0	0	0	0.0	0.0
UGA	0	0	0.0		0	0	0	0	0	0.0	0.0
Total	0	0	0.0		0	0	0	0	0	0.0	0.0
Tumwater	2	47	25.8		48	4	537	81	618	11.2	12.8
UGA	6	103	0.0		3	1	25	103	128	7.2	36.6
Total	7	150	20.5		52	5	562	184	745	10.9	14.4
Yelm	9	37	4.0		24	0	76	44	120	3.2	5.0
UGA	0	0	0.0		0	0	0	0	0	0.0	0.0
Total	9	37	4.0		24	0	76	44	120	3.2	5.0
Grand Mound UGA	0	0	0.0		0	0	0	0	0	0.0	0.0
Total	0	0	0.0		0	0	0	0	0	0.0	0.0
Total Cities	15	107	7.1		77	8	643	156	800	8.3	10.4
Total UGAs	6	103	18.7		3	1	25	103	128	7.2	36.6
Total Urban Areas	21	209	10.2		81	9	668	259	927	8.3	11.5
Rural Unincorporated County¹	2	3	1.6		0	0	0	0	0	0.0	0.0
Thurston County Total	23	213	9.4		81	9	668	259	927	8.3	11.5

Source: Buildable Lands Work Program, TRPC

Note: FAR is Floor to Area Ratio. This table only includes data on new buildings considered suitable for accommodating growth in employment. This table does not include activity on those parcels where it is inappropriate to measure floor to area ratio (FAR). These include churches, schools, jails, libraries, and colleges.

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Transportation

Related GMA Goals:

GMA Goal (3) Transportation. Encourage efficient multimodal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans.

Indicators Used:

- Drive-Alone Commute Trip
- Transit Ridership per Capita
- Vehicle Miles Traveled (VMT) per Capita

Related County-Wide Planning Policies:

Encourage efficient multimodal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans.

Transportation

Overview

The Regional Transportation Plan (RTP) serves as a strategic blueprint for the region's transportation system. With adoption of the 2010 plan in 1993, the Thurston region embarked on a course of comprehensive, coordinated, and continuing planning that is shaping development of the 2025 long-range plan scheduled for adoption in 2003.

One of the principal philosophies underlying the RTP is to promote alternative modes of travel, reducing the need to drive alone and improving travel choice and mobility for people and goods. This is key to preserving limited system capacity and encouraging safe, efficient and cost-effective system operations over the long term. The RTP also encourages more compact, higher density development in the urban areas, and calls for preserving outlying areas for rural uses. This matches underlying values in the land use elements of local comprehensive plans and land use policies. The three transportation benchmarks in this chapter underscore the relationship between transportation and land use, and help to monitor the effectiveness of regional policies and investments.

Benchmark 7 measures whether there has been a reduction in drive-alone commute trips at major work sites, those affected by the state Commute Trip Reduction Program (CTR). The program encourages alternative modes for traveling to and from work, or alternative schedules that help relieve peak congestion. Currently, any employer who employs more than 100 people who are scheduled to start work between 6 and 9 a.m. must participate in the program. There were 67 CTR affected worksites throughout Thurston County in 2001. Some smaller employers value the trip reduction concept and choose to become "voluntary worksites."

Benchmark 8 looks at public transit ridership on a per capita basis. This is another gage of how well the region's multi-modal transportation policies are working, which in turn are influenced by the effectiveness of land use implementation measures. In viewing the data for this benchmark it is especially important to bear in mind the context of several years of a significant reduction in the area served by Intercity Transit (I.T.), the local public transportation provider.

Benchmark 9 monitors vehicle miles of travel, or VMT, per capita, which measures whether the number of miles people have to travel by car in order to meet their needs declines over time. Some of the factors influencing this dynamic is whether the region's urban areas become more city-like and its outlying areas more rural, as well as whether alternatives to driving become more viable for a greater number of people.

Transportation**List of Benchmarks found in this Chapter****Benchmark 7:**

The Share of Drive-Along Commute Trips at Large Work Sites Decreases Over Time

Benchmark 8:

The Number of Transit Trips Per Capita Increases or Remains Steady Over Time

Benchmark 9:

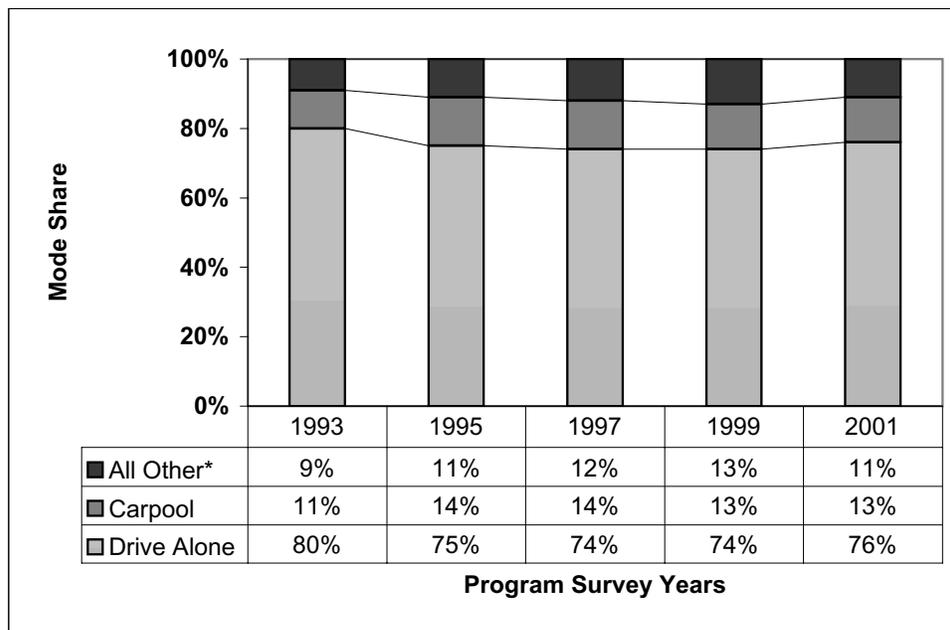
Vehicle Miles Traveled (VMT) Per Capita Decreases Over Time

Benchmark 7

The Share of Drive-Along Commute Trips at Large Work Sites Decreases Over Time



**Figure IV-1
Commute Travel Mode at CTR Employment Sites
Thurston County, 1993-2001**



Source: Table IV-1
 *"All Other" includes transit, compressed work week, walk, bike, vanpool, telework, and rail.

Assessment:

The share of drive-alone commute trips at large work sites has decreased somewhat since 1993. However, this reduction is significantly below the 35 percent reduction target set by the state.

Benchmark 7

The Share of Drive-Alone Commute Trips at Large Work Sites Decreases Over Time

Key Observations:

- Roughly three in four commuters at CTR affected work sites were driving alone to work in 2001, compared to four in five commuters in 1993. This equates to about a five percent reduction in the share of drive-alone commute trips. Statewide, there has been nine percent reduction during this same time period. Both are far from the 35 percent target established by the state.
- However, no ground has been lost and trip reduction efforts have produced tangible benefits for the region. Between 1993 and 2001, the number of drive-alone commute miles, traveled to CTR affected work sites, has been reduced by over 2.4 million miles every year. These reductions in miles traveled in drive-alone vehicles reduced the emissions of green house gas pollutants by 1,800 tons per year.
- The overwhelming majority of people who do not drive alone to work are carpooling to work. This accounts for as much of the commute trip as virtually all other modes and options combined. The third most common form of trip reduction is the compressed work week, whereby employees work an alternate schedule to the traditional “nine-to-five, Monday-through-Friday” routine. This typically results in four ten-hour days, or nine-hour days with an extra day off every other week.
- It’s worth noting that the 2001 CTR survey was conducted shortly after the Nisqually earthquake, which closed some major transportation facilities and disrupted transit service to several major work sites. Results of the 2003 CTR survey will provide an indication as to whether the slight up-turn in drive-alone commute trips in 2001 was perhaps due to those disruptions.

see Table IV-1

see Table IV-1

For Further Information:

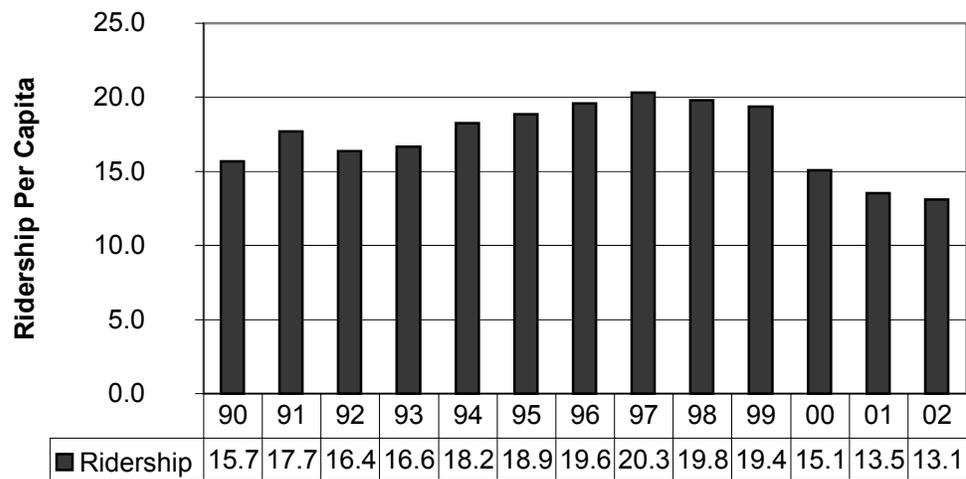
For more detailed information see Chapter VII in The Profile. This chapter provides more commute mode detail, as well as results specific to work sites in unincorporated Thurston County, Lacey, Olympia, Tumwater, and Yelm. For more information on statewide CTR results and comparisons between Thurston and other counties, see WSDOT’s CTR Task Force – 2001 Report to the State Legislature. Historical data and additional information is available at the Travel Demand Management page of WSDOT’s website, at: <http://www.wsdot.wa.gov/tdm/>.

Benchmark 8

**The Number Of
Transit Trips
Per Person
Increases Or
Remains Steady
Over Time**



**Figure IV-2
Intercity Transit, Annual Ridership per Capita, 1990-2002**



Source: Table IV-2

Assessment:

Transit trips per person have decreased in recent years. However, this was due to a major reduction in Intercity Transit's service area for several years due to revenue cuts. Beginning in 2003, a sales tax increase has allowed Intercity Transit to expand and restore service, which will likely increase transit trips per person in the near future.

Key Observations:

- Intercity Transit is experiencing shifting needs in its transit service. In 2000, Intercity Transit was forced to reduce its service area in response to a 45 percent reduction in revenue due to the repeal of the motor vehicle excise tax. This resulted in a marked downturn in ridership per capita in 2000 through 2002.
- However, in 2003, county residents supported a sales tax increase to sustain and expand Intercity Transit's service. After several years of service cuts, in 2003 Intercity Transit is expanding service by restoring routes, increasing frequency, and providing new service. The results of these recent changes will likely be reflected as upturns in ridership in 2003 and beyond.

For Further Information:

See Chapter VII in [The Profile](#).

Benchmark 8

**The Number Of
Transit Trips
Per Person
Increases Or
Remains Steady
Over Time**

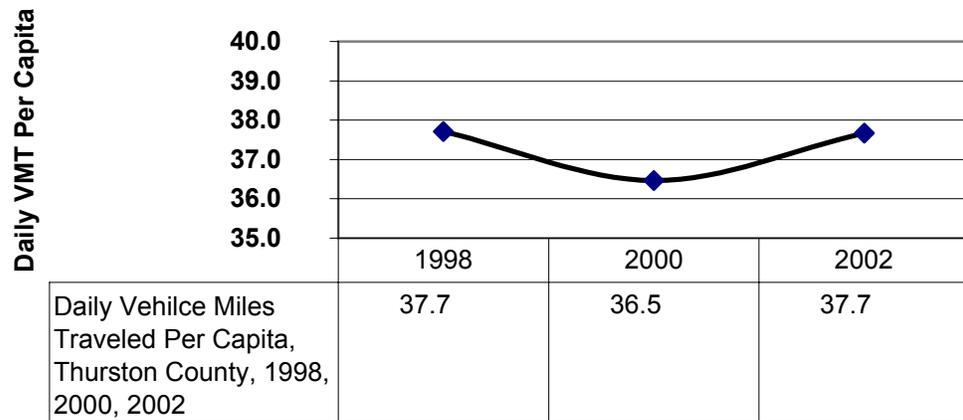
see Table IV-2

Benchmark 9

Vehicle Miles Traveled (VMT) Per Capita Decreases Over Time



**Figure IV-3
Daily Vehicle Miles of Travel Per Capita
Thurston County, 1998-2002**



Source: Table IV-3

Benchmark 9**Vehicle Miles Traveled (VMT) Per Capita Decreases Over Time****Assessment:**

There has not been a sustained decrease in VMT per capita in recent years. However, this benchmark has to be monitored over a longer time period before truly meaningful assessments can be drawn. Land use policy -- the most important factor influencing overall vehicle miles of travel -- takes some time to implement.

Key Observations:

- It is still a little premature to infer much from the trends for this benchmark because of the slow nature of land use development and redevelopment activities at the regional level. One or two more benchmark cycles will be necessary to begin assessing the effectiveness of adopted land use policies and implementation measures.
- Changes in overall VMT per capita are valuable in understanding whether land use policies are effective in helping to reduce travel need and increase the viability of alternatives to driving. As urban areas become more compact and diverse, biking, walking, and transit will account for an increased share of trips. And while most trips will still be made by driving, those trips should be shorter as urban areas become more city-like and unincorporated areas more rural-like.
- Over time, this should reverse a decades-long trend of increasing vehicle miles of travel per person. Region-wide figures are not available, but the State reports an almost 20 percent increase in the daily miles traveled per person between 1980 and 2000. While total statewide population grew by 43 percent during the period from 1980 to 2000, total vehicle miles traveled grew by 86 percent. Not only are there more people driving, but most are driving more. This puts a strain on the transportation system that cannot be addressed by road widening alone. That is why effective land use policies are so important in helping to reduce the growth in per capita travel.

For Further Information:

See Chapter VII in [The Profile](#) for more information on trends at the state level.

Table IV-1
Mode Share at State Mandated Commute Trip Reduction Work Sites
Thurston County, 1993 - 2001

	Commute Travel Mode						
	Drive Alone	Carpool	Transit	CWW ¹	Walk	Bike	Other*
1993	80%	11%	2%	3%	2%	1%	1%
1995	75%	14%	3%	4%	2%	1%	1%
1997	74%	14%	3%	4%	2%	1%	2%
1999	74%	13%	3%	4%	2%	1%	3%
2001	76%	13%	2%	4%	2%	1%	2%

Source: Washington State Department of Transportation Commute Trip Reduction Office

Explanations: Reported by work site location. The Washington State Commute Trip Reduction law stipulates that all employers with 100 or more employees arriving at a work site during the morning commute period must take measures to reduce the share of drive-alone trips and the number of vehicle miles traveled. Data is based on mandated employee surveys. CWW¹ refers to Compressed Work Week, whereby full-time employees compress their schedules into something less than the traditional 5-day work week.

*"Other" includes vanpool, telework, and rail.

Table IV-2
Intercity Transit Ridership, 1990-2002

Year	Annual Ridership	Population	Ridership per Capita
90	2,526,451	161,238	15.7
91	2,968,744	167,663	17.7
92	2,823,989	172,425	16.4
93	2,947,172	177,058	16.6
94	3,314,271	181,715	18.2
95	3,517,437	186,419	18.9
96	3,727,505	190,409	19.6
97	3,946,748	194,440	20.3
98	3,930,627	198,435	19.8
99	3,939,654	203,167	19.4
00	3,122,762	207,355	15.1
01	2,868,870	212,200	13.5
02	2,785,175	212,300	13.1

Sources: Intercity Transit, and the WA State Office of Financial Management

Table IV-3
Daily Vehicle Miles Traveled Per Capita, Thurston County, 1998, 2000, 2002

Year	Average Daily Vehicle Miles Traveled	Population	Daily VMT Per Capita
1998	7,483,445	198,435	37.7
2000	7,561,890	207,355	36.5
2002	7,997,714	212,300	37.7

Sources: Thurston Regional Planning Council and WA State Department of Licensing

Economy**Related GMA Goals:**

GMA Goal (5) Economic development. Encourage economic development throughout the state that is consistent with adopted comprehensive plans, promote economic opportunity for all citizens of this state, especially for unemployed and for disadvantaged persons, and encourage growth in areas experiencing insufficient economic growth, all within the capacities of the state's natural resources, public services, and public facilities.

GMA Goal (8) Natural resource industries. Maintain and enhance natural resource-based industries, including productive timber, agricultural, and fisheries industries. Encourage the conservation of productive forest lands and productive agricultural lands, and discourage incompatible uses.

Indicators Used:

- Real Wages
- Unemployment Rate
- Natural Resources Employment
- Related County-Wide Planning Policies

Related County-Wide Planning Policies:

Encourage sustainable economic development and support job opportunities and economic diversification that provide economic vitality and ensure protection of water resources and critical areas.

Support the retention and expansion of existing public sector and commercial development and environmentally sound, economically viable industrial development and resource uses.

Support recruitment of environmentally sound and economically viable economic development that helps to diversify or strengthen local economies.

Economy

Overview

Promoting economic vitality and diversity benefits the community as a whole. The data presented in this chapter provide a sampling of some of the possible measures of economic health that can be quantified. For more information on the economy of our region, please refer to The Profile, published annually by the Thurston Region Planning Council.

Economy

List of Benchmarks found in this chapter

Benchmark 10:

Real Wages Increase Over Time

Benchmark 11:

Employment in Agriculture, Forestry, Fishing and Mining is Maintained or Increases Over Time

Benchmark 12:

Unemployment Rate Declines

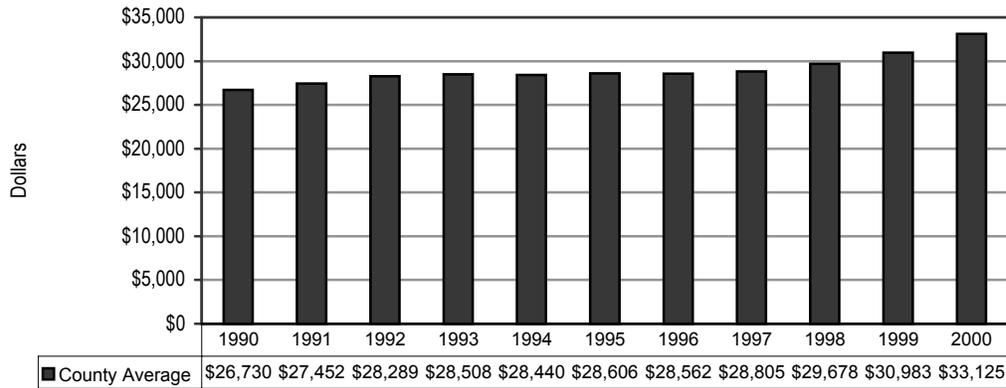
Benchmark 10

**Real Wages
Increase Over
Time**



Outlook:
sunny, overall positive results

**Figure V-1
Change in Real Wages, Thurston County, 1990-2000**



Source: Table V-3

Assessment:
Since 1990, real wages have increased in Thurston County

Benchmark 10**Real Wages
Increase Over
Time****Key Observations:**

- Real wages reflect wages adjusted for the effects of inflation. As a result it is a measurement that can be compared over time.
- Thurston County saw an increase in real wages over the 1990s, a time of moderate growth in the county's economy.

see Table V-4

For Further Information:

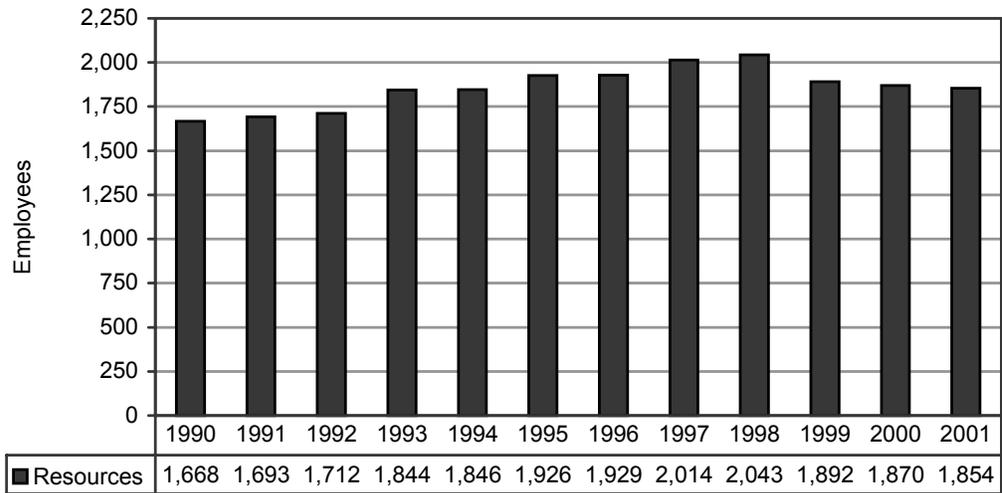
See Tables V-1 to V-4 and Chapter IV of [The Profile](#).

Benchmark 11

Employment in Agriculture, Forestry, Fishing and Mining is Maintained or Increases Over Time



**Figure V-2
Employment in Agriculture, Forestry, Fishing, and Mining,
Thurston County, 1990-2001**



Source: Table V-5

Assessment:

There has been a modest increase in employment in agriculture, forestry, fishing, and mining between 1990 and 2000. However, employment levels are down over the last two years of data.

Key Observations:

- It is a State Growth Management Act goal to maintain and enhance natural resource-based industries.
- In Thurston County, natural resource employment (agriculture, forestry, fishing, and mining) was slightly higher in 2001 than in 1990, with approximately 185 more employees in these industries over that time. This increase occurred between 1990 and 1998.
- However, beginning in 1999 natural resource employment levels began to decline, although they still remain higher in 2001 than in 1990.
- As a percentage share of total employment, natural resource employment has declined from 3 percent in 1990 to 2 percent in 2001.

For Further Information:

See Table V-5 and V-6 and Chapter IV of [The Profile](#).

Benchmark 11

Employment in Agriculture, Forestry, Fishing and Mining is Maintained or Increases Over Time

see Table V-5

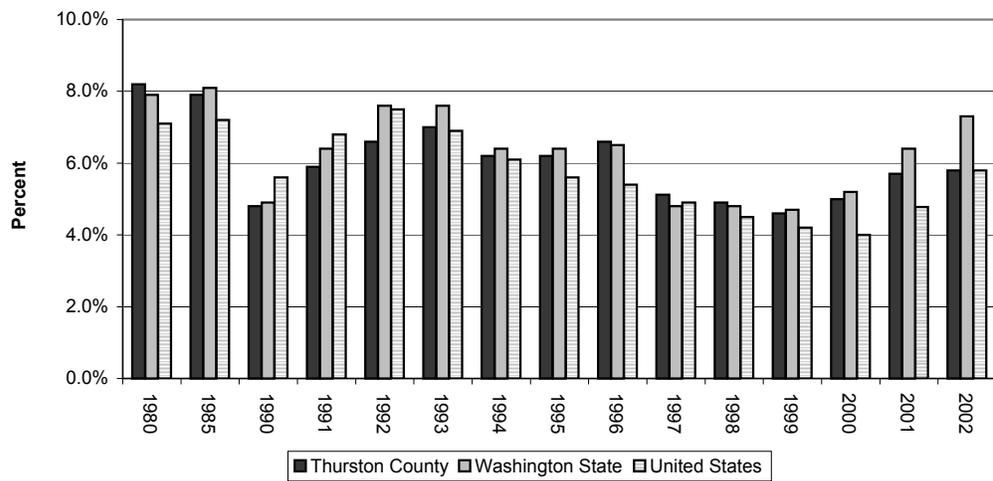
see Table V-6

Benchmark 12

Unemployment Rate Declines



Figure V-3
Unemployment Rates, Thurston County, Washington, United States, 1990-2002



Source: Table V-7

Benchmark 12**Unemployment
Rate Declines****Assesment:**

The county's unemployment rate has risen steadily since 1999. However, the county has had a lower unemployment rate than that of the state.

Key Observations:

- The unemployment rate has risen steadily since 1999, and in 2002 stands at its highest rate since 1996.
- The 2002 unemployment rate for the county is lower than that of Washington State as a whole, but the same as the national average.
- Unemployment rate trends are cyclical in nature. Over the last 50 years, the state's unemployment rates have generally tracked with national business cycles.
- Similarly, Thurston County's unemployment rates have, for the most part, closely followed state trends.

see Table V-7

see Table V-7

For Further Information:

See Table V-7 and Chapter IV of The Profile.

Table V-1
Nominal Wages by Industry, Thurston County, 1990-2001

Industry	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Government	\$26,216	\$28,259	\$30,305	\$31,662	\$31,617	\$32,626	\$33,588	\$33,979	\$34,829	\$36,092	\$37,859
Wholesale Trade	\$24,304	\$25,579	\$26,598	\$25,804	\$26,241	\$27,772	\$29,841	\$31,336	\$31,648	\$35,624	\$37,866
Retail Trade	\$11,784	\$12,576	\$13,320	\$13,792	\$14,274	\$14,829	\$14,332	\$15,333	\$17,278	\$19,851	\$22,617
Services	\$17,621	\$19,333	\$20,805	\$21,350	\$21,955	\$23,123	\$23,370	\$24,032	\$25,066	\$25,180	\$26,836
Manufacturing	\$26,889	\$27,990	\$28,248	\$28,806	\$31,434	\$31,430	\$31,544	\$31,518	\$33,471	\$32,849	\$33,303
Fin., Insur., Real Estate	\$19,927	\$20,788	\$23,070	\$24,242	\$24,321	\$25,152	\$26,690	\$28,231	\$29,541	\$31,991	\$34,273
Construction	\$20,871	\$21,178	\$21,592	\$21,464	\$22,812	\$23,009	\$24,125	\$25,472	\$27,153	\$29,471	\$31,071
Transportation & Utilities	\$25,874	\$26,321	\$26,474	\$27,416	\$28,476	\$29,177	\$29,644	\$31,857	\$32,052	\$32,419	\$41,625
Agriculture, Forestry, Fishing	\$13,510	\$13,764	\$14,430	\$14,552	\$15,348	\$15,991	\$16,476	\$17,709	\$18,806	\$19,628	\$20,880
Mining	\$21,954	\$24,755	\$23,582	\$22,715	\$24,044	\$25,795	\$25,881	\$28,689	\$31,646	\$36,664	\$34,486
County Average	\$21,319	\$22,727	\$24,123	\$24,893	\$25,330	\$26,064	\$26,570	\$27,306	\$28,443	\$29,693	\$31,746

Source: Labor Market Information Center, Washington State Department of Employment Security, Labor Market and Economic Analysis

Note: Nominal Wages reflect wages without compensation for inflation. Real Wages reflect wages adjusted for the effects of inflation.

**Table V-2
Percent Change of Nominal Wages by Industry, Thurston County, 1990-2000**

Industry	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	Average Annual 1990-00
Government	7.2%	6.8%	4.3%	-0.1%	3.1%	2.9%	1.2%	2.4%	3.5%	4.7%	3.7%
Wholesale Trade	5.0%	3.8%	-3.1%	1.7%	5.5%	6.9%	4.8%	1.0%	11.2%	5.9%	4.5%
Retail Trade	6.3%	5.6%	3.4%	3.4%	3.7%	-3.5%	6.5%	11.3%	13.0%	12.2%	6.7%
Services	8.9%	7.1%	2.6%	2.8%	5.1%	1.1%	2.8%	4.1%	0.5%	6.2%	4.3%
Manufacturing	3.9%	0.9%	1.9%	8.4%	0.0%	0.4%	-0.1%	5.8%	-1.9%	1.4%	2.2%
Fin., Insur., Real Estate	4.1%	9.9%	4.8%	0.3%	3.3%	5.8%	5.5%	4.4%	7.7%	6.7%	5.6%
Construction	1.4%	1.9%	-0.6%	5.9%	0.9%	4.6%	5.3%	6.2%	7.9%	5.1%	4.1%
Transportation & Utilities	1.7%	0.6%	3.4%	3.7%	2.4%	1.6%	6.9%	0.6%	1.1%	22.1%	4.9%
Agriculture, Forestry, Fishing	1.8%	4.6%	0.8%	5.2%	4.0%	2.9%	7.0%	5.8%	4.2%	6.0%	4.4%
Mining	11.3%	-5.0%	-3.8%	5.5%	6.8%	0.3%	9.8%	9.3%	13.7%	-6.3%	4.6%
County Average	6.2%	5.8%	3.1%	1.7%	2.8%	1.9%	2.7%	4.0%	4.2%	6.5%	4.1%

Source: Labor Market Information Center, Washington State Department of Employment Security, Labor Market and Economic Analysis
Note: Nominal Wages reflect wages without compensation for inflation. Real Wages reflect wages adjusted for the effects of inflation.

Table V-3
Real Wages by Industry, Thurston County, 1990-2000

Industry	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Government (Federal, State & Local)	\$32,869	\$34,134	\$35,539	\$36,260	\$35,499	\$35,808	\$36,106	\$35,845	\$36,342	\$37,660	\$39,503
Wholesale Trade	\$30,472	\$30,897	\$31,192	\$29,551	\$29,463	\$30,481	\$32,078	\$33,057	\$33,023	\$37,171	\$39,511
Retail Trade	\$14,775	\$15,190	\$15,621	\$15,795	\$16,026	\$16,275	\$15,406	\$16,175	\$18,028	\$20,713	\$23,599
Services	\$22,093	\$23,352	\$24,398	\$24,451	\$24,650	\$25,378	\$25,122	\$25,352	\$26,155	\$26,274	\$28,002
Manufacturing	\$33,713	\$33,809	\$33,127	\$32,989	\$35,293	\$34,495	\$33,908	\$33,249	\$34,925	\$34,276	\$34,749
Fin., Insur., Real Estate	\$24,984	\$25,110	\$27,054	\$27,763	\$27,307	\$27,605	\$28,690	\$29,781	\$30,824	\$33,380	\$35,762
Construction	\$26,168	\$25,581	\$25,321	\$24,581	\$25,613	\$25,253	\$25,933	\$26,871	\$28,332	\$30,751	\$32,420
Transportation & Utilities	\$32,441	\$31,793	\$31,046	\$31,398	\$31,972	\$32,023	\$31,866	\$33,606	\$33,444	\$33,827	\$43,433
Agriculture, Forestry, Fishing	\$16,939	\$16,625	\$16,922	\$16,665	\$17,232	\$17,551	\$17,711	\$18,681	\$19,623	\$20,480	\$21,787
Mining	\$27,526	\$29,901	\$27,655	\$26,014	\$26,996	\$28,311	\$27,821	\$30,264	\$33,020	\$38,256	\$35,984
County Average	\$26,730	\$27,452	\$28,289	\$28,508	\$28,440	\$28,606	\$28,562	\$28,805	\$29,678	\$30,983	\$33,125
Price Deflator¹	0.798	0.828	0.853	0.873	0.891	0.911	0.930	0.948	0.958	0.974	1.000

Source: Labor Market Information Center, Washington State Department of Employment Security, Labor Market and Economic Analysis

Note: '2000 Index. Nominal Wages reflect wages without compensation for inflation. Real Wages reflect wages adjusted for the effects of inflation.

**Table V-4
Percent Change of Real Wages by Industry, Thurston County, 1990-2000**

Industry	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	Average Annual 1990-00
Government (Federal, State & Local)	3.8%	4.1%	2.0%	-2.1%	0.9%	0.8%	-0.7%	1.4%	3.5%	4.7%	1.9%
Wholesale Trade	1.4%	1.0%	-5.3%	-0.3%	3.5%	5.2%	3.1%	-0.1%	11.2%	5.9%	2.6%
Retail Trade	2.8%	2.8%	1.1%	1.5%	1.6%	-5.3%	5.0%	11.5%	13.0%	12.2%	4.8%
Services	5.7%	4.5%	0.2%	0.8%	3.0%	-1.0%	0.9%	3.2%	0.5%	6.2%	2.4%
Manufacturing	0.3%	-2.0%	-0.4%	7.0%	-2.3%	-1.7%	-1.9%	5.0%	-1.9%	1.4%	0.3%
Fin., Insur., Real Estate	0.5%	7.7%	2.6%	-1.6%	1.1%	3.9%	3.8%	3.5%	7.7%	6.7%	3.7%
Construction	-2.2%	-1.0%	-2.9%	4.2%	-1.4%	2.7%	3.6%	5.4%	7.9%	5.1%	2.2%
Transportation & Utilities	-2.0%	-2.3%	1.1%	1.8%	0.2%	-0.5%	5.5%	-0.5%	1.1%	22.1%	3.0%
Agriculture, Forestry, Fishing	-1.8%	1.8%	-1.5%	3.4%	1.8%	0.9%	5.5%	5.0%	4.2%	6.0%	2.5%
Mining	8.6%	-7.5%	-5.9%	3.8%	4.9%	-1.7%	8.8%	9.1%	13.7%	-6.3%	2.7%
County Average	2.7%	3.1%	0.8%	-0.2%	0.6%	-0.2%	0.9%	3.0%	4.2%	6.5%	2.2%

Source: Labor Market Information Center, Washington State Department of Employment Security, Labor Market and Economic Analysis

Note: Nominal Wages reflect wages without compensation for inflation. Real Wages reflect wages adjusted for the effects of inflation

**Table V-5
Number of Employees by Industry, Thurston County, 1990-2001**

Industry	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Retail Trade and Services	23,029	24,177	25,361	26,720	28,221	29,200	30,408	31,304	32,341	33,252	34,135	34,190
Retail Trade	11,330	11,819	12,350	12,557	13,276	13,316	13,635	13,744	14,031	14,520	14,532	14,617
Services	11,699	12,358	13,011	14,163	14,945	15,884	16,773	17,560	18,310	18,732	19,603	19,573
Government	26,807	28,248	28,852	29,141	29,356	29,807	30,390	31,280	31,832	32,373	33,193	34,258
Federal	890	852	873	901	950	946	940	950	979	1,008	1,112	1,053
State	18,842	19,826	20,117	20,160	19,928	20,394	20,618	20,920	21,171	21,639	22,144	22,602
Local	7,075	7,570	7,862	8,080	8,478	8,467	8,832	9,410	9,682	9,726	9,937	10,603
All Other Categories	14,607	14,013	14,189	15,052	16,471	15,437	15,786	16,265	16,846	17,265	16,903	16,638
Wholesale Trade	1,871	1,995	1,881	1,874	1,933	2,058	1,980	2,092	2,160	2,155	2,148	2,085
Manufacturing	4,241	3,331	3,773	4,211	5,360	4,131	4,195	4,250	4,136	4,257	4,073	3,765
Fin., Insur., Real Estate	2,125	2,178	2,270	2,425	2,543	2,635	2,804	2,817	2,981	3,071	2,906	3,131
Construction	2,982	3,090	2,922	2,947	3,048	2,982	3,016	3,184	3,449	3,738	3,690	3,571
Transportation & Utilities	1,720	1,726	1,631	1,751	1,741	1,705	1,862	1,908	2,077	2,152	2,216	2,232
Agriculture, Forestry, Fishing	1,632	1,656	1,656	1,783	1,778	1,858	1,852	1,938	1,975	1,831	1,807	1,797
Mining	36	37	56	61	68	68	77	76	68	61	63	57
Total	64,443	66,438	68,402	70,913	74,048	74,444	76,584	78,849	81,019	82,890	84,231	85,086

Source: Labor Market Information Center, Washington State Department of Employment Security, Labor Market and Economic Analysis.

**Table V-6
Percent Employment by Industry, Thurston County, 1990-2001**

Industry	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Retail Trade and Services	36%	36%	37%	38%	38%	39%	40%	40%	40%	40%	41%	40%
Retail Trade	18%	18%	18%	18%	18%	18%	18%	17%	17%	18%	17%	17%
Services	18%	19%	19%	20%	20%	21%	22%	22%	23%	23%	23%	23%
Government	42%	43%	42%	41%	40%	40%	40%	40%	39%	39%	39%	40%
Federal	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
State	29%	30%	29%	28%	27%	27%	27%	27%	26%	26%	26%	27%
Local	11%	11%	11%	11%	11%	11%	12%	12%	12%	12%	12%	12%
All Other Categories	23%	21%	21%	21%	22%	21%	21%	21%	21%	21%	20%	20%
Wholesale Trade	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	2%
Manufacturing	7%	5%	6%	6%	7%	6%	5%	5%	5%	5%	5%	4%
Fin., Insur., Real Estate	3%	3%	3%	3%	3%	4%	4%	4%	4%	4%	3%	4%
Construction	5%	5%	4%	4%	4%	4%	4%	4%	4%	5%	4%	4%
Transportation & Utilities	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%
Agriculture, Forestry, Fishing	3%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Mining	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	100%											

Source: Labor Market Information Center, Washington State Department of Employment Security, Labor Market and Economic Analysis

Table V-7
Civilian Average Annual Unemployment in Thurston County, Washington,
United States, 1980-2002

Year	Thurston County		Washington State		United States	
	Unemployed	Rate	Unemployed	Rate	Unemployed	Rate
1980	4,500	8.2%	156,000	7.9%	7,637,000	7.1%
1985	5,200	7.9%	170,000	8.1%	8,312,000	7.2%
1990	3,900	4.8%	125,200	4.9%	7,047,000	5.6%
1991	4,800	5.9%	162,000	6.4%	8,628,000	6.8%
1992	5,700	6.6%	201,100	7.6%	9,613,000	7.5%
1993	6,200	7.0%	205,900	7.6%	8,940,000	6.9%
1994	5,500	6.2%	173,700	6.4%	7,996,000	6.1%
1995	5,800	6.2%	178,800	6.4%	7,404,000	5.6%
1996	6,400	6.6%	187,100	6.5%	7,236,000	5.4%
1997	5,100	5.1%	142,300	4.8%	6,739,000	4.9%
1998	4,900	4.9%	144,600	4.8%	6,210,000	4.5%
1999	4,700	4.6%	145,000	4.7%	5,880,000	4.2%
2000	5,000	5.0%	158,000	5.2%	5,655,000	4.0%
2001	5,600	5.7%	191,600	6.4%	6,779,333	4.8%
2002	6,022	5.8%	225,844	7.3%	8,378,000	5.8%

Source: Washington State Department of Employment Security, Labor Market, and Economic Analysis

Environment**Related GMA Goals:**

GMA Goal (9) Open space and recreation. Encourage the retention of open space and development of recreational opportunities, conserve fish and wild-life habitat, increase access to natural resource lands and water, and develop parks.

GMA Goal (10) Environment. Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.

Indicators Used:

- Land in Parks and Preserves
- Open Space in Subdivisions
- Land in Open Space Tax Program
- Rights-of-Way in Subdivisions
- Impervious Areas
- Recycling Rates
- Air Quality, Particulate Matter Levels
- Air Quality, Carbon Monoxide Levels
- Salmon Production

Related County-Wide Planning Policies:

Fulfill the responsibilities of each generation as a trustee of the environment for succeeding generations; and assure a safe, healthful, and productive environment for local residents.

Recognize our interdependence on natural systems and maintain a balance between human uses and the natural environment.

Provide for parks and open space.

Establish a pattern and intensity of land and resource use in concert with the ability of land and resources to sustain such use.

Concentrate development in urban growth areas in order to conserve natural resources and enable continued resource use.

Encourage the reuse and recycling of materials and products, and reduction of waste to the maximum extent practicable.

Protect and enhance air quality.

Environment

Overview

As our population grows, increasing demand is placed on our natural resources, impacting the quality of our water and air. Effects are often cumulative, and difficult to quantify. This report will provide some regional measurements of some changes that are quantifiable. It is by no means a comprehensive picture of the environmental health of our region, but rather an attempt to examine trends that may have long-term impacts on the region.

Environment**List of Benchmarks found in this chapter****Benchmark 13:**

The Amount of Land Designated to Parks and Preserves Per Capita Remains Constant or Increases.

Benchmark 14:

Acres of Open Space Per New Dwelling Unit in Subdivisions Increase or Remains Steady.

Benchmark 15:

Acres of Open Space Land Enrolled in the Open Space Tax Program Increase or Remains Steady Over Time.

Benchmark 16:

Acres of Right-of-Ways Per Approved Dwelling Unit in Subdivisions Decreases or Remains Steady.

Benchmark 17:

The Number of Basins in Thurston County with a Total Impervious Area of Greater Than 10 Percent Does Not Increase Over Time.

Benchmark 18:

The Solid Waste Recycle Rate Per Capita Increases Over Time.

Benchmark 19:

Highest Annual Readings for Particulate Matter (Pm10) Remain at or Below the National Standard of 150 Micrograms Per Cubic Meter.

Benchmark 20:

Highest Annual Readings for Carbon Monoxide Remain at or Below the National Standard of Nine Parts Per Million.

Benchmark 21:

Coho Salmon Production in the Deschutes River Increases or Remains Steady Over Time.

Benchmark 13

The Amount of Land Designated to Parks and Preserves Per Capita Remains Constant or Increases

Source: Table VI-3

Note: *The Thurston County Comprehensive Plan states that “the county focuses on providing parks, trails and preserves that contain special features intended to be used by all residents of the county, inside and outside cities.” Therefore, Thurston County parks per capita reflect county-owned parks and preserves compared to total county population, rather than the unincorporated portion of the county.

Source: Table VI-3

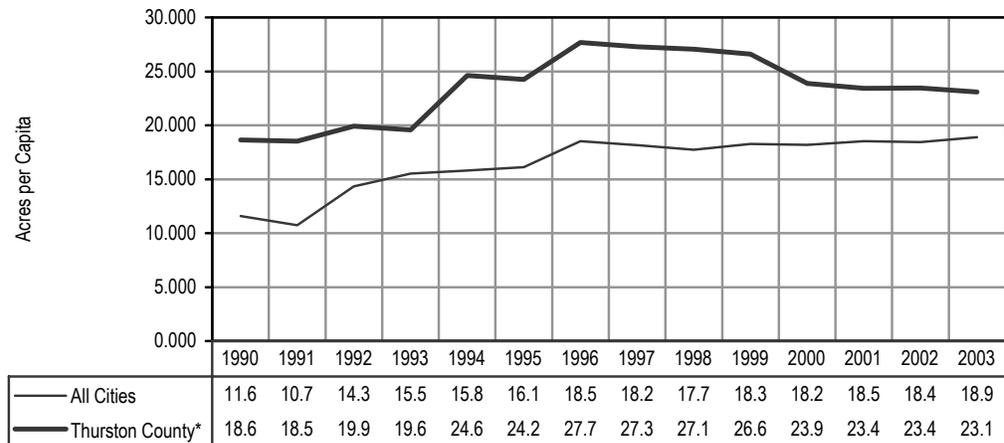
Note: **Tumwater Municipal Golf Course was purchased by the City of Tumwater in 1996, and is included in Tumwater’s park land.



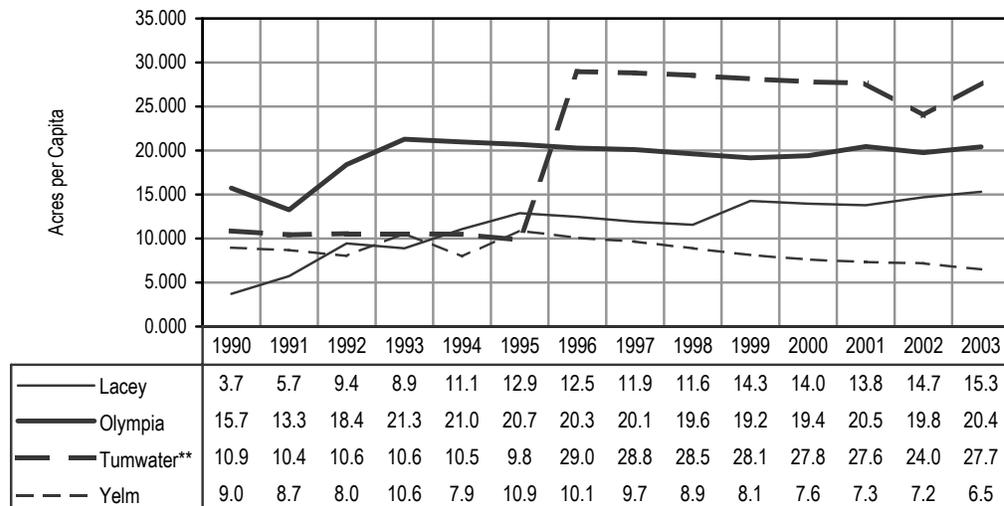
Outlook:

sunny, overall positive results

**Figure VI-1
Park Acreage per Capita (1,000), Incorporated and Unincorporated, Thurston County, 1990-2003**



**Figure VI-2
Park Acreage per Capita (1,000), Olympia, Lacey, Tumwater, and Yelm, 1990-2003**



Benchmark 13**The Amount of Land Designated to Parks and Preserves Per Capita Remains Constant or Increases****Assessment:**

Since 1991, the amount of parks and preserves per capita has been increasing in both the incorporated and unincorporated areas of Thurston County.

Key Observations:

- Total acres of parks and preserves per capita is a regional measure.
- Many jurisdictions maintain a level of service monitoring of parks and open space in their comprehensive plans that is far more detailed than this regional measure. This may include miles of trails, acres in community parks, numbers of swimming pools, acres in golf courses, and other detailed measurements of recreational opportunities.
- Urban parks and recreational opportunities often serve different functions than rural parks and preserves, which in turn serve different functions than state and federal parks.
- Park usage crosses jurisdictional boundaries, and jurisdictions often measure regional needs for parks and facilities prior to investing their resources locally.

For Further Information:

See Tables VI-1 to VI-3 and Chapter VIII of [The Profile](#).

Benchmark 14

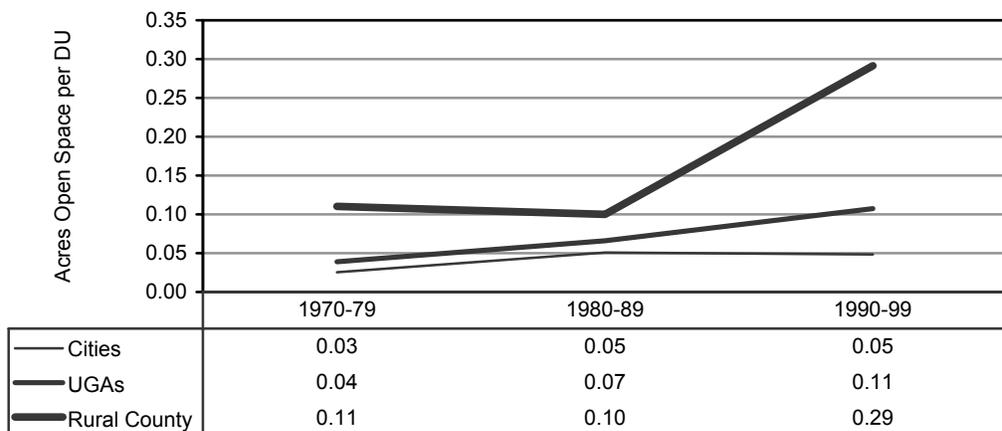
Acres of Open Space per New Dwelling Unit in Subdivisions Increase or Remains Steady



Outlook:

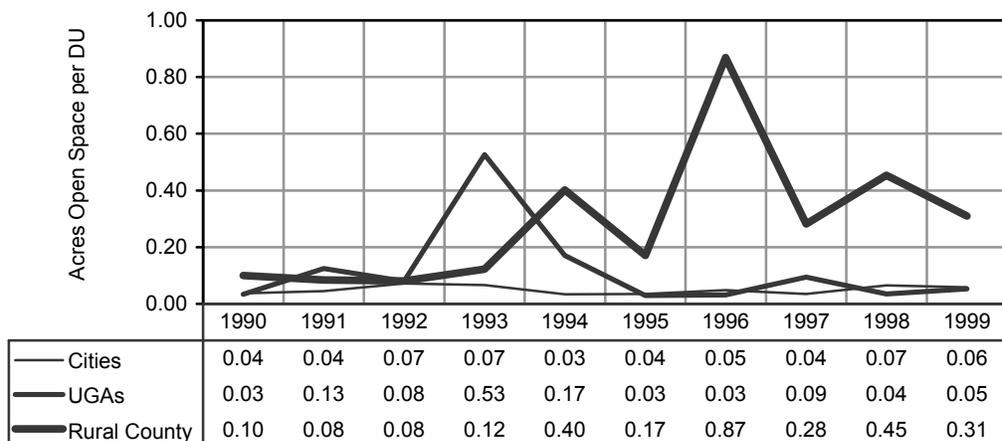
sunny, overall positive results

Figure VI-3
Acres of Open Space per Approved Dwelling Unit in Subdivisions, Thurston County, 1970-1999



Source: Table VI-4

Figure VI-4
Acres of Open Space per Approved Dwelling Unit in Subdivisions, Thurston County, 1990-1999



Source: Table VI-4

Benchmark 14**Acres of Open Space per New Dwelling Unit in Subdivisions Increase or Remains Steady****Assessment:**

The amount of acres of open space per approved dwelling unit in subdivisions has been generally increasing over the last three decades.

Key Observations:

- Subdivision open space can provide for recreational opportunities and environmental safeguards.
- Open space in subdivisions includes land designated for a large variety of uses, including recreation, wildlife habitat, riparian, and wetland protection, community drainfields, and green spaces.
- Jurisdictions vary in their requirements on subdivision open space. Some jurisdictions allocated funds from subdivision development to their parks programs, rather than requiring local park spaces.

For Further Information:

See Tables VI-4 and VI-5, the discussion of subdivisions in Chapter III of this report, and Chapter VIII of The Profile.

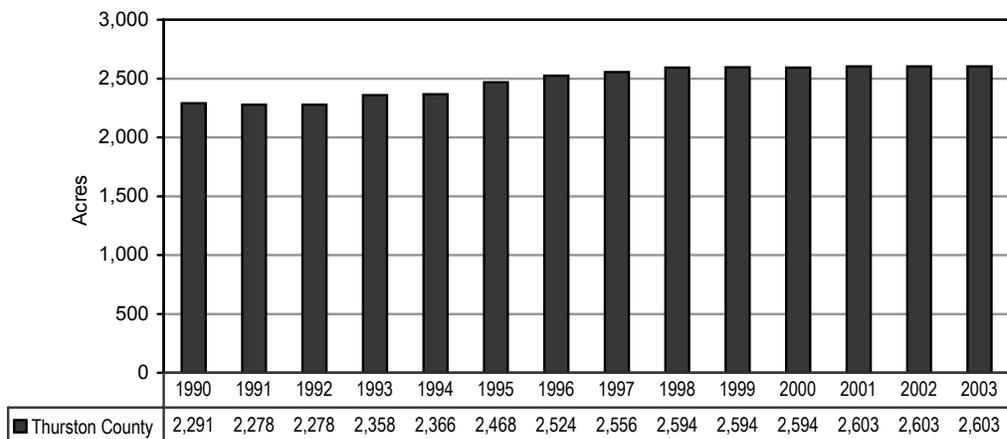
Benchmark 15

Acres of Open Space Land Enrolled in the Open Space Tax Program Increase or Remains Steady Over Time



Outlook:
sunny, overall positive results

**Figure VI-5
Acres of Open Space Land Enrolled in the Open Space Tax Program, Thurston County Tax Years 1990-2003**



Source: Table VI-6

Assessment:
The amount of open space land enrolled in the open space tax program has been steadily increasing over time.

Key Observations:

Parcels enrolled in the open space tax program are assessed at their current use value rather than their market value. This provides encouragement for landowners to keep their parcels in open space, rather than developing them.

For Further Information:

See Table VI-6 and Chapter VIII of [The Profile](#).

Benchmark 15

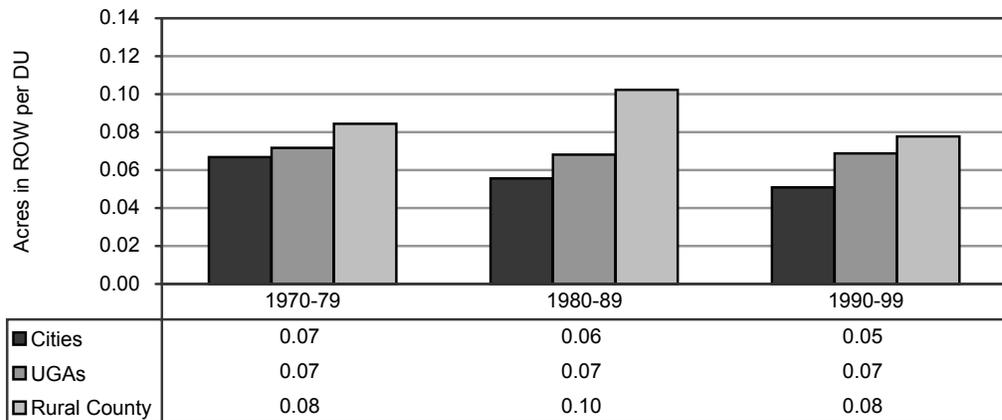
Acres of Open Space Land Enrolled in the Open Space Tax Program Increase or Remains Steady Over Time

Benchmark 16

Acres of Right-Of-Ways Per Approved Dwelling Unit in Subdivisions Decreases or Remains Steady

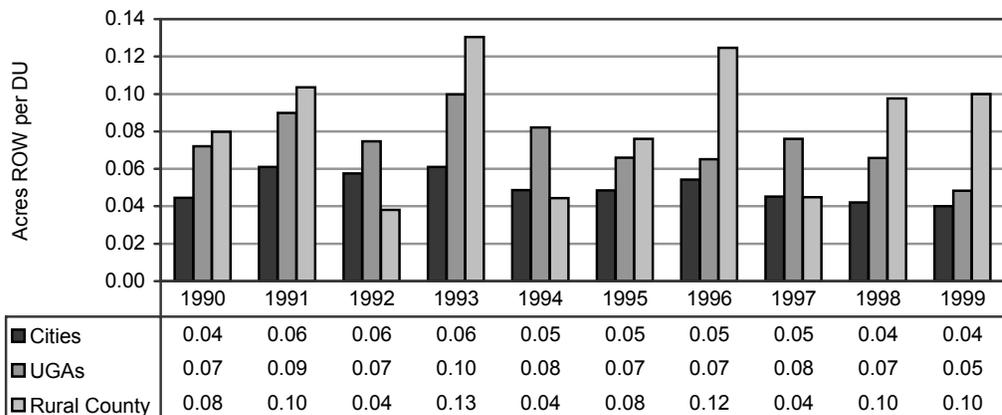


**Figure VI-6
Acres of Right-of-Way per Approved Dwelling Unit in Subdivisions, Thurston County, 1970-1999**



Source: Table VI-7

**Figure VI-7
Acres of Right-of-Way per Approved Dwelling Unit in Subdivisions, Thurston County, 1990-1999**



Source: Table VI-8

Assessment:

The number of acres of right-of-way per new dwelling unit has decreased somewhat in the cities and the rural county, while remaining steady in the urban growth areas. However, the 1990's show some variability in these generally positive trends.

Key Observations:

- Acres of new rights-of-way in subdivisions is one measure of new impervious area.
- Over the last three decades, the number of acres of right-of-way per approved dwelling unit has decreased in the cities, resulting in less impervious area per new dwellings. This trend continues through the 1990s.
- In the unincorporated UGAs, the acres of right-of-way per approved dwelling unit has remained steady over the last two decades. On an annual basis, it has been variable in the 1990s.
- In the rural county, where development density is low, the acres of right-of-way per approved dwelling unit is higher than both the cities and unincorporated UGAs. It has been variable throughout the last three decades.

For Further Information:

See Tables VI-7 and VI-8, discussion of subdivisions in Chapter III of this report, and Chapter VIII of [The Profile](#).

Benchmark 16

Acres of Right-Of-Ways Per Approved Dwelling Unit in Subdivisions Decreases or Remains Steady

see Tables VI-7 and VI-8

see Tables VI-7 and VI-8

see Tables VI-7 and VI-8

Benchmark 17

The Number of Basins in Thurston County with a Total Impervious Area of Greater Than 10 Percent Does Not Increase Over Time

Source: Table VI-9



Figure VI-8
Urban Land Cover Change, Thurston County, 1985-2000
For Basins With Two to Five Percent Impervious Surface in 1985

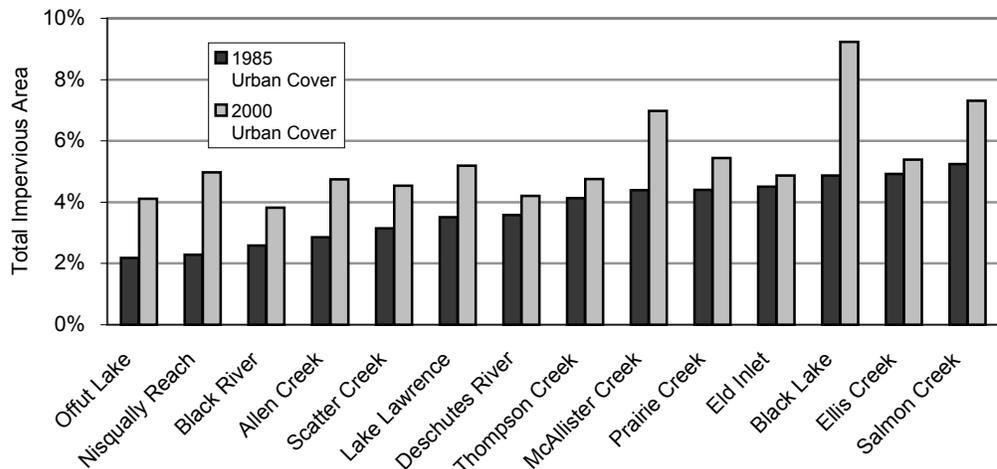
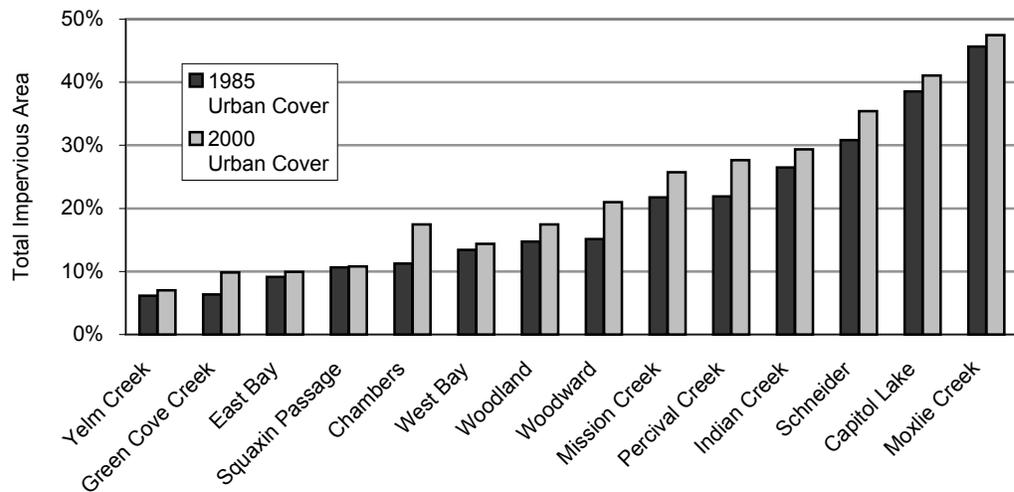


Figure VI-9
Urban Land Cover Change, Thurston County, 1985-2000
For Basins With Over Five Percent Impervious Surface in 1985



Source: Table VI-9

Assessment:

The number of basins in Thurston County with a total impervious area of greater than 10 percent did not increase between 1985 and 2000.

Key Observations:

- Scientific evidence has found a relationship between stream health and total impervious area. At 10 percent impervious area, a basin transitions from having protected stream health to impacted stream health. Above 30 percent impervious area, stream health is generally degraded
- Three basins in Thurston County have a total impervious area of greater than 30 percent in 2000. These are Schneider, Capitol Lake (which includes the downtown Olympia Peninsula), and Moxlie Creek. Each of these basins is in an urban area.
- A further 8 basins currently have a measured total impervious area of between 10 and 30 percent. Although impervious area has increased in all of these basins in the last 15 years, they were already over the 10 percent threshold in 1985.
- Several basins are on the edge of passing the 10 percent threshold.

For Further Information:

See Table VI-9, The Rate of Urbanization and Forest Harvest in Thurston County, 1985-2000, TRPC, and Chapter VIII of The Profile.

Benchmark 17

The Number of Basins in Thurston County with a Total Impervious Area of Greater Than 10 Percent Does Not Increase Over Time

Source: Table VI-9

Source: Table VI-9

Source: Table VI-9

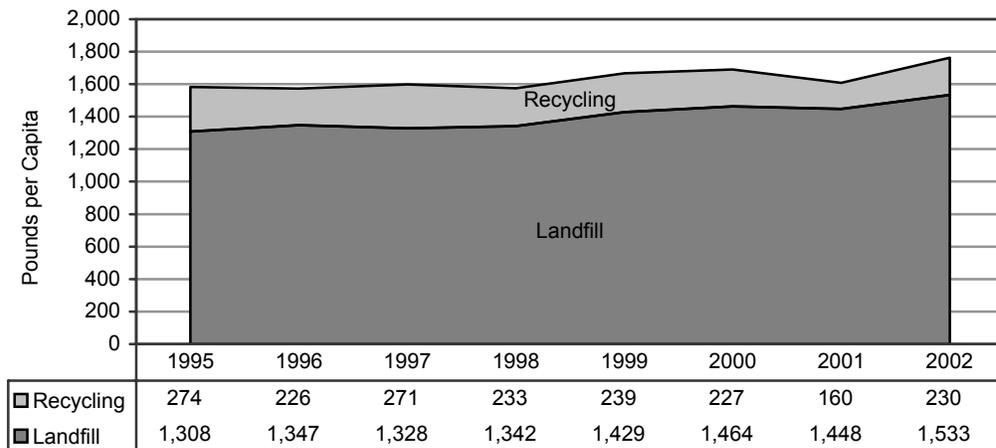
Benchmark 18

**The Solid Waste
Recycle Rate
Per Capita
Increases Over
Time**



Outlook:
partly sunny/partly cloudy

**Figure VI-10
Solid Waste, Pounds Per Capita, Thurston County, 1995-2002**



Source: Table VI-10

Assessment:
The recycle rate per capita has remained relatively steady over time.

Benchmark 18**The Solid Waste Recycle Rate Per Capita Increases Over Time****Key Observations:**

- The solid waste recycle rate has been variable. The 2002 rate is lower than in 1995, but up from its low point in 2001.
- Since 1993, Thurston County and the cities and towns of Thurston County have implemented many innovative waste reduction programs to support the 1993 Solid Waste Management Plan, which holds the mission to: “Significantly reduce the waste stream, emphasize recycling and recovery, and establish Thurston County as a center for waste reduction and recycling activities.” An update of the plan in 2001 reflects the changes in waste management practices that have occurred since 1983.

see Table VI-10

For Further Information:

See Tables VI-10, Chapter VIII of The Profile, and the Thurston County Solid Waste Management Plan Five Year Summary Report, Thurston County.

Benchmark 19

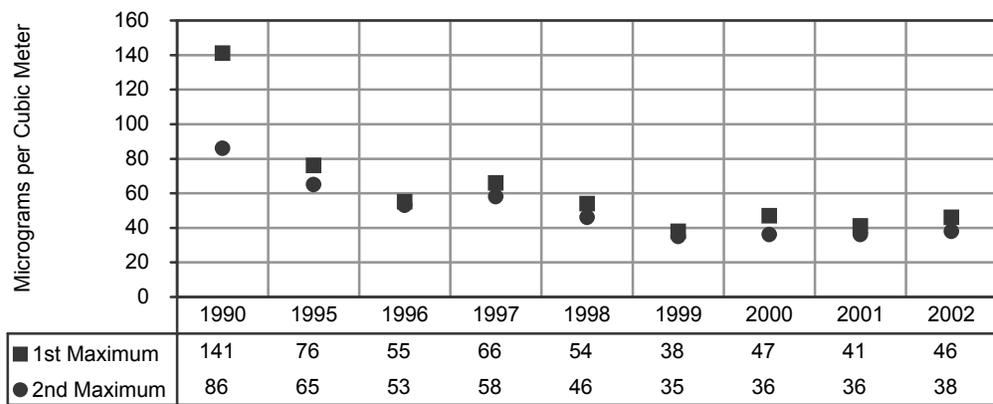
Highest Annual Readings for Particulate Matter (Pm10*) Remain at or Below the National Standard of 150 Micrograms Per Cubic Meter



Outlook:

sunny, overall positive results

**Figure VI-11
Air Quality, 1990-2002
Particulate Matter (PM10)**



Source: Table VI-11

Note: *Particulate matter 10 micrometers or smaller in diameter.

Explanation: 1st and 2nd maximums refer to the two days of the year which had the highest and second highest reading for the pollutant.

Assessment:

The highest annual reading for particulate matter has generally remained below the national standard since 1990.

Key Observations:

The highest annual reading for particulate matter has generally decreased since 1990.

For Further Information:

See Table VI-11, Air Quality Data Summary, Washington State Department of Ecology (www.ecy.wa.gov/ecology) and Chapter VIII of The Profile.

Benchmark 19

Highest Annual Readings for Particulate Matter (Pm10*) Remain at or Below the National Standard of 150 Micrograms Per Cubic Meter

see Table VI-11

Note: *Particulate matter 10 micrometers or smaller in diameter.

Benchmark 20

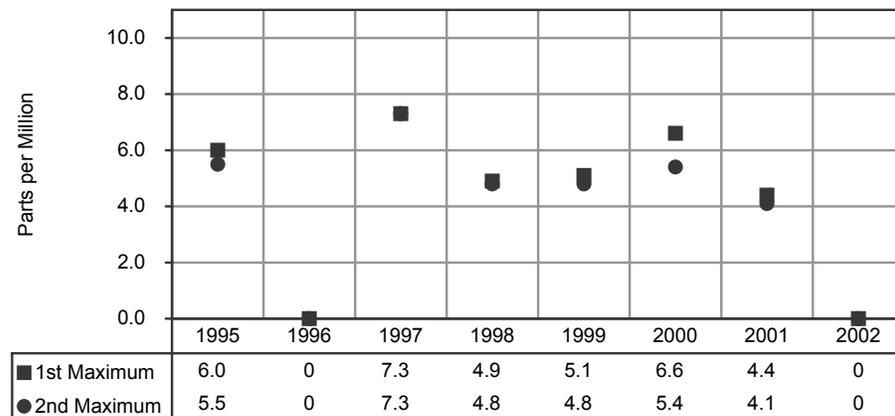
Highest Annual Readings for Carbon Monoxide Remain at or Below the National Standard of Nine Parts Per Million



Outlook

sunny, overall positive results

**Figure VI-12
Air Quality, 1995-2002
Carbon Monoxide (CO)**



Source: Table VI-11

National Standard: 9 parts per million

Explanation: 1st and 2nd maximums refer to the two days of the year which had the highest and second highest reading for the pollutant.

Assessment:
Carbon monoxide levels have generally decreased between 1995 and 2002.

Key Observations:

Carbon monoxide levels have generally decreased between 1995 and 2002.

For Further Information:

See Tables VI-11, Air Quality Data Summary, Washington State Department of Ecology (www.ecy.wa.gov/ecology), and Chapter VIII of The Profile.

Benchmark 20
Highest Annual Readings for Carbon Monoxide Remain at or Below the National Standard of Nine Parts Per Million

see Table VI-11

Benchmark 21

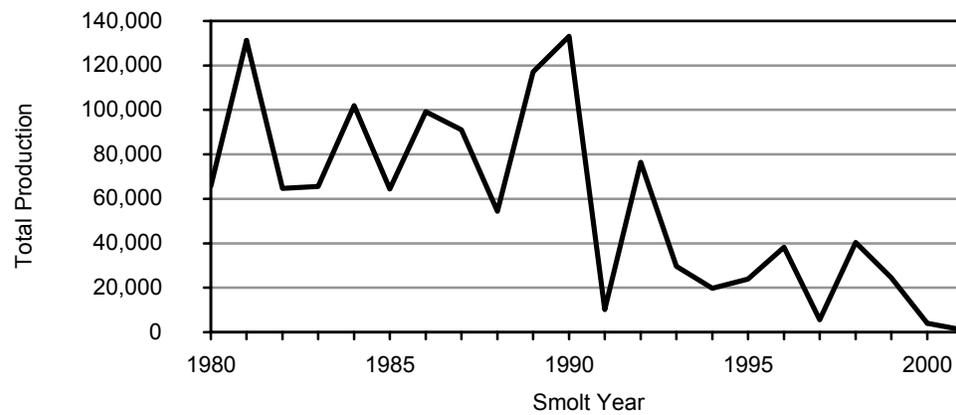
**Coho Salmon
Production in
the Deschutes
River Increases
or Remains
Steady Over
Time**

Source: Table VI-12



Outlook
stormy, concerns for the future

Figure VI-13
Deschutes River Coho Salmon Smolt Production, 1980-2001



Assessment
**Coho salmon smolt production in the Deschutes River
has dropped over time.**

Benchmark 21**Coho Salmon
Production in
the Deschutes
River Increases
or Remains
Steady Over
Time****Key Observations**

- Coho salmon smolt production in the Deschutes River has dropped over time.
- Causes for the drop in smolt production include habitat degradation in the watershed, severe winter storms, and extremely poor marine survival.
- After a peak of 133,198 in 1990, coho salmon smolt production has fallen to a low of 1,000 for 2001.
- The return cycle for coho salmon is three years.
- The Washington Department of Fish and Wildlife annually measures coho salmon smolt production, marine survival, and adult spawners.

For Further Information:

See Table VI-12 or contact the Washington Department of Fish and Wildlife at (360) 902-2200 or their website <http://www.wa.gov/wdfw/>, and Chapter VIII of [The Profile](#).

Table VI-1
Municipal Parks In Acres, Jurisdiction for Thurston County, 1990-2003

Year	Bucoda	Lacey	Olympia	Rainier	Tenino	Tumwater ¹	Yelm	Inc. Thurston County	Uninc. Thurston County	Total Thurston County
1990	14	72	531	6	35	109	12	777	1,754	2,531
1991	14	120	465	6	35	109	12	759	1,795	2,554
1992	14	204	660	6	35	118	12	1,047	1,979	3,026
1993	14	204	776	6	35	119	16	1,168	1,992	3,160
1994	14	273	776	6	35	119	16	1,238	2,547	3,785
1995	14	333	781	6	35	119	25	1,312	2,547	3,859
1996	14	337	786	6	35	353	25	1,554	2,950	4,504
1997	14	338	794	6	35	353	25	1,564	2,955	4,519
1998	14	338	795	8	35	353	25	1,567	2,978	4,545
1999	14	436	795	8	35	353	25	1,665	2,978	4,643
2000	14	436	825	8	35	353	25	1,696	2,725	4,421
2001	14	436	870	8	35	353	25	1,741	2,725	4,466
2002	14	468	844	8	35	353	25	1,747	2,765	4,512
2003	14	494	875	8	35	353	25	1,804	2,765	4,569

Sources: TRPC Survey of Thurston County Parks Department, Tumwater, Olympia and Lacey Parks Departments, Cities/Towns of Bucoda, Rainier, Tenino and Yelm.

Note: ¹Tumwater Municipal Golf Course was purchased by the City of Tumwater in 1996, and is included in Tumwater's park land. Additional details regarding parks in Thurston County are provided in Chapter VIII of the The Profile, published annually by TRPC, and available at www.trpc.org.

Table VI-2
Population by Jurisdiction, Thurston County, 1990-2003

Year	Bucoda	Lacey	Olympia	Rainier	Tenino	Tumwater	Yelm	Inc. Thurston County	Uninc. Thurston County	Total Thurston County
1990	536	19,279	33,729	991	1,292	9,976	1,337	67,140	94,098	161,238
1991	540	20,894	35,082	1,111	1,293	10,429	1,384	70,733	96,930	167,663
1992	557	21,583	35,813	1,209	1,292	11,129	1,498	73,081	99,344	172,425
1993	582	22,889	36,455	1,337	1,298	11,220	1,512	75,293	101,765	177,058
1994	611	24,653	36,984	1,432	1,312	11,306	2,013	78,311	103,404	181,715
1995	599	25,878	37,734	1,422	1,390	12,053	2,295	81,371	105,048	186,419
1996	606	27,021	38,714	1,451	1,405	12,166	2,487	83,850	106,559	190,409
1997	621	28,310	39,473	1,488	1,434	12,233	2,586	86,145	108,295	194,440
1998	623	29,151	40,487	1,507	1,444	12,354	2,813	88,379	110,056	198,435
1999	627	30,538	41,467	1,501	1,447	12,531	3,075	91,186	111,981	203,167
2000	628	31,226	42,514	1,492	1,447	12,698	3,289	93,294	114,061	207,355
2001	635	31,660	42,530	1,485	1,460	12,770	3,420	93,900	116,300	210,200
2002	640	31,860	42,690	1,490	1,470	14,730	3,485	94,365	117,935	212,300
2003	645	32,240	42,860	1,515	1,495	12,740	3,830	95,325	119,475	214,800

Sources: U.S. Bureau of the Census; Washington State Office of Financial Management; TRPC

Table VI-3
Parks per Capita (1,000), Thurston County Jurisdictions, 1990-2003

Year	Bucoda	Lacey	Olympia	Rainier	Tenino	Tumwater ¹	Yelm	All Cities	Thurston County ²	Total Thurston County
1990	26.1	3.7	15.7	5.5	27.1	10.9	9.0	11.6	18.6	15.7
1991	25.9	5.7	13.3	5.0	27.1	10.4	8.7	10.7	18.5	15.2
1992	25.1	9.4	18.4	4.5	27.1	10.6	8.0	14.3	19.9	17.5
1993	24.1	8.9	21.3	4.1	27.0	10.6	10.6	15.5	19.6	17.8
1994	22.9	11.1	21.0	3.8	26.7	10.5	7.9	15.8	24.6	20.8
1995	23.4	12.9	20.7	3.9	25.2	9.8	10.9	16.1	24.2	20.7
1996	23.1	12.5	20.3	3.8	24.9	29.0	10.1	18.5	27.7	23.7
1997	22.5	11.9	20.1	3.9	24.4	28.8	9.7	18.2	27.3	23.2
1998	22.5	11.6	19.6	5.1	24.2	28.5	8.9	17.7	27.1	22.9
1999	22.3	14.3	19.2	5.2	24.2	28.1	8.1	18.3	26.6	22.9
2000	22.3	14.0	19.4	5.4	24.2	27.8	7.6	18.2	23.9	21.3
2001	22.0	13.8	20.5	5.4	24.0	27.6	7.3	18.5	23.4	21.2
2002	21.9	14.7	19.8	5.4	23.8	24.0	7.2	18.5	23.4	21.3
2003	21.7	15.3	20.4	5.3	23.4	27.7	6.5	18.9	23.1	21.3

Sources: Tables V-1 and V-2

Note: ¹Tumwater Municipal Golf Course was purchased by the City of Tumwater in 1996, and is included in Tumwater's park land. ²The Thurston County Comprehensive Plan states that "the county focuses on providing parks, trails and preserves that contain special features intended to be used by all residents of the county, inside and outside cities." Therefore, Thurston County parks per capita reflect County-owned parks and preserves compared to total county population, rather than the unincorporated portion of the County

**Table VI-4
Average Number of Approved Dwelling Units per Acre of Open Space
in Residential Subdivisions Thurston County, 1970-1999**

Jurisdiction	1970-1979			1980-1989			1990-1999		
	Approved Dwelling Units	Acres of Open Space	Approved DU Space/Approved DU	Approved Dwelling Units	Acres of Open Space	Approved DU Space/Approved DU	Approved Dwelling Units	Acres of Open Space	Approved DU Space/Approved DU
Total	0	0	0.00	0	0	0.00	0	0	0.00
Lacey	1,422	27	0.02	843	35	0.04	3,602	186	0.05
UGA	2,807	80	0.03	2,040	109	0.05	1,269	66	0.05
Total	4,229	106	0.03	2,883	144	0.05	4,871	252	0.05
Olympia	1,210	37	0.03	855	32	0.04	1,541	64	0.04
UGA	966	62	0.06	348	35	0.10	854	99	0.12
Total	2,176	99	0.05	1,203	68	0.06	2,395	163	0.07
Rainier	0	0	0.00	0	0	0.00	153	5	0.03
UGA	0	0	0.00	0	0	0.00	0	0	0.00
Total	0	0	0.00	0	0	0.00	153	5	0.03
Tenino	19	1	0.06	0	0	0.00	134	8	0.06
UGA	0	0	0.00	0	0	0.00	0	0	0.00
Total	19	1	0.06	0	0	0.00	134	8	0.06
Tumwater	281	12	0.04	584	48	0.08	459	33	0.07
UGA	319	17	0.05	210	32	0.15	539	120	0.22
Total	600	29	0.05	794	80	0.10	998	153	0.15
Yelm	107	0	0.00	0	0	0.00	513	15	0.03
UGA	0	0	0.00	91	1	0.01	7	1	0.10
Total	107	0	0.00	91	1	0.01	520	16	0.03
Total Cities	3,039	77	0.03	2,282	116	0.05	6,402	310	0.05
Total UGAs	4,092	159	0.04	2,689	177	0.07	2,669	286	0.11
Total Urban Areas	7,131	236	0.03	4,971	293	0.06	9,071	596	0.07
Rural Unincorporated County	3,595	396	0.11	826	83	0.10	1,256	366	0.29
Thurston County Total	10,726	633	0.06	5,797	375	0.06	10,327	962	0.09

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: This table does not include residential lots created in mobile home parks; represents scenario if subdivision were completely built out.

Table VI-5
Acres in Open Space per Average Number of Approved Dwelling Units
in Subdivisions, Thurston County, 1990-1999

Year	Total Cities			Total UGAs			Rural Unincorporated County		
	Approved Dwelling Units	Acres in Open Space	Acres of Open Space/ Approved DU	Approved Dwelling Units	Acres in Open Space	Acres of Open Space/ Approved DU	Approved Dwelling Units	Acres in Open Space	Acres of Open Space/ Approved DU
1990	672	25	0.04	234	8	0.03	105	11	0.10
1991	495	22	0.04	266	33	0.13	44	4	0.08
1992	641	46	0.07	287	23	0.08	181	15	0.08
1993	962	63	0.07	202	106	0.53	49	6	0.12
1994	1,316	44	0.03	202	35	0.17	59	24	0.40
1995	549	19	0.04	225	7	0.03	187	32	0.17
1996	320	16	0.05	124	4	0.03	123	107	0.87
1997	577	20	0.04	426	40	0.09	145	41	0.28
1998	412	27	0.07	392	14	0.04	108	49	0.45
1999	478	28	0.06	330	17	0.05	255	79	0.31
Total	5,824	290	0.05	2,174	252	0.12	991	227	0.23

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: Represents scenario if subdivisions were built out to full potential

Table VI-6
Acres of Open Space Enrolled in the Open Space Tax Program
Thurston County 1990-2003

Open Space Tax Program	
Tax Year	(acres)
1990	2,291
1991	2,278
1992	2,278
1993	2,358
1994	2,366
1995	2,468
1996	2,524
1997	2,556
1998	2,594
1999	2,594
2000	2,594
2001	2,603
2002	2,603
2003	2,603

Source: Thurston County Assessor's Office

Explanation: Includes open space lands subject to current use assessments under the Open Space Taxation Act (CH. 84.34 RCW)

Table VI-7
Average Number of Approved Dwelling Units per Acre of Right-of-Way
in Residential Subdivisions Thurston County, 1970-1999

Jurisdiction		1970-1979			1980-1989			1990-1999		
		Approved Dwelling Units	Acres in ROW	Acres/ Approved DU	Approved Dwelling Units	Acres in ROW	Acres/ Approved DU	Approved Dwelling Units	Acres in ROW	Acres/ Approved DU
Bucoda	Total	0	0	0.00	0	0	0.00	20	1	0.05
Lacey	City	1,422	90	0.06	843	37	0.04	3,602	182	0.05
	UGA	2,807	196	0.07	2,040	146	0.07	1,269	81	0.06
	Total	4,229	287	0.07	2,883	183	0.06	4,871	263	0.05
Olympia	City	1,210	80	0.07	855	42	0.05	1,541	77	0.05
	UGA	966	67	0.07	348	21	0.06	854	62	0.07
	Total	2,176	147	0.07	1,203	63	0.05	2,395	139	0.06
Rainier	City	26	4	0.15	10	2	0.18	153	14	0.09
	UGA	0	0	0.00	0	0	0.00	19	1	0.08
	Total	26	4	0.15	10	2	0.18	172	16	0.09
Tenino	City	19	0	0.03	0	0	0.00	134	4	0.03
	UGA	0	0	0.00	0	0	0.00	0	0	0.00
	Total	19	0	0.03	0	0	0.00	134	4	0.03
Tumwater	City	281	15	0.05	584	44	0.08	459	22	0.05
	UGA	319	22	0.07	210	17	0.08	539	40	0.07
	Total	600	38	0.06	794	61	0.08	998	62	0.06
Yelm	City	107	8	0.07	29	1	0.04	513	27	0.05
	UGA	36	1	0.03	91	2	0.02	0	0	0.00
	Total	143	9	0.06	120	3	0.02	513	27	0.05
Total Cities		3,065	198	0.06	2,321	126	0.05	6,422	326	0.05
Total UGAs		4,128	287	0.07	2,689	186	0.07	2,681	184	0.07
Total Urban Areas		7,193	485	0.07	5,010	312	0.06	9,103	511	0.06
Rural Unincorporated County		3,595	281	0.08	826	85	0.10	1,256	98	0.08
Thurston County Total		10,788	766	0.07	5,836	397	0.07	10,359	609	0.06

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: This table does not include residential lots created in mobile home parks; represents scenario if subdivision were completely built out.

Table VI-8
Average Number of Approved Dwelling Units per Acre in Right-of-Ways
Thurston County, 1990-1999

Year	Cities			UGAs			Rural County		
	Approved Dwelling Units	Acres in Right of Ways	Acres/ Approved DU	Approved Dwelling Units	Acres in Right of Ways	Acres/ Approved DU	Approved Dwelling Units	Acres in Right of Ways	Acres/ Approved DU
1990	672	32	0.05	234	17	0.07	105	9	0.09
1991	495	30	0.06	266	23	0.09	44	5	0.10
1992	641	36	0.06	287	21	0.07	181	7	0.04
1993	962	57	0.06	202	22	0.11	49	4	0.09
1994	1,316	63	0.05	202	17	0.08	59	3	0.04
1995	549	26	0.05	225	11	0.05	187	12	0.07
1996	320	16	0.05	124	8	0.07	123	14	0.12
1997	577	27	0.05	426	25	0.06	145	7	0.05
1998	412	21	0.05	392	25	0.06	108	11	0.10
1999	478	19	0.04	330	16	0.05	255	25	0.10
Total	5,824	301	0.05	2,174	167	0.08	991	75	0.08

Sources: TRPC; Thurston County Assessor's Office; Thurston County Auditor's Office

Explanation: This table does not include residential lots created in mobile home parks; represents scenario if subdivision were completely built out.

Table VI-9
Change in Urban (Built) Land Cover by Thurston County Basins, 1985-2000

Basin	Total	2000		1985		1985-2000		
	(acres)	(acres)	(%)	(acres)	(%)	(acres)	(% of Total)	(% of 1985)
Alder Lake	2,656	1	0%	1	0%	0	0%	0%
Allen Creek	3,418	162	5%	98	3%	64	2%	40%
Bald Hill Lake	794	1	0%	1	0%	0	0%	0%
Beaver Creek	13,166	397	3%	306	2%	92	1%	23%
Black Lake	5,526	510	9%	269	5%	241	4%	47%
Black River	25,092	958	4%	649	3%	309	1%	32%
Bloody Run	2,062	9	0%	9	0%	0	0%	0%
Bloom Ditch	5,010	127	3%	93	2%	35	1%	27%
Burns	166	6	3%	0	0%	5	3%	96%
Capitol Lake	1,663	683	41%	641	39%	42	3%	6%
Chambers	8,416	1,468	17%	945	11%	523	6%	36%
Clear Lake	1,850	8	0%	3	0%	5	0%	62%
Dana Passage	1,146	35	3%	34	3%	1	0%	2%
Dempsey Creek	5,844	116	2%	91	2%	25	0%	21%
Deschutes River	56,284	2,368	4%	2,014	4%	353	1%	15%
East Bay	2,761	275	10%	252	9%	23	1%	8%
E Fork Independence Cr	1,551	14	1%	13	1%	1	0%	8%
Elbow Lake	1,163	7	1%	7	1%	0	0%	0%
Eld Inlet	9,061	441	5%	409	5%	32	0%	7%
Ellis Creek	1,472	79	5%	72	5%	7	0%	9%
Fall Creek	1,443	11	1%	11	1%	0	0%	0%
Frost Prairie	1,844	6	0%	5	0%	1	0%	16%
Green Cove Creek	2,636	260	10%	168	6%	92	3%	35%
Hanaford Creek	6,095	38	1%	38	1%	0	0%	0%
Henderson	7,335	213	3%	180	2%	33	0%	15%
Indian Creek	1,500	440	29%	397	26%	43	3%	10%
Johnson Creek	6,495	37	1%	36	1%	1	0%	2%
Kennedy Creek	9,876	101	1%	101	1%	0	0%	0%
Lake Lawrence	1,687	88	5%	59	4%	28	2%	32%
Lincoln Creek	1,879	14	1%	14	1%	0	0%	0%
Lost Valley	1,143	8	1%	8	1%	0	0%	0%
McAllister Creek	19,818	1,383	7%	870	4%	513	3%	37%
McIntosh Lake	1,486	32	2%	25	2%	7	0%	23%
McLane Creek	7,305	97	1%	57	1%	40	1%	41%

Source: The Rate of Urbanization and Forest Harvest in Thurston County, 1985-2000, TRPC

Table VI-9, continued
Change in Urban (Built) Land Cover by Thurston County Basins, 1985-2000

Basin	Total	2000		1985		1985-2000		
	(acres)	(acres)	(%)	(acres)	(%)	(acres)	(% of Total)	(% of 1985)
Michigan	2,630	31	1%	31	1%	0	0%	0%
Mima Creek	7,941	57	1%	57	1%	1	0%	1%
Mission Creek	359	92	26%	78	22%	14	4%	16%
Monroe Creek	1,072	10	1%	10	1%	0	0%	0%
Moxlie Creek	1,463	695	47%	668	46%	27	2%	4%
Nisqually	31,736	745	2%	514	2%	232	1%	31%
Nisqually Reach	4,662	232	5%	107	2%	125	3%	54%
O'Connor	2,189	12	1%	12	1%	0	0%	0%
Offut Lake	1,532	63	4%	33	2%	30	2%	47%
Percival Creek	4,712	1,302	28%	1,033	22%	270	6%	21%
Perry Creek	4,047	81	2%	79	2%	2	0%	2%
Pierre	103	2	2%	1	1%	0	0%	10%
Porter Creek	9,427	63	1%	63	1%	0	0%	0%
Prairie Creek	13,551	737	5%	596	4%	141	1%	19%
Reichel Lake	5,147	91	2%	91	2%	0	0%	0%
Salmon Creek	7,318	535	7%	384	5%	151	2%	28%
Salmon Creek (SK)	2,831	11	0%	11	0%	0	0%	0%
Scatter Creek	27,423	1,245	5%	863	3%	382	1%	31%
Schneider	680	241	35%	210	31%	31	5%	13%
Schneider Creek	5,243	123	2%	108	2%	15	0%	12%
Sherman Creek	6,187	39	1%	39	1%	0	0%	0%
Skookumchuck	9,472	275	3%	227	2%	48	1%	18%
Spurgeon Creek	6,662	151	2%	102	2%	49	1%	32%
Squaxin Passage	485	52	11%	52	11%	1	0%	1%
Summit Lake	1,900	55	3%	50	3%	5	0%	9%
Tempo Lake	749	9	1%	5	1%	3	0%	38%
Thompson Creek	10,295	489	5%	425	4%	64	1%	13%
Thompson Creek (SK)	21,174	290	1%	288	1%	2	0%	1%
Totten Inlet	4,113	113	3%	94	2%	20	0%	17%
Waddell Creek	11,182	154	1%	119	1%	36	0%	23%
West Bay	1,918	275	14%	258	13%	18	1%	6%
Woodward	4,479	782	17%	659	15%	123	3%	16%
Woodland	18,873	3,960	21%	2,856	15%	1,103	6%	28%
Yelm Creek	15,667	1,098	7%	964	6%	134	1%	12%
Zenkner	3,002	15	1%	15	1%	0	0%	0%
TOTAL	469,867	24,520	5%	18,979	4%	5,541	1%	23%

Source: The Rate of Urbanization and Forest Harvest in Thurston County, 1985-2000, TRPC

**Table VI-10
Solid Waste, Thurston County, 1995-2002**

	1995	1996	1997	1998	1999	2000 ¹	2001	2002
Recycling (tons)								
Compost Center	7,102	6,805	7,347	4,715	6,918	6,000	10,524 ³	10,002
Curbside Compost - Olympia	1,743	1,874	2,268	2,786	2,491	2,500	N/A	N/A
Regional Drop Box	1,972	2,198	2,473	2,099	1,618	1,585	1,582	1587
Curbside - Thurston County	10,172	6,359	9,749	7,678	7,388	7,225	8,841	7330
Curbside - Olympia	3,194	3,145	3,270	4,477	4,405	4,400	4,149	3899
Recycle Center	1,736	1,443	1,656	1,559	1,372	1,500	2,240	1611
Total Recycling²	25,919	21,823	26,764	23,314	24,192	23,210	16,812	24,429
Landfill Solid Waste (tons)	123,771	130,098	131,189	133,951	144,803	149,842	152,174	162,731
Population	189,201	193,100	197,600	199,700	202,700	204,700	210,200	212,300
Recycling Pounds per Capita	274	226	271	233	239	227	160	230
Landfill Waste Pounds per Capita	1,308	1,347	1,328	1,342	1,429	1,464	1,448	1,533

Source: Thurston County Solid Waste

Explanations: ¹Some 2000 data estimated. ²Waste recycled through the Commercial Recycling Program and Backyard Composting is not included in this table. ³Compost Center tons for 2001 include City of Olympia materials

**Table VI-11
Air Quality, Thurston County, 1985, 1990-2000**

Pollutant	National Standards	Readings	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002
Matter ¹ (PM10) 24 Hour	Micrograms per cubic	1st Maximum	254	141	76	55	66	54	38	47	41	46
		2nd Maximum	249	86	65	53	58	46	35	36	36	38
Matter ² (PM10) 24 Hour	Micrograms per cubic	1st Maximum	N/A	N/A	N/A	N/A	N/A	55	41	51	43	49
		2nd Maximum	N/A	N/A	N/A	N/A	N/A	48	37	39	39	41
Matter (PM2.5) 24 Hour	micrograms per cubic	1st Maximum	N/A	N/A	N/A	N/A	N/A	N/A	53.3	46.3	45.6	49.1
		2nd Maximum	N/A	N/A	N/A	N/A	N/A	N/A	31.9	40.8	40.8	41.2
Particulate Matter (PM2.5) Annual Average	micrograms per cubic meter		N/A	N/A	N/A	N/A	N/A	N/A	9.17	10.34	9.58	9.49
Monoxide (CO) 8 Hour	9 parts per million	1st Maximum	N/A	N/A	6.0	7.5 ⁴	7.3	4.9	5.1	6.6	4.4	3.5 ⁵
		2nd Maximum	N/A	N/A	5.5	7.5 ⁴	7.3	4.8	4.8	5.4	4.1	3.4 ⁵
Ozone 1 Hour Average	0.12 parts per million	1st Maximum	N/A	N/A	N/A	N/A	0.076	0.126	0.080	0.086	0.087	0.086
		2nd Maximum	N/A	N/A	N/A	N/A	0.072	0.105	0.076	0.079	0.072	0.076
Ozone 8 Hour Average	0.08 parts per million	1st Maximum	N/A	N/A	N/A	N/A	0.066	0.095	0.065	0.073	0.071	0.071
		2nd Maximum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Olympia Air Pollution Control Authority

Note: ¹Particulate matter 10 micrometers or smaller in diameter. ²No permanent site to measure CO prior to 1992.

Table VI-12
Deschutes River Coho Salmon Smolt Production

Smolt Year	Total Production
1980	65,776
1981	131,261
1982	64,757
1983	65,518
1984	101,901
1985	64,452
1986	99,241
1987	91,057
1988	54,397
1989	117,164
1990	133,198
1991	10,101
1992	76,438
1993	29,652
1994	19,686
1995	23,912
1996	38,197
1997	5,541
1998	40,412
1999	24,422
2000	4,000
2001	1,000

Source: Washington Department of Fish and Wildlife

**Housing
Affordability****Related GMA Goals:**

GMA Goal (4) Housing. Encourage the availability of affordable housing to all economic segments of the population of this state, promote a variety of residential densities and housing types, and encourage preservation of existing housing stock.

Indicators Used:

- Household Income to Average Housing Sale Price
- Housing Affordability Index
- Apartment Vacancy Rates

Related County-Wide Planning Policies:

Encourage the availability of affordable housing for all incomes and needs and ensure that each community includes a fair share of housing for all economic segments of the population.

Explore ways to reduce the costs of housing.

Encourage a range of housing types and costs commensurate with the employment base and income levels of jurisdictions populations, particularly for low, moderate and fixed income families.

Housing Affordability

Overview

Housing affordability can be measured in a number of different ways. In this chapter, benchmarks were selected to provide an indication of both home ownership and home rental affordability. For more information on housing and real estate in Thurston County, please refer to [The Profile](#). For more information on dwelling units, land development, and population, please refer to Chapters II and III of this report.

**Housing
Affordability**

List of Benchmarks found in this chapter

Benchmark 22:

Median Household Income Keeps Pace with Average Housing Sale Price

Benchmark 23:

The Housing Affordability Index for First Time Buyers Increases and the Affordability Index for All Buyers Remains Above 100

Benchmark 24:

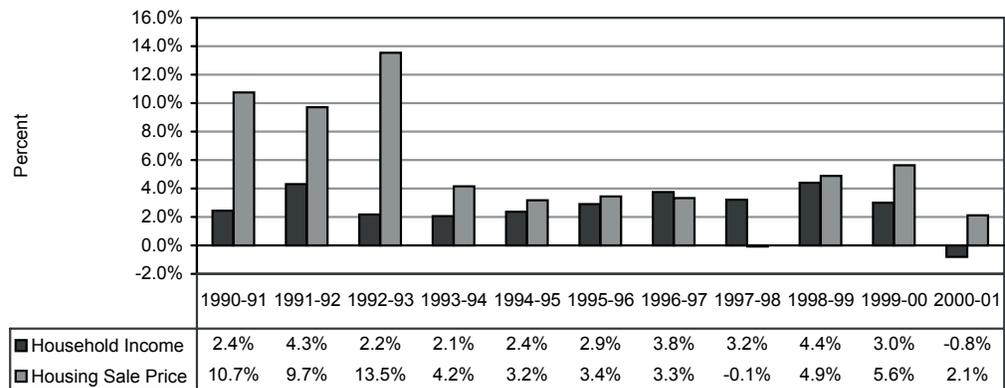
The Apartment Vacancy Rate Remains at or Around Five Percent

Benchmark 22

Median Household Income Keeps Pace with Average Housing Sale Price

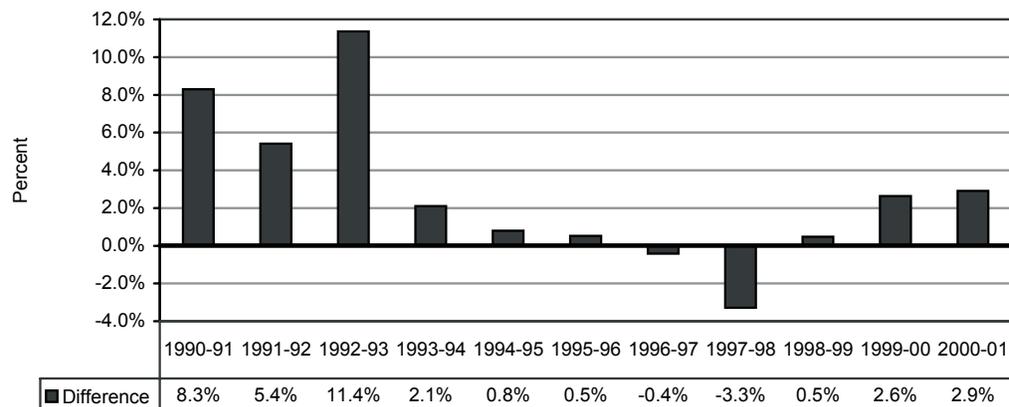


**Figure VII-1
Annual Change in Median Household Income Compared to Annual Change in Average Single-Family Home Sale Price, Thurston County, 1990-2001**



Source: Tables VII-1 and VII-2

**Figure VII-2
Difference Between Annual Change in Medium Household Income and Annual Change in Single-Family Home Sale Price, Thurston County, 1990-2001**



Source: Tables VII-1 and VII-2

Assessment:
In the last two years, the rise in home sale price has outpaced the rise in median household income.

Key Observations:

- Between 1994/95 and 1998/99, the difference between the average annual change in median household income and average annual change in home sale price was less than one percent, indicating that income was keeping pace with home sale prices. Recently, this trend has reversed. see Figure VII-2
- In the last two years home sale prices have outpaced the rise in median household income. For the time being, the impact of this on households has been mitigated by low interest rates over this same time period. see Figure VII-2

For Further Information:

See Tables VII-1 to VII-2, Chapters III and IV of The Profile, and Chapters II and III of this report.

Benchmark 22**Median Household Income Keeps Pace with Average Housing Sale Price**

see Table VI-2

see Table VI-2

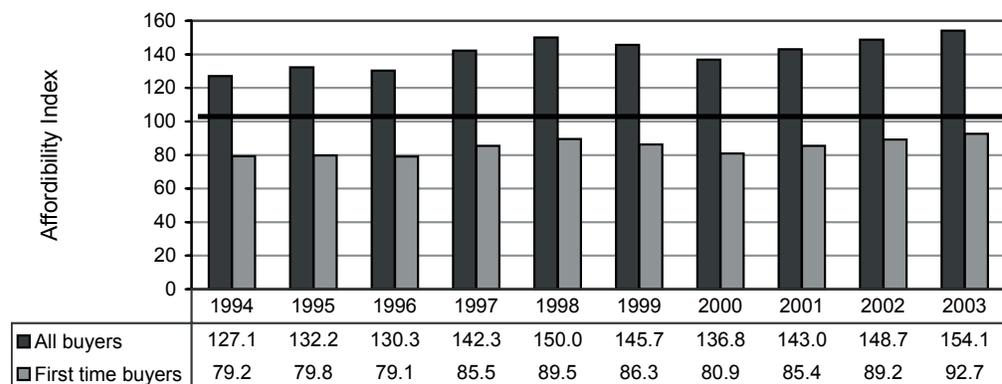
Benchmark 23

The Housing Affordability Index for First Time Buyers Increases and the Affordability Index for All Buyers Remains Above 100

Source: Table VII-3



**Figure VII-3
Housing Affordability Index for Thurston County, 1994-2003**



Assessment:

The housing affordability index has remained above 100 for all buyers, and has generally increased since 1994 for first time buyers

Key Observations:

- Since 1994, home ownership is becoming more affordable in Thurston County. This may, in part, reflect a decrease in interest rates that has occurred over this time.
- Affordability index measures the ability of a typical family to make payments on median price resale home, assuming a 20 percent down payment. All loans are assumed to be 30-year loans. It is assumed 25 percent of income can be used for principal and interest payments. An index of 100 indicates that a balance exists between the family's ability to pay and housing costs. A higher index indicates that housing is more affordable; a lower index indicates that housing is less affordable.

For Further Information:

See Table VII-3, Chapter III of The Profile, and Chapters II and III of this report.

Benchmark 23

The Housing Affordability Index for First Time Buyers Increases and the Affordability Index for All Buyers Remains Above 100

see Table VII-3

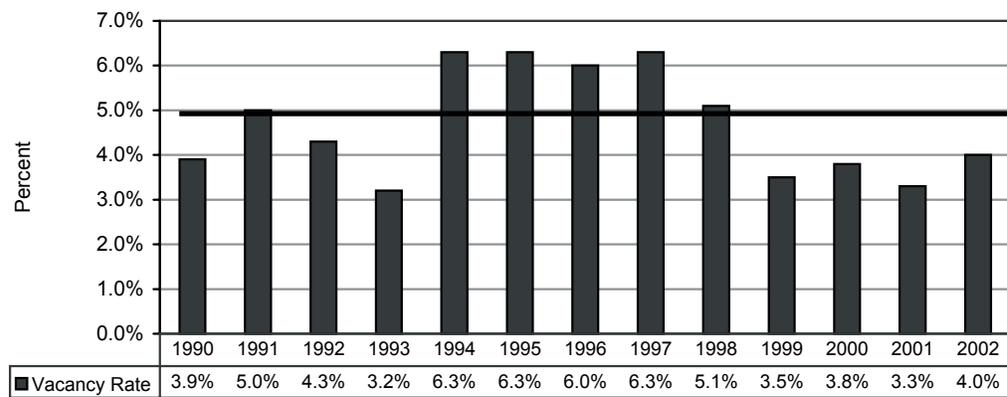
Benchmark 24

**The Apartment
Vacancy Rate
Remains at or
Around Five
Percent**



Outlook:
sunny, overall positive results

**Figure VII-4
Apartment Vacancy Rate 1990-2002**



Source: Table VII-4

Benchmark 24**The Apartment
Vacancy Rate
Remains at or
Around Five**

Assessment:
The apartment vacancy rate in Thurston County has remained below five percent

Key Observations:

- Low vacancy rates suggest that pressure on existing apartment units is high, thereby driving up rents. High rates suggest that there is extra capacity on the market, which might drive down rents. A vacancy rate of five percent is generally regarded as a normal market rate.
- New apartment complexes generally add a large number of new units to the market in a short period of time, making vacancy rates fluctuate greatly.
- The drop in vacancy rates in the period between 1999 and 2001 reflects a slowdown in new rental units coming on the market. The vacancy rate increased slightly in 2002, showing that the market is responding to consumer demand.

see Table VII-4

For Further Information:

See Table VII-4, Chapter III of The Profile, and Chapters II and III of this report.

Housing Affordability

Additional Information

Trends in Housing Stock, Income, and Tenure, 1990 and 2000

Comparisons between Census 1990 and Census 2000 highlight trends in housing value, rents, and income.

The median value for owner occupied housing (for specified housing units) has outpaced growth in median household income at the county-wide level. This reflects a decrease in buying power for consumers. At the same time, gross rent (rent including utilities) has increased less than median income, reflecting increased buying power in the rental market (Table VII-5). It should be noted that increases in housing values reflect both increasing values of the existing housing stock, as well as the value of new homes built in the last decade. The income data reflects increases in wages paid for existing jobs, as well as wages for new jobs.

These trends are consistent with trends in housing sales (Tables VII-1 and VII-II) where the increase in housing value has outpaced income consistently throughout the last decade.

At the same time the housing affordability index, produced annually by the Washington Center for Real Estate Research, shows that housing has become more affordable since 1994 in Thurston County (Table VII-3). This may reflect a decrease in interest rates that occurred throughout the 1990s, making home ownership more affordable.

The amount of households owning a home has increased slightly in the last decade, from 65 percent in 1990, to 67 percent in 2000 (Table VII-5). This also may reflect a drop in interest rates during the mid- to late-1990s that made home ownership possible for many renters.

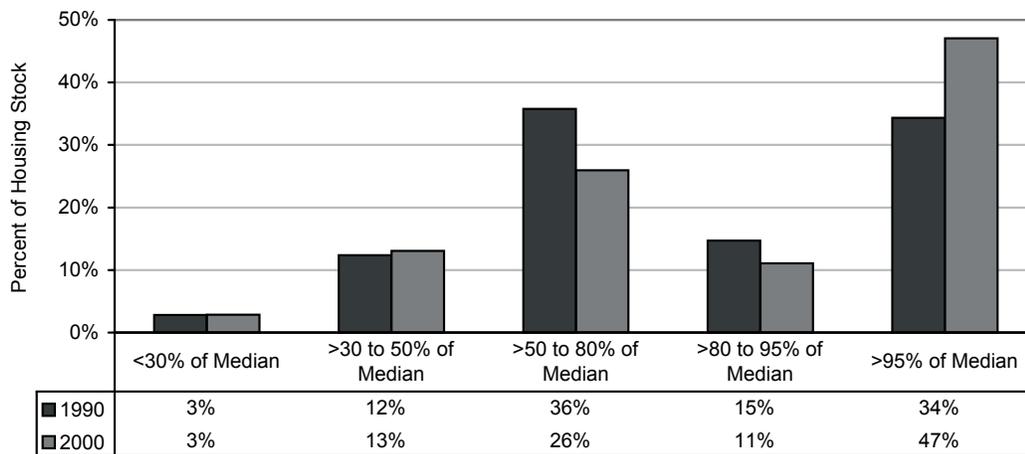
Specified Housing Stock by Income Levels, 1990 and 2000

In order to determine the housing stock available for households at various income levels, it is first necessary to determine income thresholds, as well as estimate available funds for paying rent or a mortgage. Standard HUD ranges are listed in Table VII-6. These income ranges are relative to the Thurston County median family income, and therefore do not need to be adjusted for inflation.

Table VII-7 gives an estimate of the specified housing stock by income range, for 1990 and 2000. While the percentage of housing available in the less than 30 percent of median, and 30 to 50 percent of median ranges, has held relatively steady over the last 10 years, there has been a notable decrease in housing stock in the mid-ranges of affordability, notably housing affordable to

those households earning between 50 to 95 percent of the median household income for Thurston County (Figure VII-5). This reflects in large part the gap between gains in income and rising home values. In this analysis, interest rates are held constant between 1990 and 2000. As noted on the tables, the estimate of specified owner housing stock excludes mobile homes, houses with a business or medical office, houses on 10 or more acres, and housing units in multifamily buildings. It therefore represents an incomplete picture of the total housing stock available.

**Figure VII-5:
Comparison of Housing Stock Availability by Income Ranges,
1990 and 2000**



Note: Rentals exclude "for rent" units. Owner data excludes "for sale" units. Owner data is only for specified housing units. Specified owner-occupied housing units include 1-family houses on less than 10 acres without a business or medical office on the property. The data for "specified units" exclude mobile homes, houses with a business or medical office, houses on 10 or more acres, and housing units in multifamily buildings.

Source: 1990 and 2000 Census, TRPC.

**Estimate of Affordable Housing Stock and Households by
Income Category, 2000**

The 2000 Census provided the first estimate of total housing stock, including vacant and "for rent" or "for sale" housing units, and mobile homes. The information on housing value, gross rent, and income was collected on the long form of the census. For this reason the data are estimated from a sample and computed statistically for the entire population

Table VIII-8 provides a comparison of the total number of dwelling units affordable (where housing costs are no more than 30 percent of gross income) and households, by HUD income categories. It should be noted that this table is not intended to show a one-to-one relationship between the number

Housing Affordability

of households within an income range and the number of units available with the same income range. Rather, the table shows an estimate of the amount of housing stock which would be affordable to people in these HUD income categories, provided the units were available. In reality, many of these units are not available to the people in these income categories. A large number of units in the mid-to-lower ranges are rented or owned by those who are spending less than 30 percent of their income for these units. These units “buy-down” and effectively lower their housing costs while at the same time reducing the inventory available for those with no other options.

Table VII-9 provides an estimate of the minimum unmet need for affordable housing by jurisdiction by income range. The unmet need is calculated for all those households falling at or below a specified HUD income level. For instance, the unmet need for homes for the county as a whole for those households earning 50 percent or less than the median household income is 2,036 dwellings, or 12 percent of those households falling within that income range. This includes those households that earn 30 percent or less of the median household income.

This is not to say that only 2,036 households in Thurston County are paying more than they can afford (according to State and Federal standards) for housing. In reality, due to the reasons outlined above, the likelihood of that is remote. These calculations, therefore, should be thought of as the minimum unmet need for each jurisdiction. Thirty percent of the median household income in Thurston County was \$14,093 in 1999. Thirty percent of this amount, calculated to a monthly value, means that these households in this range have \$352 or less to spend on housing for housing to be considered affordable. This would allow them to purchase a home worth almost \$40,000, if they could cover \$800 in closing costs, and pay \$4,000 in a down payment, or pay \$352 in rent and utilities (Table VIII-6).

Issues and Challenges

One challenge Thurston County faces is to maintain a healthy economy, while at the same time keeping the price of housing affordable. Data from the 2000 Census and the Housing Affordability Index reflect that the cost of housing in Thurston County is affordable for those households earning 80 percent or more of the median household income, or \$37,580 a year. The price of housing, however, is increasing at a faster pace than the rise in income.

For those families earning 50 percent or less than the median household income, finding housing that is affordable continues to be a challenge.

Table VII-1
Average Sale Price of Single-Family Homes and Median Household Income,
Thurston County, 1990-2001

Year	County Median Household Income	Average Sale Price of a Single-family Home			
		Thurston County	Olympia	Tumwater	Lacey
1990	\$33,570	\$91,568	\$95,300	\$101,840	\$78,622
1991	\$35,133	\$101,403	\$110,686	\$113,180	\$85,673
1992	\$36,675	\$111,258	\$119,247	\$121,456	\$98,600
1993	\$37,766	\$126,318	\$137,281	\$139,175	\$114,906
1994	\$39,016	\$131,574	\$139,632	\$138,737	\$123,225
1995	\$39,976	\$135,744	\$176,404	\$142,510	\$121,275
1996	\$41,507	\$140,406	\$157,562	\$146,616	\$125,314
1997	\$43,778	\$145,082	\$165,302	\$145,694	\$127,952
1998	\$45,817	\$144,963	\$159,974	\$142,505	\$129,245
1999	\$46,975	\$152,030	\$169,804	\$152,119	\$136,150
2000	\$48,388	\$160,606	\$174,397	\$160,956	\$142,209
2001	\$47,998	\$163,989	\$175,627	\$167,846	\$142,664

Sources: Olympic Multiple Listing Service; Washington State Office of Financial Management

Table VII-2
Rate of Change in Average Sale Price of Single-Family Homes and
Median Household Income, Thurston County, 1990-2001

Year	Change in County Median Household Income	Change in Average Sale Price of a Single-family Home			
		Thurston County	Olympia	Tumwater	Lacey
1990-91	4.7%	10.7%	16.1%	11.1%	9.0%
1991-92	4.4%	9.7%	7.7%	7.3%	15.1%
1992-93	3.0%	13.5%	15.1%	14.6%	16.5%
1993-94	3.3%	4.2%	1.7%	-0.3%	7.2%
1994-95	2.5%	3.2%	26.3%	2.7%	-1.6%
1995-96	3.8%	3.4%	-10.7%	2.9%	3.3%
1996-97	5.5%	3.3%	4.9%	-0.6%	2.1%
1997-98	4.7%	-0.1%	-3.2%	-2.2%	1.0%
1998-99	2.5%	4.9%	6.1%	6.7%	5.3%
1999-00	3.0%	5.6%	2.7%	5.8%	4.5%
2000-01	-0.8%	2.1%	0.7%	4.3%	0.3%
Average Ann. Rate of Change 1990-2001	3.1%	4.7%	5.4%	3.7%	5.1%

Sources: Olympic Multiple Listing Service; Washington State Office of Financial Management

Table VII-3
Housing Affordability Index and Mortgage Rates, Thurston County, 1990-2003

First Quarter	All Buyers Index	First Time Buyers Index	Mortgage Rate
1990	N/A	N/A	10.05%
1991*	N/A	N/A	9.90%
1992	N/A	N/A	8.55%
1993	N/A	N/A	8.29%
1994	N/A	N/A	7.22%
1995	124.3	76.8	8.12%
1996	135.1	81.5	7.34%
1997	131.6	79.9	7.72%
1998	145.6	87.4	7.22%
1999	155.0	92.5	6.95%
2000	136.8	80.9	8.02%
2001	143.0	85.4	7.21%
2002	148.7	89.2	6.71%
2003	154.1	92.7	5.90%

Sources: Data for 1995-2002 are from Washington Center for Real Estate Research. Data for 1990-1994 are from American Chamber of Commerce Researcher Association.

Explanation: Housing Affordability Index measures the ability of a middle income family to carry the mortgage payments on a median price home. When the index is 100 there is a balance between the family's ability to pay and the cost. Higher indexes indicate housing is more affordable. First-time buyer index assumes the purchaser's income is 70% of the median household income. Home purchased by first-time buyers is 85% of area's median price. All loans are assumed to be 30 year loans. All buyer index assumes 20% downpayment. First-time buyer index assumes 10% down. It is assumed 25% of income can be used for principle and interest payments.

Table VII-4
Apartment Rents and Vacancies in Thurston County, 1990-2002

Year	Average Rent	Vacancy Rate
1990	\$408	3.90%
1991	\$451	5.00%
1992	\$470	4.30%
1993	\$501	3.20%
1994	\$523	6.30%
1995	\$515	6.30%
1996	\$533	6.00%
1997	\$547	6.30%
1998	\$550	5.10%
1999	\$556	3.50%
2000	\$578	3.80%
2001	\$588	3.30%
2002	\$662	4.00%

Source: Dupre + Scott Apartment Advisors

**Table VII-5
Trends in Housing Costs, Income and Housing Tenure, 1990 to 2000**

	Thurston County	Bucoda	Lacey	Olympia	Rainier	Tenino	Tumwater	Yelm
Selected Owner Occupied Home Values and Renter Occupied Gross Rent								
1990 Median value	79,700	36,700	71,700	77,800	52,300	50,500	72,700	56,400
2000 Median value	145,200	70,000	133,200	143,500	113,500	97,900	141,000	117,400
Percent Increase	82%	91%	86%	84%	117%	94%	94%	108%
1990 Median gross rent	460	408	473	456	431	322	442	379
1990 Median gross rent	655	583	677	624	613	504	686	625
Percent Increase	42%	43%	43%	37%	42%	57%	55%	65%
Income								
Median household income in 1989	30,976	20,167	29,426	27,785	24,500	19,545	29,326	19,053
Median household income in 1999	46,975	34,286	43,848	40,846	42,955	34,526	43,329	39,453
Percent Increase	52%	70%	49%	47%	75%	77%	48%	107%
Tenure								
1990 Owner occupied	40,226	127	3,896	7,777	245	329	2,257	277
1990 Renter occupied	21,924	67	3,826	7,174	89	167	2,023	190
1990 Percent Owner occupied	65%	65%	50%	52%	73%	66%	53%	59%
1990 Percent Renter occupied	35%	35%	50%	48%	27%	34%	47%	41%
2000 Owner occupied	54,364	156	6,892	9,458	438	431	2,750	736
2000 Renter occupied	27,261	56	5,479	9,224	98	148	2,875	479
2000 Percent Owner occupied	67%	74%	56%	51%	82%	74%	49%	61%
2000 Percent Renter occupied	33%	26%	44%	49%	18%	26%	51%	39%

Sources: 1990 Census and 2000 Census, SF1 and SF3 files

Table VII-6
Income Thresholds Used in Affordable Housing Needs Assessment,
Thurston County, 2000 and 1990

Thurston County Median Household Income in 1999 was \$46,975				Home Ownership	
2000 HUD Income Ranges	Household Income	Gross Monthly Income	30% of Gross for Housing	Cash on Hand	House Value
30% of median	\$14,093	\$1,174	\$352	\$4,000	\$39,081
50% of median	\$23,488	\$1,957	\$587	\$6,000	\$61,723
80% of median	\$37,580	\$3,132	\$940	\$10,000	\$99,484
95% of median	\$44,626	\$3,719	\$1,116	\$10,000	\$116,709

Thurston County Median Household Income in 1989 was \$30,976				Home Ownership	
1990 HUD Income Ranges	Household Income	Gross Monthly Income	30% of Gross for Housing	Cash on Hand	House Value
30% of median	\$9,293	\$774	\$232	\$2,500	\$24,125
50% of median	\$15,488	\$1,291	\$387	\$4,000	\$40,511
80% of median	\$24,781	\$2,065	\$620	\$6,000	\$64,885
95% of median	\$29,427	\$2,452	\$736	\$8,000	\$77,898

Explanation: Assumptions for Home Ownership - Buyer will pay 8.2 percent interest on a 30 mortgage, Buyer is able to make a down payment roughly equivalent to 10 percent of the selling price. Closing costs are \$800. Property tax is 1.484 percent. Insurance is 0.5 percent. Mortgage calculated through LendingTree.com.

Note: Federal and state guidelines have established the threshold of affordability at 30 percent of gross income devoted to housing costs (rent and/or homeownership costs plus utilities.)

Source: 1990 and 2000 Census, TRPC

Table VII-7
Comparison of Housing Stock for Selected Single-Family Units by Income
Categories, 1990 and 2000

HUD Income Ranges	Number of Dwelling Units Available in Range							
	Rentals		Owner		Total (Dwellings)		Total (Percent)	
	1990	2000	1990	2000	1990	2000	1990	2000
Bucoda								
<30% of Median	2	2	19	11	21	13	12%	7%
>30 to 50% of Median	23	27	45	33	68	60	40%	34%
>50 to 80% of Median	40	25	31	55	71	80	42%	46%
>80 to 95% of Median	0	0	4	3	4	3	2%	2%
>95% of Median	3	2	3	15	6	17	3%	10%
Total	68	56	101	118	169	174	100%	100%
Lacey								
<30% of Median	89	224	10	13	99	237	1%	2%
>30 to 50% of Median	871	1,720	41	37	912	1,757	13%	15%
>50 to 80% of Median	1,880	2,634	996	683	2,876	3,318	42%	29%
>80 to 95% of Median	483	621	791	1,039	1,274	1,660	19%	15%
>95% of Median	458	504	1,170	3,923	1,628	4,427	24%	39%
Total	3,781	5,703	3,009	5,695	6,790	11,398	100%	100%
Olympia								
<30% of Median	552	747	34	30	587	776	4%	5%
>30 to 50% of Median	1,839	3,100	297	80	2,135	3,180	16%	18%
>50 to 80% of Median	3,614	4,262	1,755	938	5,370	5,199	39%	30%
>80 to 95% of Median	558	466	1,144	1,027	1,702	1,493	13%	9%
>95% of Median	590	509	3,220	6,051	3,810	6,560	28%	38%
Total	7,153	9,084	6,451	8,125	13,604	17,209	100%	100%
Rainier								
<30% of Median	1	5	7	4	9	9	4%	2%
>30 to 50% of Median	20	42	20	5	40	47	17%	11%
>50 to 80% of Median	56	39	91	77	147	117	63%	27%
>80 to 95% of Median	4	11	22	97	26	108	11%	25%
>95% of Median	3	3	8	146	11	149	5%	35%
Total	84	101	148	329	232	430	100%	100%

Note: Rentals exclude “for rent” units. Owner data excludes “for sale” units. Owner data is only for specified housing units. Specified owner-occupied housing units include only 1-family houses on less than 10 acres without a business or medical office on the property. The data for “specified units” exclude mobile homes, houses with a business or medical office, houses on 10 or more acres, and housing units in multifamily buildings.

Source: 1990 and 2000 Census, TRPC

Table VII-7, continued
Comparison of Selected Housing Stock for Selected Single-Family Units
by Income Categories, 1990 and 2000

HUD Income Ranges	Number of Dwelling Units Available in Range							
	Rentals		Owner		Total (Dwellings)		Total (Percent)	
	1990	2000	1990	2000	1990	2000	1990	2000
Tenino								
<30% of Median	38	38	12	3	50	41	11%	8%
>30 to 50% of Median	75	84	61	14	136	97	31%	19%
>50 to 80% of Median	46	42	133	165	179	207	41%	41%
>80 to 95% of Median	0	2	34	61	34	63	8%	12%
>95% of Median	5	1	32	97	37	97	8%	19%
Total	164	166	272	339	436	505	100%	100%
Tumwater								
<30% of Median	88	146	10	6	99	152	3%	3%
>30 to 50% of Median	560	788	54	1	614	790	16%	15%
>50 to 80% of Median	919	1,739	548	224	1,467	1,963	39%	38%
>80 to 95% of Median	185	195	399	326	584	522	16%	10%
>95% of Median	246	163	755	1,606	1,001	1,769	27%	34%
Total	1,998	3,032	1,767	2,164	3,765	5,196	100%	100%
Yelm								
<30% of Median	47	102	2	10	50	112	11%	10%
>30 to 50% of Median	53	130	16	7	69	137	16%	13%
>50 to 80% of Median	76	220	143	134	219	354	50%	33%
>80 to 95% of Median	16	37	37	131	53	168	12%	16%
>95% of Median	10	14	36	292	46	306	11%	28%
Total	202	503	235	574	437	1,077	100%	100%
Thurston County								
<30% of Median	1,176	1,777	213	220	1,389	1,997	3%	3%
>30 to 50% of Median	5,157	8,685	999	391	6,156	9,076	12%	13%
>50 to 80% of Median	10,679	13,659	7,102	4,387	17,781	18,046	36%	26%
>80 to 95% of Median	2,065	2,049	5,247	5,646	7,312	7,696	15%	11%
>95% of Median	2,339	1,760	14,719	30,986	17,058	32,746	34%	47%
Total	21,415	27,930	28,280	41,631	49,695	69,561	100%	100%

Note: Rentals exclude “for rent” units. Owner data excludes “for sale” units. Owner data is only for specified housing units. Specified owner-occupied housing units include only 1-family houses on less than 10 acres without a business or medical office on the property. The data for “specified units” exclude mobile homes, houses with a business or medical office, houses on 10 or more acres, and housing units in multifamily buildings.

Source: 1990 and 2000 Census, TRPC

**Table VII-8
Estimate of Affordable Housing Stock and Households by Income Category by Jurisdiction, 2000**

HUD Income Ranges	Number of Dwelling Units Available in Range			Number of Households within Income Range	Number of Dwelling Units Available in Range			Number of Households within Income Range
	Rentals	Owner	Total		Rentals	Owner	Total	
Bucoda								
0-30% of Median	5	25	30	26				91
>30 to 50% of Median	27	41	67	43				75
>50 to 80% of Median	25	67	92	36				139
>80 to 95% of Median	0	5	5	16				54
Remainder	2	23	25	74				212
Total	59	160	219	196	166	437	603	571
Tenino								
0-30% of Median					38	39	77	
>30 to 50% of Median					84	44	127	
>50 to 80% of Median					42	177	219	
>80 to 95% of Median					2	71	73	
Remainder					1	106	107	
Total					166	437	603	
Lacey								
0-30% of Median	224	444	668	1,438	146	221	367	557
>30 to 50% of Median	1,720	232	1,952	1,407	788	47	835	684
>50 to 80% of Median	2,634	848	3,482	2,293	1,739	334	2,072	1,122
>80 to 95% of Median	621	1,180	1,801	1,115	195	384	579	475
Remainder	504	4,384	4,888	6,098	163	1,796	1,959	2,749
Total	5,703	7,088	12,791	12,351	3,032	2,781	5,813	5,587
Turnwater								
0-30% of Median					146	221	367	
>30 to 50% of Median					788	47	835	
>50 to 80% of Median					1,739	334	2,072	
>80 to 95% of Median					195	384	579	
Remainder					163	1,796	1,959	
Total					3,032	2,781	5,813	
Olympia								
0-30% of Median	763	355	1,118	3,020	102	40	142	204
>30 to 50% of Median	3,484	285	3,769	2,353	130	20	150	145
>50 to 80% of Median	4,428	1,122	5,550	3,361	220	196	416	217
>80 to 95% of Median	466	1,103	1,569	1,411	37	146	183	112
Remainder	526	6,712	7,238	8,528	14	374	388	528
Total	9,667	9,577	19,244	18,673	503	776	1,279	1,206
Yelm								
0-30% of Median					102	40	142	
>30 to 50% of Median					130	20	150	
>50 to 80% of Median					220	196	416	
>80 to 95% of Median					37	146	183	
Remainder					14	374	388	
Total					503	776	1,279	
Thurston County Total								
0-30% of Median					1,777	3,004	4,781	8,901
>30 to 50% of Median					8,685	1,735	10,420	8,334
>50 to 80% of Median					13,659	6,761	20,420	14,408
>80 to 95% of Median					2,049	6,847	8,897	6,898
Remainder					1,760	36,842	38,603	43,124
Total	101	449	550	506	27,930	55,190	83,120	81,666

Note: This table is not intended to show a one-to-one relationship between the number of households within an income range and the number of units available within that same income range. In reality, a large number of units in the mid-to-lower ranges are rented or owned by those who are spending less than 30 percent of their income for these units. These units “buy-down” and effectively lower their housing costs while at the same time reducing the inventory available for those with no other options.

Explanation Regarding Rentals: Gross Rent - SF3 H62 Universe: Specified renter-occupied housing units; Rent Asked - SF3 H59 Universe: Specified vacant-for-rent housing units. Owner: Value for all Owner-Occupied Housing Units SF3 H84 Universe: Owner-Occupied Housing Units; Price Asked - SF3 H87 Universe: Specified vacant-for-sale-only housing units. Households: Household Income in 1999 - SF3 P52 Universe: Households.

Source: 2000 Census, TRPC

**Table VII-9
Estimate of Affordable Housing Needs by Jurisdiction, 2000**

HUD Income Ranges	Minimum ¹ Unmet Need for Affordable Housing		HUD Income Ranges	Minimum ¹ Unmet Need for Affordable Housing	
	Dwellings	% of HHs		Dwellings	% of HHs
Bucoda			Tenino		
30% or less of Median	0	0%	30% or less of Median	14	16%
50% or less of Median	0	0%	50% or less of Median	0	0%
80% or less of Median	0	0%	80% or less of Median	0	0%
95% or less of Median	0	0%	95% or less of Median	0	0%
Lacey			Tumwater		
30% or less of Median	770	54%	30% or less of Median	190	34%
50% or less of Median	225	8%	50% or less of Median	39	3%
80% or less of Median	0	0%	80% or less of Median	0	0%
95% or less of Median	0	0%	95% or less of Median	0	0%
Olympia			Yelm		
30% or less of Median	1,902	63%	30% or less of Median	62	30%
50% or less of Median	486	9%	50% or less of Median	56	16%
80% or less of Median	0	0%	80% or less of Median	0	0%
95% or less of Median	0	0%	95% or less of Median	0	0%
Rainier			Thurston County Total		
30% or less of Median	42	71%	30% or less of Median	4,121	46%
50% or less of Median	13	14%	50% or less of Median	2,036	12%
80% or less of Median	0	0%	80% or less of Median	0	0%
95% or less of Median	0	0%	95% or less of Median	0	0%

¹See discussion in text for further information.

Source: 2000 Census, TRPC

Note: The number of units available over the HUD ranges is not calculated because the assumption that people pay 30 percent of their income on housing is invalidated by census housing statistics for the higher income ranges. Unmet need is calculated for the cumulative total of HUD income range, or all of those households falling at or below income threshold. This is a departure from the previous table, where data area shown only for the income interval.

HHs = households

I. INTRODUCTION

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 which were 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. The answers to these questions will help communities in our county determine if they are developing the way they want to develop.

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In 1997, the state Growth Management Act (GMA) was amended to add a new growth monitoring section. Meeting the requirements of this new legislation came to be commonly known as the “buildable lands program” because of the law’s emphasis on determining how much buildable land is in the urban areas of the six counties (Clark, King, Kitsap, Pierce, Snohomish, and Thurston) affected by these amendments to GMA. Two purposes for the program are written into the original legislation. The first is to “determine whether a county and its cities are achieving urban densities within urban growth areas.” The legislation requires that this information be provided in a review and evaluation report every five years. This is the first such report.

The second purpose of the legislation flows from the results of the data in the report. If the data shows that urban densities are not being achieved in the urban growth area, then the affected jurisdiction must “identify reasonable measures other than adjusting growth areas” which will have the likelihood of increasing densities in the future.

In addition to determining whether urban densities are currently being achieved, the legislation also requires that a land supply analysis be completed to determine if there is an adequate land supply for future growth within adopted urban growth boundaries. The land supply analysis must be completed for residential, commercial, and industrial lands and is a process of comparing Land Supply to Land Demand.

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In 1996 Thurston Regional Planning Council (TRPC) published a Regional Benchmarks Report, the first monitoring of the region's progress toward achieving the 13 goals of GMA. The intent of the Benchmarks Program was to help Thurston County jurisdictions measure results of their efforts in achieving the goals and policies in their comprehensive plans. The first report had a total of 14 benchmarks in the areas of Growth, Transportation, Economy, Environment, and Housing.

In 1997, when GMA was amended to include the "buildable lands" provisions, it was necessary to shift the focus of TRPC's growth management monitoring to meeting the requirements of the buildable lands legislation. In 2000 a second Regional Benchmarks Report, Regional Benchmarks for Thurston County, Tracking Growth Management Policy Implementation, was published. The 2000 Benchmarks Report included the first release of data generated by the Buildable Lands Program. New benchmarks were added, bringing the total number to 25 benchmarks in the 2000 report.

The Regional Benchmarks Report continues to be the primary GMA monitoring report for the Thurston County region. Three new Benchmarks in the key areas of Residential Land Supply, Achieved Net Residential Density, and Commercial/Industrial Land Supply have been developed as the reporting mechanism for meeting buildable lands requirements in a way which is consistent with our region's already established GMA monitoring program.

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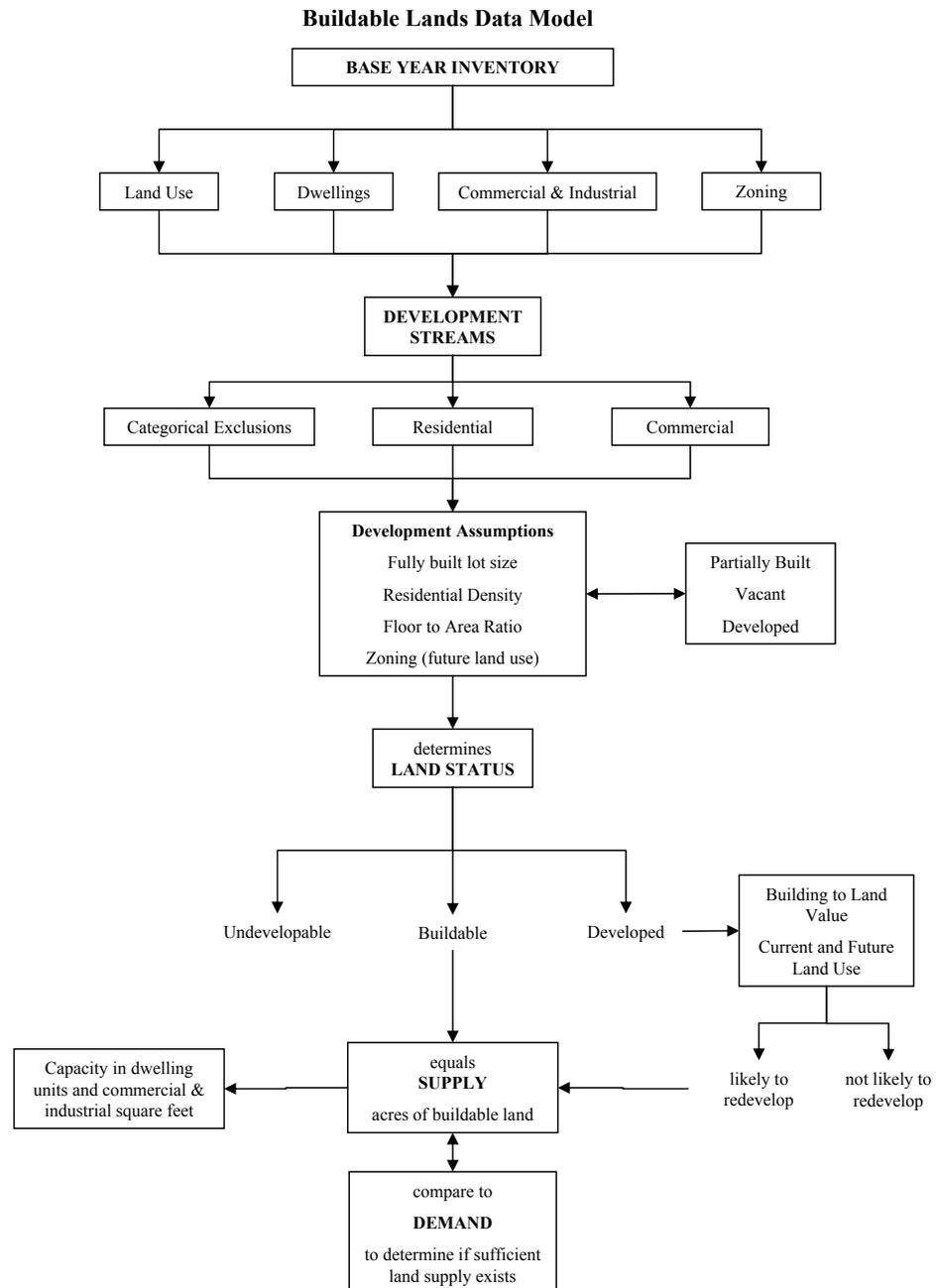
IV. OVERVIEW OF PROCESS

Buildable land supply was determined in a four step, multi-year process: (Figure 1):

- Develop a base year inventory;
- Develop and apply development assumptions;
- Determine land status; and
- Evaluate land supply.

Figure 1

Overview of process to determine buildable land supply in Thurston County.



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V. BASE YEAR DATA COLLECTION

A. Overview

The Thurston County Buildable Lands Project Team determined that an appropriate base year for data collection was the year 2000. This date was approximately five years after the adoption of all of the Comprehensive Plans by Thurston County jurisdictions.¹ The actual date of data collection was calibrated to April 1, 2000, to correlate with the 2000 Census, and other TRPC data products such as the Small Area Population Estimates and the 1998/1999 Population and Employment Forecast.

The basic components in this section of the program were collected using the following:

- parcel-level data provided by the Thurston County Assessor (Assessor's database);²
- building permits information provided by the Bucoda, Lacey, Olympia, Rainier, Tenino, Yelm, and Thurston County Current Planning and Building Departments; and
- additional sources of information such as the telephone book to conduct site-specific research of problem areas.

Data were compiled into three basic categories that contained information on:

- commercial and industrial buildings;
- residential dwelling units; and
- land use.

B. Commercial and Industrial Buildings

TRPC prepares Population and Employment Forecasts every three to five years to support local planning efforts. The employment forecast provides county projections of employment in 36 sectors based on two-digit Standard Industrial Classification (SIC) codes.³ Small area forecasts are generated in 13 employment categories. To provide consistency between the existing employment information gathered for the most recent Population and Employment Forecast, and the Buildable Lands Project, commercial and industrial buildings were categorized into Employment Sectors, Sub-Sectors and building type (Table 1).

¹Actual dates of adoption varied from July 1994 to April 1995, depending on the jurisdiction.

²TRPC staff worked closely with the Thurston County Assessor's office to obtain parcel-specific information on both commercial and residential properties.

³Population and Employment Forecast for Thurston County, Final Report, October, 1999. Thurston Regional Planning Council.

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Table 1: Employment sectors, sub sectors, and buildings.

PRIMARY SECTOR	EMPLOYMENT SECTOR	EMPLOYMENT SUB SECTOR	BUILDING OR STRUCTURE	
RESOURCES	AGRICULTURE	N/A	OFFICE	
		N/A	STORAGE/INDUSTRIAL	
		N/A	STORE	
	FISHING	N/A	OFFICE	
		N/A	STORAGE/INDUSTRIAL	
		N/A	STORE	
	FORESTRY	N/A	STORAGE/INDUSTRIAL	
	MINING	N/A	OFFICE	
		N/A	STORAGE/INDUSTRIAL	
	COMMERCIAL SECTOR			
	RETAIL	AUTO		OFFICE
				PARKING
SHOWROOM				
FOOD			STORAGE/INDUSTRIAL	
			STORE	
			PARKING	
			STORAGE/INDUSTRIAL	
OTHER			STORE	
			SUPERMARKET	
			PARKING	
SERVICES, FINANCE, INSURANCE AND REAL ESTATE	CONSUMER SERVICES		SHOPPING CENTER	
			STORAGE/INDUSTRIAL	
			STORE	
			BOWLING ALLEY	
			CASINO	
			CHURCH	
			COLLEGE	
			GOLF COURSE	
			HORSE ARENA	
			HOTEL	
MEDICAL SERVICES			LIBRARY	
			MINI WAREHOUSE	
			MOTEL	
			OFFICE	
			PARKING	
			RECREATION	
			SCHOOL	
			SERVICE	
			SKATING RINK	
			STORAGE/INDUSTRIAL	
PRODUCER SERVICES, FINANCE, INSURANCE, AND REAL ESTATE			TANK	
			THEATER	
			OFFICE	
AND REAL ESTATE			PARKING	
			STORAGE/INDUSTRIAL	
			OFFICE	
AND REAL ESTATE			PARKING	
			STORAGE/INDUSTRIAL	
			OFFICE	

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Table 1 continued: Employment sectors, sub sectors and buildings.

PRIMARY SECTOR	EMPLOYMENT SECTOR	EMPLOYMENT SUB SECTOR	BUILDING OR STRUCTURE
GOVERNMENT SECTOR			
	FEDERAL GOVERNMENT	N/A	OFFICE
		N/A	POST OFFICE
		N/A	STORAGE/INDUSTRIAL
	STATE GOVERNMENT	EDUCATION	COLLEGE LIBRARY SCHOOL STORAGE/INDUSTRIAL
		NOT EDUCATION	JAIL OFFICE PARKING SERVICE STORAGE/INDUSTRIAL
	LOCAL GOVERNMENT	EDUCATION	OFFICE SCHOOL STORAGE/INDUSTRIAL
		NOT EDUCATION	AIRPORT COMMUNITY CENTER FIRE STATION HYDROELECTRIC DAM JAIL LIBRARY OFFICE PARKING RECREATION RESERVOIR SERVICE STORAGE/INDUSTRIAL TANK
INDUSTRIAL SECTOR			
	MANUFACTURING AND WHOLESALE	MANUFACTURING	OFFICE PARKING STORAGE/INDUSTRIAL
		WAREHOUSE	PARKING STORAGE/INDUSTRIAL
	TRANSPORTATION, COMMUNICATIONS AND UTILITIES	COMMUNICATIONS	CELL TOWER OFFICE STORAGE/INDUSTRIAL
		TRANSPORTATION	OFFICE PARKING STORAGE/INDUSTRIAL STORE
		UTILITIES	OFFICE PARKING RESERVOIR SEWAGE TREATMENT STORAGE/INDUSTRIAL

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The underpinnings of the building table came from information provided by the Thurston County Assessor's Office. Fields in this table included: ground floor square feet, number of stories, year built, and effective year build (renovated) as well as clues on the building category and employment sector found in the fields bldg_type (building type) (Table 2), use_category (Table 3), and owner name.

Table 2: Possible building types assigned to Assessor building records.

Building Type Code	Description	Building Type Code	Description
10	SVC-STATION	362	AUTOMTV-CNTR
15	FOOD-BOOTH	365	PARKG-STRUCT
20	CAR-WASH	366	GRG-BSM-PARK
100	APARTMENTS	367	GRG-UNDERGND
120	FRATERNITY	370	POST-OFFICE
130	DORMITORY	380	MAINT-HANGAR
140	HOTEL	385	STRGE-HANGAR
145	HOTEL-COMMRL	390	T-HANGAR
150	RETIRE-HOME	400	OFFICE
160	CITY-CLUB	410	MEDICAL-OFC
165	HEALTH-CLUB	420	GOVRNMT-BLDG
170	CLUB-HOUSE	425	JAIL
180	COUNTRY-CLUB	430	GENRL-HOSPTL
190	ORTUARY	435	SURGICAL-CTR
195	GRP-CARE-HOM	440	VETER-MEDICL
200	RESTAURANT	450	DISPENSARY
205	FAST-FOOD-RS	460	CNVLSNT-HSPT
210	DEPT-STORE	470	LIBRARY
220	RETAIL-STORE	480	BANK
230	MARKET	490	FIRE-STATION
235	CONVENC-STOR	495	FIRE-STA-VOL
240	DISCOUNT-STR	500	SCHOOL
245	DAIRY-SALES	510	CLASSROOM
260	LAUNDROMAT	520	MLT-PRPS-SCH
265	REGN-SHOP-CN	530	MANUAL-ARTS
270	BARBER-SHOP	540	GYMNASIUM
275	CMTY-SHOP-CN	550	SHOWER-BLDG
280	NBHD-SHOP-CN	555	RESTROOM-BLD
285	ENCLOSD-MALL	560	DAY-CARE-CTR
286	MALL-BSM-STG	600	CHURCH
290	COVERED-MALL	610	AUDITORIUM
295	OPEN-MALL	620	THEATER
300	IND-BLDG-R/E	630	FRATRNL-BLDG
305	INDUST-MFCTR	640	SKATING-RINK
320	STORAGE-WHSE	645	HAND/RAQUET
325	DISTRIB-WHSE	650	BOWLING-ALLEY
330	TRANSIT-WHSE	660	INDOOR-TENNS
335	MINI-WHSE	700	MOTEL
340	ARMORY	800	MULT-RESDNCE
345	LOFT	810	MULT-SR-CITZ
350	COM-GRGE-SVC	110	RECTORY
355	COM-GRGE-STG	255	TAVERN
360	AUTO-SHWROOM	256	COCKTAIL-LOUNGE
361	MINI-LUB-GRG	358	AUTO-DEALERSHIP

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Use Category Code	Description
0	GAS STATION
1	APT/HOTEL
2	RETAIL STORE
3	INDUSTRIAL
4	OF/MD/BNK/GT
5	SCHOOL
6	CHURCH/THEAT
7	MOTEL
8	DWELLING

Once a preliminary employment sector and building descriptor were assigned to each building record using the `bldg_type` and `use_category` fields, the records were examined individually to determine if further refinement was necessary. Problem areas identified in this process were:

- Government Buildings
- Government Property leased to commercial/industrial sector
- Warehouses attached to an employment sector such as Retail
- Nursing homes and retirement homes (as they also contained residents)
- Mobile Home Parks
- Mixed Use Buildings
- Gas Stations and Service Stations and
- Other miscellaneous buildings

The tools used to do further research included: field work, phone calls, additional information contained in our Geographic Information System (GIS), and reviewing parcel specific data with 1996 and 2000 aerial photographs.

1. Government Buildings

Government buildings are defined as those owned by a government entity. This represents only a portion of the building space used by government employees, as they can be housed in a variety of lease or government-owned buildings, including those in office parks, retail strip malls, and small stores. Those buildings residing on parcels owned by a Federal, State, or Local government were identified either through their owner name, or by having a government exempt status.

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Due to the widely differing levels of employees per square foot for the various types of government buildings, (schools vs. office complexes), special attention was given to identifying individual buildings and their uses.

2. Government Property Leased to Commercial/Industrial Sector

The Port of Olympia property presented another unique situation. The Port owns property in various locations throughout the county, mainly around Budd Inlet and the airport in Tumwater. The Port leases their property to various commercial and industrial private sector employers. It was therefore necessary to evaluate each building on Port property to assess whether it formed an employment site for public or private sector employees.

3. Warehouse Attached to an Employment Sector such as Retail Trade

Warehouses and storage buildings were difficult to categorize. Storage buildings are often attached to Retail or Service industries. In this capacity, they act as a supporting building with a very low employee to square foot ratio. Warehouses can also support Wholesale or Manufacturing activities. Therefore, the identification of a building as a warehouse or storage building did little to clarify the employment sector of associated employees. Assumptions were made to associate warehouses and storage buildings with correct employment sectors that involved 1) identifying the employment sector of other buildings located on the parcel; 2) identifying the employment sector of buildings on adjacent parcels.

4. Nursing Homes, Retirement Homes, and Jails

Nursing homes, retirement homes, and jails are sites of both residents and employees. The first two are considered commercial land uses with an employment sector of medical services. The residents are either counted as residing in Group Quarters or multifamily dwellings, depending on the level of service and classification by the U.S. Bureau of the Census (for consistency). The physical building that contained both residents and employees was removed from the building database as the square footage was felt to be misleading. Employees will be assigned based on the number of residents. The Panorama City retirement community, which contains a variety of mixed-use parcels with community centers, medical facilities, duplexes, and nursing homes, was categorized in a separate research effort.

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5. Apartment Complexes

The Assessor tracks apartment complexes in their commercial database. For the purposes of the Buildable Lands project, apartment complexes are considered to have a residential land use. The number of employees providing support to apartment complexes will be estimated based on the number of units in a complex.

Incomplete information was available from the Assessor's Database on the number of dwellings in apartment complexes. Apartment complexes were individually researched using a variety of methods from viewing them on aerial photographs to count the number of buildings to telephoning apartment managers. Parking lots that were part of an apartment complex but residing on separate parcels were categorized as "residential parking."

6. Mixed Use Buildings

The mixed-use designation in the Buildable Lands project refers to those buildings or parcels that contain a significant amount of residential and commercial activity. These properties are generally located in the urban core and consist of Retail or Service sector activity on the first floor of a building, with multifamily dwellings located above. Other mixed-use buildings include small stores with one or two attached dwelling units. Buildings that have dominant commercial use with one dwelling unit are not considered mixed use. Retirement homes, nursing homes and jails were not considered a mixed-use activity.

7. Gas Stations and Service Stations

Gas stations and service stations should be categorized into the employment sectors *retail*, *auto* and *consumer services*, respectively. As they were indistinguishable in the Assessor's database, they were generally classified as *retail*, *auto*.

8. Other Miscellaneous Buildings

Other building categories were isolated and researched independently if they were felt to either: 1) contain a large number of employees on one site; or 2) represent a fairly unique employee to square foot ratio. These included:

- Major retail grocers;
- Bowling alleys;
- Skating rinks;
- Theaters.

Approximately 1,500 records required additional research.

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Documentation**C. Residential Dwelling Units**

The Assessor's office provided TRPC staff with two tables containing information on residential dwelling units:

- A total residential table containing building styles listed in Table 4;
- A table containing manufactured homes.

Buildings were designated as single-family or multifamily based on the following classification scheme (Table 4).

Table 4: Buildable lands classification of residential units based on Assessor building style code.

Building Style Code	Description	Percent of Total	Buildable Lands Code
AF	A-FRAME	0.1%	Single-family
BN	BUNGALOW/CRAFTSMAN	0.0%	Single-family
CA	CABIN	1.2%	Single-family
CL	COLONIAL	0.0%	Single-family
CN	CONDO	2.3%	Multifamily
CO	CONVENTIONAL	87.0%	Single-family
CP	CUSTOM	0.0%	Single-family
DU	DUPLEX	3.3%	Multifamily
EB	EARTH-BANKED	0.0%	Single-family
FP	FOURPLEX	0.6%	Multifamily
GD	GEODSIC-DOME	0.0%	Single-family
LH	LOG HOME	0.5%	Single-family
MD	MODULAR	0.0%	Manufactured Home
MN	MANSION	0.0%	Single-family
OT	OTHER	0.6%	Single-family ¹
RN	RAMBLER	0.4%	Single-family
SE	SPLIT-ENTRY	0.3%	Single-family
SL	SPLIT-LEVEL	3.6%	Single-family
TE	TOWNHS-END	0.0%	Multifamily
TR	TRIPLEX	0.1%	Multifamily
VT	VICTORIAN	0.0%	Single-family

Note: ¹These records were researched individually and may have been assigned codes other than single-family.

The following problem areas were addressed:

- Manufactured homes tracked as personal property;
- Administrative parcels; and
- Mobile home parks.

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1. Manufactured Homes Tracked as Personal Property

Many manufactured homes are tracked as personal property by the Assessor's Office, but contain a field to indicate the physical parcel on which they reside. This field was used to provide a link between the parcel GIS coverage and the Assessor's record.

2. Administrative Parcels

Administrative parcels are a method employed by the Assessor's Office to attach two different tax rates to the same parcel. For instance, many seniors are entitled to tax exemptions on their homes and on the first acre of their land. The remaining acres are taxed at another rate. Acting much like personal property, administrative parcels do not have a physical parcel delineation in the GIS coverage. As much as was feasible, administrative parcels were linked to the parcel GIS coverage with owner names, site addresses, or other clues.

3. Mobile Home Parks

While the Assessor's database does contain some information on mobile homes located in mobile home parks, a visual verification was necessary to determine that:

- The number of mobile homes was correct;
- The distribution of mobile home was correct between two or more adjacent parcels that comprised the mobile home park; and
- Any parcels used for parking or open space were classified appropriately.
- Mobile home park information was verified visually by overlaying park boundaries on aerial photographs.

D. Built-Date Confirmation

The cut-off date of building data collection was calibrated to April 1, 2000, to correlate with the 2000 Census, and other TRPC data products such as the Small Area Population Estimates and the 1998/1999 Population and Employment Forecast. This posed a problem, as there was no way to determine from the Assessor's records the built-date of the building.

TRPC staff maintain building permit databases for both residential and commercial/industrial building permits. To verify that a building was built by April 1, 2000, the building permits were checked against the building records table.

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1. Commercial/Industrial Table

Each commercial permit, 1996 through end 1999, was checked against the commercial/industrial building table (Figure 2). Based on permit information, building records were either verified, updated, or added. No building records were deleted from the building record table as Assessor records were only current through 1999.

2. Residential Building Table

Due to the large number of residential records in both the building permits database and the residential building table, only records flagged as built after 1997 were checked. The goal was to accomplish two things:

- Remove any building records that were built after the April 1, 2000 base line; and
- Add new building records where appropriate.

Figure 2: Commercial building update application.

Update Building Permits to (New) Commercial Building Table

Building Permit information from Commercial DataBase

Building Permit Information

Parcel ID: 38400000103

Status:

Type: Service and Repair Stations

Preliminary Type: Retail

Square Feet: 6,000

Number of Stories:

Units:

Narrative: RGAR, valuation \$1,000

More Parcel Info. Landuse Info. Exit

Permit ID: 13

Issue Date: 9/9/96

Issuing Jurisdiction: County

Add: 78403 Old Hwy 99 SW

City: Olympia State: WA

Zip: 98501

Existing Records in 2000 Commercial Buildings Database (from Assessor)

Auto #	parcel_id	stories	sq_ft	yr_built	eff_year	Land Use	Employment
2507	38400000103	1	5,000	1993	1993	COMMERCIAL/INDUSTRIAL	MANUFACTURING
2508	38400000103	1	6,000	1995	1995	COMMERCIAL/INDUSTRIAL	MANUFACTURING
9677	38400000103		6,000			COMMERCIAL/INDUSTRIAL	SERVICES

Choose what to do with this permit record

skip for now flag for deletion exists already add to database Unmatched

Review Status: REVIEWED, ADDED TO ASS. DB

Advance to Next Unreviewed Record:

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The following steps were employed:

Step 1: Flag all building permits with built-out date after April 1, 2000. In order to adjust between the permit issue date and presumed built-out date, the following lag times were employed⁴:

- Single-family home building permits (2 months)
All Jurisdictions: issued after *January 31, 2000*.
- Multifamily home building permits Olympia, Olympia UGA, Tumwater, Tumwater UGA, Lacey, Lacey UGA: issued after *July 30, 1999*.
County, Tenino, Rainier, Yelm, Bucoda: issued after *December 31, 1999*.
- Manufactured housing permits
All Jurisdictions: issued after *March 30, 2000*.

Flagged building permit records were matched by parcel and dwelling unit to records in the residential building table. Residential buildings presumed built after April 1, 2000 were removed from the building table.

Records flagged as demolitions in the building permit table were also removed from the building table.

Step 2: Compare residential building records and building permits records that matched by parcel number (same parcel number in each table) for the same number and type of dwelling units. Updated the building record table as needed.

Step 3: All building records that did not match to a building permit were compared to the master assessor's database (ATIM) to ensure that the contained valid parcel numbers. Only seven records did not match.

Step 4: The permit records that did not match the ATIM or the building record table were researched, using air photos and additional GIS information, to attempt to find a better parcel number. Many building records were found to reside on retired parcels (as a new subdivision is formed under the long plat process, the master parcel is retired, and many new parcels are created). Many parcel numbers were corrected in this process.

Step 5: The corrected building permits records were checked against the ATIM and entire building table. The records that did not match the building table and matched the ATIM were added to the table.

⁴ Further details can be found in the Population and Employment Forecast for Thurston County, Final Report. October, 1999. Thurston Regional Planning Council.

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Outcome:

- 41 updated building records;
- 252 building records removed;
- 123 building records added.

E. Land Use

A master table was constructed containing land use information for each parcel in the county. Land Use was broken into primary and secondary land use codes (Table 5).

Classifying the Land Use characteristics was a multi-step process that relied on a multitude of different clues. The steps are outlined below:

Step 1: Assign a preliminary land use code for water, open space, natural resources, and roads and rights-of-way to parcels that appear to have relatively consistent information in a variety of fields carried in the Assessor's database (Table 3). Fields that gave relevant information were:

- Property Type (prop_type) (Table 6)
- Code2 (use_code) (Table 7)
- Property Subtype (prop_subtype) (Table 8)

Step 2: Assign a residential land use code to those parcels that have been flagged as residential in the residential building database (Figure 4). The following methodology was used to identify residential parcels:

- All parcels containing multifamily dwellings (duplexes, triplexes, residential condos, and most apartment buildings) are considered residential;
- Those parcels containing a single-family dwelling and having an Assessor's code2 of 11 – single-family residential are considered to be residential; and Parcels containing mobile home parks are considered residential.

Other parcels containing dwelling units but that did not necessarily have a residential land use included the following:

- Parcels containing group quarters are considered commercial or government/institutions depending on ownership;
- Apartments located above commercial floor space are considered mixed-use;
- Single-family homes and manufactured homes that were not

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Table 5: Land use codes used in the Buildable Lands project.

Generalized Land Use	Detailed Land Use
Water Bodies	Water Bodies
Parks, Preserves, & Open Space	Federal Parks State Parks Local Parks Subdivision Open Space Other Open Space (private) Natural Areas and Preserves (public) Wildlife Refuges & Wildlife Areas
Natural Resources (Public and Private)	Forestry (private) Forestry (public) Agriculture Mining
Roads, Railroads, & Rights-of-Way	Roads & Rights of Way Railroads
Government/Institutional	Federal - Military Federal - Civilian State Local Religious Institutions & Private Schools Cemeteries Tribal
Utilities	Utilities
Residential	Dwellings Parking only
Commercial/Industrial	Commercial/Industrial
Mixed Use	Mixed Use
Undeveloped Land	Undeveloped Government Undeveloped Private

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Figure 3: Preliminary classification module developed in Microsoft ACCESS.

Land Use Code	Property Type Description	Code2	Property Subtype Description	Current Use
	Agriculture	11 - SINGLE-UNIT	Apartments	
	Agriculture	11 - SINGLE-UNIT	Residences	Y
	Agriculture	18 - OTHER-RESID	Residences	
3.3	Agriculture	81 - AG-NOT-CU	Chicken/Fryers	
3.3	Agriculture	81 - AG-NOT-CU	Residences	
3.3	Agriculture	81 - AG-NOT-CU	Egg Production	
3.3	Agriculture	82 - AGRICULTURAL	Residences	
3.3	Agriculture	82 - AGRICULTURAL	Government Exempt	
3.3	Agriculture	82 - AGRICULTURAL	Egg Production	
3.3	Agriculture	82 - AGRICULTURAL	Comm. Land Parcels	
3.3	Agriculture	83 - CUR-USE-AG		Y
3.3	Agriculture	83 - CUR-USE-AG	Chicken/Fryers	Y
3.3	Agriculture	83 - CUR-USE-AG	Nurseries	Y
3.3	Agriculture	83 - CUR-USE-AG	Offices	Y
3.3	Agriculture	83 - CUR-USE-AG	Residences	
3.3	Agriculture	83 - CUR-USE-AG	Residences	Y
3.3	Agriculture	83 - CUR-USE-AG	Egg Production	Y

Table 6: Possible property types assigned to Assessor tax parcels.

Property Type Code	Description
AGR	Agriculture
BLD	Building-only
COM	Commercial
IND	Industrial
LND	Land-only
MIX	Mixed
MOB	Mobile-home
PER	Personal
RES	Residential
OPR	Operating-Prop
CNC	Condo-Common
CNU	Condo-Unit
SHL	Shore-lands
TDL	Tide-lands
OYL	Oyster-Lands
MNR	Mineral-Rights

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Table 7: Possible Use Codes assigned to Assessor tax parcels.

Use Code	Description	Use Code	Description
11	Single Unit	55	Retail - Auto
12	Two-to-Four Unit	56	Retail - Apparel
13	Five-Plus Unit	57	Retail - Furniture
14	Hotel/Condo	58	Retail - Eating
15	Mobile Home Park	59	Retail - Other
16	Hotel/Motel	61	Service - Finance
17	Institutional Lodging	62	Service - Personal
18	Other Residential	63	Service - Business
19	Vacation Home	64	Service - Repair
21	Manufacturing - Food	65	Service - Professional
22	Manufacturing - Textile	66	Service - Construction
23	Manufacturing - Apparel	67	Service - Governmental
24	Manufacturing - Lumber	68	Service - Education
25	Manufacturing - Furniture	69	Service - Miscellaneous
26	Manufacturing - Paper	71	Cultural Activity
27	Manufacturing - Printing	72	Public Assembly
28	Manufacturing - Chemical	73	Amusement
29	Manufacturing - Petroleum	74	Recreational
30	Manufacturing - Rubber	75	Resort - Camping
31	Manufacturing - Leather	76	Park
32	Manufacturing - Stone/Glass	79	Other Cultural
33	Manufacturing - Printed Material	81	Agricultural Not Cultivated
34	Manufacturing - Fabricated Material	82	Agricultural
35	Manufacturing - Instrumentation	83	Cur - Use - Agriculture
39	Manufacturing - Other	84	Fishing
41	Trans - Railroad	85	Mining
42	Trans - Motor	86	Not Assigned
43	Trans - Aircraft	87	Classified Forest Land
44	Trans - Marine	88	Designated Forest Land
45	Trans - Highway	89	Resource - Protected
46	Trans - Parking	91	Undeveloped Land
47	Communication	92	Non-Commercial Forest
48	Utilities	93	Water Area
49	Trans - Other	94	Cur - Use - Open
51	Wholesale	95	Cur - Use - Timber
52	Retail - Hardware	96	Commercial/Industrial Land
53	Retail - General Merchandise	98	Historic Designated Properties
54	Retail - Food	99	Other - Undeveloped

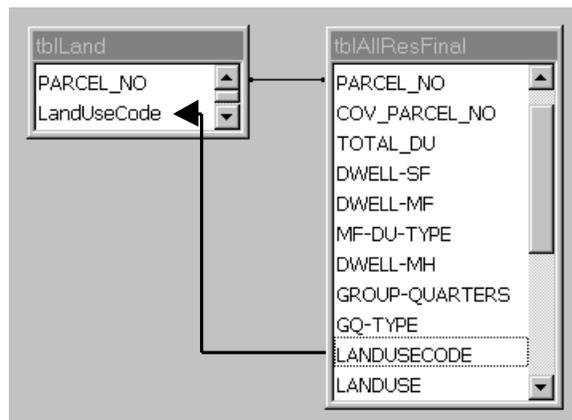
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Table 8: Possible property sub types assigned to Assessor tax parcels.

Property Subtype Code	Description	Property Subtype Code	Description
21	Apartments	52	Fish Farms
22	Assisted Care	53	Hanger/Condo
23	Banks	54	Car Washes
24	Chicken/Fryers	55	Mineral Extraction
26	Convenience Stores	56	Recreation
27	Day Care Nurseries	58	Services
28	Eating Establishments	59	Dairy
29	Exempt Right of Ways	60	Private Camps
30	Grocery Full Service	61	Dedicated Green Belt
31	Motel/Hotel	62	Panorama "O" Values
32	Mini Storage	63	Comm. Land Parcels
33	Nurseries	64	Industrial Land Parcels
34	Retail Stores	65	Retirement Community
35	Service Stations	66	Brewery
36	Shopping Centers	67	Truck Stop
37	Taverns	68	Schools
38	Golf Courses	69	Cemeteries
39	Mobile Home Parks	70	Mixed Use
40	RV Parks	71	Residential Condo
41	Vehicle Retail	72	Marine Services
42	Warehouses	73	Lt-Gen-Purpose-Bldg
43	Offices	74	Boathouses
44	Duplexes/Fourplexes	75	Group Homes
45	Residences	76	Agriculture
46	Government Exempt	77	Forestry
47	Port Property	95	Misc. Industrial
48	Airport	96	Operating Property
49	Auto Garages	97	Marinas
50	Churches	98	Tidelands
51	Egg Production	99	Miscellaneous

Figure 4: Relationships between residential building table and land use table.



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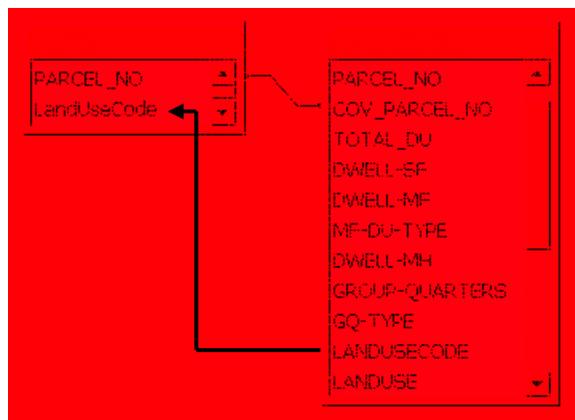
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located on parcels with a residential land use code were not assigned a land use code at this time as they could be located on a variety of resource or commercial/industrial use parcels.

Step 3: For administrative reasons, many parcels are assigned a parcel number that does not exist physically in the parcel GIS coverage. For these parcels, a relationship was found between the parcel number and the GIS coverage parcel number (cov_parcel_no) (Figure 5). In a manner similar to Step 2, the land use code was updated for these records.

Condominiums presented another unique situation. Condominium dwelling units are owned by individuals, while the property on which they reside is shared. For this reason, the Assessor's office assigns a "master" parcel number to the shared property, and individual parcel numbers are assigned to "dummy" parcels representing each individual dwelling unit (Figure 6). Both the "master" and "dummy" parcels are coded as residential.

Figure 5: Updating parcels based on coverage parcel number.

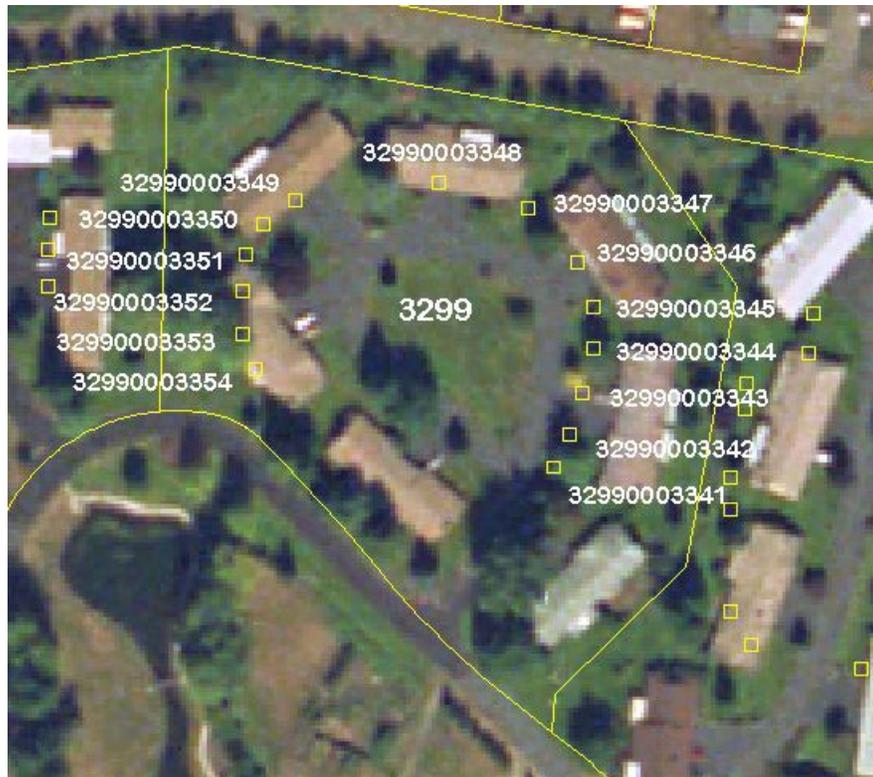


Step 4: This step involved updating the land use table with information drawn from the commercial buildings table. The employment and building classification, in addition to other clues such as owner name, helped form the basis of the classification. Built features other than buildings, such as parking lots, tennis courts, and golf courses, were also included in the commercial buildings table. The information was transferred first, by linking the tables on parcel_id, and then by linking them on the link_parcel_id, to accommodate administrative parcels (Figure 7).

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Figure 6: How condominiums are handled by the Thurston County Assessor's office.



Step 5: Government lands that did not have commercial buildings on them (and were therefore classified for land use in a previous step) were pulled into a separate table and coded individually. This table was then used to update the land use table (Figure 8).

Step 6: Parcels that were coded with a residential land use code by the Assessor's office, but did not have a residential dwelling unit identified on them, and had a building value of less than 20,000 (which could represent a shed or garage), were coded as *undeveloped*.

Step 7: Railroads and utilities that remained uncoded were identified and assigned a code based on their owner_name.

Step 8: A table of all the "leftover" parcels was isolated and coded by hand based on available information in various fields carried by the Assessor.

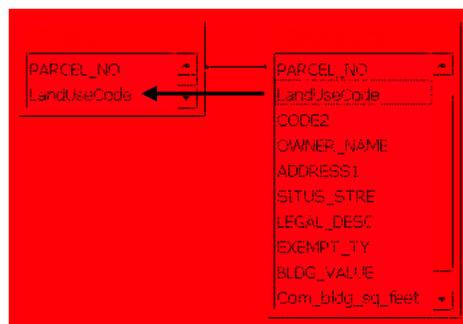
The final step in creating the land use table was to update it with information on commercial, industrial, and residential buildings. Information on residential dwelling units was transferred into five fields:

- DWELL_SF
- DWELL_MF
- DWELL_MH
- GROUP QUARTERS
- GQ_TYPE

Figure 7: Relationship between the commercial building table and the land use table.



Figure 8: Relationship between the government lands table and the land use table.



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In addition, a new field containing the total number of dwelling units (TOTAL_DU) was added to the land use table (Figure 9).

Limited information from the commercial buildings table was also used to populate various fields in the land use table for the purpose of verification. These included the number of commercial buildings, total number of commercial square footage on a parcel, and the number of square feet on parcels broken out by employment sector. The commercial buildings table will continue to carry building specific information.

F. Verification Process

In order to verify that the land use and building codes were valid, TRPC staff engaged in a comprehensive proofing process. September 2000 color aerial photographs were purchased for the entire county at three foot resolution. These photos provided the base for a series of 131 maps covering the entire land area of Thurston County. Information on land use and buildings was overlain on this base. Maps were produced in three scales:

- Urban areas: 1 inch to 300 ft (covers one third of a township, or nine sections)
- Suburban and rural areas: 1 inch to 500 ft (covers one quarter of a township, or four sections)
- Resource areas: 1 inch to 1,000 ft (covers one township)

TRPC staff worked in teams to systematically verify and update records.

Figure 9: Preliminary structure of the land use table.

Land Use	Land Status	Category
Water Bodies	Undevelopable	Critical Areas & Open Space
Federal Parks	Developed	Public Lands & Facilities
State Parks	Developed	Public Lands & Facilities
Local Parks	Developed	Public Lands & Facilities
Subdivision Open Space	Developed	Critical Areas & Open Space
Other Open Space (private)	Developed	Critical Areas & Open Space
Natural Areas and Preserves (public)	Developed	Public Lands & Facilities
Wildlife Refuges & Wildlife Areas	Developed	Public Lands & Facilities
Forestry (public)	Developed	Public Lands & Facilities
Roads & Rights of Way	Developed	Public Lands & Facilities
Railroads	Developed	Public Lands & Facilities
Federal - Military	Developed	Public Lands & Facilities
Cemeteries	Developed	Commercial
Utilities	Developed	Industrial
Residential Parking only	Developed	Residential

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Documentation**VI. DEVELOPMENT STREAMS****A. Overview**

The base year inventory of land use, residential dwelling units, commercial and industrial structures, combined with zoning districts, provided information for further analysis of current development status and future development potential. Parcels were analyzed in three development streams based on their base year characteristics and their future land use. These three streams were: 1) categorical exclusions; 2) residential; and 3) commercial. A description of each development stream follows.

B. Categorical Exclusions

Categorical exclusions were defined as those types of land uses or zoning districts that were incompatible with future residential or commercial development.

Land uses that were categorically excluded for further development included critical areas and open space, selected public lands and facilities, as well as several select categories in commercial, industrial, and residential land uses (Table 9).

Zoning provided an additional screen to exclude other areas from future development. Development is restricted in 15 zoning districts across Thurston County jurisdictions by designation as: 1) Critical Areas and Open Space; 2) Resource lands; 3) Public Lands and Facilities; or 4) cemeteries.

Almost 4 percent, or 3,549 tax parcels out of a total of 92,290, passed through this development stream.

C. Residential

The residential development stream was used to analyze the land status of almost 90 percent of tax parcels in Thurston County. Tax parcels that were passed through this analysis stream included the following:

- Parcels that were not sent through the Categorical Exclusion development stream;
- Parcels in residential zoning that were categorized with a land use of residential dwellings, private forestry, agricultural, mining, or undeveloped private land, and did not contain any commercial or industrial buildings or structures;
- Parcels in residential or mixed use zoning that were

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Documentation**Table 9: Categorical exclusions by land use, including land status and category**

Land Use	Land Status	Category
Water Bodies	Undevelopable	Critical Areas & Open Space
Federal Parks	Developed	Public Lands & Facilities
State Parks	Developed	Public Lands & Facilities
Local Parks	Developed	Public Lands & Facilities
Subdivision Open Space	Developed	Critical Areas & Open Space
Other Open Space (private)	Developed	Critical Areas & Open Space
Natural Areas and Preserves (public)	Developed	Public Lands & Facilities
Wildlife Refuges & Wildlife Areas	Developed	Public Lands & Facilities
Forestry (public)	Developed	Public Lands & Facilities
Roads & Rights of Way	Developed	Public Lands & Facilities
Railroads	Developed	Public Lands & Facilities
Federal - Military	Developed	Public Lands & Facilities
Cemeteries	Developed	Commercial
Utilities	Developed	Industrial
Residential Parking only	Developed	Residential

categorized with a land use of tribal governments; and

- Parcels in mixed use zoning that were categorized with a land use of residential dwellings.

D. Commercial

The commercial and industrial development stream was used to analyze the land status of approximately 6 percent of the parcels (6,137) within Thurston County. All parcels that did not pass through the categorical exclusions or residential development stream were analyzed through this development stream, and included:

- Parcels in commercial or industrial zoning districts;
- Parcels containing commercial or industrial buildings, regardless of zoning district;
- Any vacant parcels in mixed-use zoning districts.

VII. DEVELOPMENT ASSUMPTIONS**A. Residential Zoning Districts**

To allow for comparison between jurisdictions, residential zoning districts were categorized into nine groups based on zoned density in the Comprehensive Plans and the type of jurisdiction:

1. High multifamily (15-30+ dwellings per acre)

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2. Moderate multifamily (8-20 dwellings per acre)
3. Mixed residential (6-12 dwellings per acre)
4. Medium (3-8 dwellings per acre)
5. Low (1-4 dwelling per acre)
6. Very low (0-4 dwellings per acre)
7. Rural – 1 dwelling per 2 acres
8. Rural – 1 dwelling per 5 acres
9. Rural – 1 dwelling per 20 acres

Each of these groups was assigned two generalized development characteristics, a fully-built lot size assumption, and an average estimated density assumption.

B. Residential Fully-Built Lot Size Assumption

Many of the tax parcels in Thurston County are developed at densities lower than their current zoning density minimum. The fully-built lot size assumption acknowledges that some of these tax parcels will be available for future subdivision and subsequent development, and others will not experience more development, under the 20 to 25 year planning horizon.

The fully-built lot size assumption takes into account that the first dwelling on a site may not be placed in an optimum manner to allow for future subdivision. In general, high and moderate multifamily zoning districts were assigned a fully-built lot size of a quarter (0.25) acre. Moderate and low density zoning districts were assigned a fully-built lot size of a half (0.50) acre. Very low density zoning districts were assigned a fully-built lot size of one acre, and rural zoning districts were assigned a fully-built lot size commensurate with zoning (Table 10).

C. Residential Estimated Density Assumption

One of the key data elements used to determine land supply on vacant and partially built lots is an estimate of average development density of residential housing by zoning district. This estimate is used in two phases of the residential lands analysis, to 1) determine if a given tax parcel containing more than one residential unit and falling into a residential zoning category is full or partially full at the time of the assessment, and 2) determine the capacity of residential buildable land to hold additional dwellings.

In 1998, an estimate of average density was provided to TRPC by long range planners of the jurisdictions in Thurston County as input to the Population and Employment Forecast for future conditions. In early 2002, these estimates were refined and updated using newly available

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data from the Buildable Lands work program, to more accurately reflect current building trends.

One consideration in revising the average density for land supply modeling purposes was recognizing the difference in how individual jurisdictions apply zoned densities to actual development projects. Zoned densities, which generally represent a range of allowable densities within a zoning district, can be calculated as either a gross density or net density, depending on the jurisdictions. Net densities tend to set aside land for roads and critical areas when determining how many dwelling units can be placed on an individual tax parcel of land, while gross densities will use the entire area of the tax parcel in the calculation.

To model future conditions, an estimate of densities lying somewhere between gross and net is required. In the near term, estimates of net density should be closer to development conditions, as development will occur on lots that have already been subdivided under a platting process. These lots will represent true residential land, as critical areas and roads will have been set aside in open space and rights-of-way, respectively. Tax parcels that are not within subdivisions, but are already small enough to be developed without further subdivision, will be developed in both the near and long term at net densities. Other tax parcels will be subdivided in the future, prior to development. These tax parcels will likely develop at conditions more comparable to current net density estimates.

The residential development density assumptions were revised using two sources of additional data that provided insight into building trends for the period of activity after the passage of the Growth Management Act and adoption of Comprehensive Plans, when current zoning and development regulations were in place (Table 10).

The first source of information was a Subdivision Database, a complete database containing the boundaries and tax-parcel specific information on all long subdivisions that have been approved since 1970. This database provided the following key pieces of information:

- Subdivision Gross Residential Density, or the number of dwelling units per gross acre of subdivision, including rights-of-way and open space; and
- Subdivision Net Residential Density, or the number of dwelling units per acres in residential use.

Subdivision trends were collected for the period of time between 1995 and 1999. Vacant residential lots in subdivision were assumed to have development potential, and treated as such. Subdivision data were only available in select zoning districts in Thurston County due to the limited

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Table 10: Summary of development assumptions for residential zoning districts.

Jurisdiction	Name of Zone	Development Assumptions		95_00 Zoned Density (du/acre)	Actual Measurements of Density				
		Avg. Est. Density (du/acre)	Fully-Built Lot Size		1	2	3	4	5
1-High Multifamily (15-30+ du/acre)									
OLYMPIA	RESIDENTIAL MULTI-FAMILY (RM-24)	15	0.25	5-30	-	-	13.85	13.85	15.97
OLYMPIA	HIGH RISE MULTIFAMILY	15	0.25	18 or higher	-	-	-	-	-
TUMWATER	MULTI-FAMILY HIGH DENSITY RESIDENTIAL	15	0.25	14-29	-	-	-	-	-
TUMUGA	MULTI-FAMILY HIGH DENSITY RESIDENTIAL	15	0.25	14-29	-	-	-	-	-
2-Moderate Multifamily (8-20 du/acre)									
LACEY	HIGH DENSITY RESIDENTIAL	8	0.25	6-20	-	-	7.66	7.66	8.34
OLYMPIA	RESIDENTIAL MULTI-FAMILY (RM-18)	8	0.25	5-24	-	-	6.27	6.27	6.43
OLYMPIA	MIXED RESIDENTIAL (MR-10-18)	8	0.25	10-18	-	-	17.42	18.24	18.24
TUMWATER	MULTI-FAMILY MEDIUM DENSITY RESIDENTIAL	8	0.25	9-15	-	-	-	-	-
YELM	HIGH DENSITY RESIDENTIAL (R-14)	8	0.25	6-14	5.15	6.90	7.06	7.06	7.23
LACUGA	HIGH DENSITY RESIDENTIAL	8	0.25	6-20	-	-	-	-	-
OLYUGA	RESIDENTIAL MULTI-FAMILY (RM-18)	8	0.25	5-24	-	-	-	-	-
TUMUGA	MULTI-FAMILY MEDIUM DENSITY RESIDENTIAL	8	0.25	9-15	-	-	3.52	3.53	8.13
3-Mixed Residential (6-12 du/acre)									
LACEY	MODERATE DENSITY RESIDENTIAL	7	0.50	6-12	7.53	11.30	11.30	11.30	12.09
OLYMPIA	MANUFACTURED HOUSING PARK	7	0.00	5-12	-	-	-	-	-
OLYMPIA	MIXED RESIDENTIAL (MR-7-13)	7	0.50	7-13	-	-	-	-	-
OLYMPIA	TWO-FAMILY RESIDENTIAL (R-6-12)	7	0.50	6-12	4.57	6.62	5.96	5.96	6.26
TUMWATER	SINGLE-FAMILY MEDIUM DENSITY RESIDENTIAL	7	0.50	6-9	6.42	7.96	5.81	6.22	7.41
LACUGA	MODERATE DENSITY RESIDENTIAL	7	0.50	6-12	-	-	4.80	4.80	7.57
OLYUGA	MIXED RESIDENTIAL (MR-7-13)	7	0.50	7-13	-	-	-	-	-
OLYUGA	TWO-FAMILY RESIDENTIAL (R-6-12)	7	0.50	6-12	4.91	9.12	9.04	9.04	9.04
TUMUGA	SINGLE-FAMILY MEDIUM DENSITY RESIDENTIAL	7	0.50	6-9	-	-	1.20	1.21	4.11
COUNTY	RESIDENTIAL (R 4-16/1)	7	0.50	4-16	-	-	6.31	6.31	7.00

Note: Actual measurements of density: 1) Subdivision gross density; 2) Subdivision net density; 3) Recent building activity - net residential density of all residential acres, including critical areas; 4) Recent building activity - net residential density of all residential acres, excluding critical areas; 5) Recent building permit activity - net residential density of residential acres that are evaluated to be fully developed.

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for residential zoning districts.

Jurisdiction	Name of Zone	Development Assumptions		95_00 Zoned Density (du/acre)	Actual Measurements of Density				
		Avg. Est. Density (du/acre)	Fully-Built Lot Size		1	2	3	4	5
4-Medium (3-8 du/acre)									
LACEY	LOW DENSITY RESIDENTIAL (LD 3-6)	4	0.50	3-6	3.84	6.63	6.78	6.78	6.78
OLYMPIA	SINGLE FAMILY RESIDENTIAL (R-4-8)	4	0.50	4-8	3.88	6.49	4.06	4.60	5.45
TUMWATER	SINGLE-FAMILY LOW DENSITY RESIDENTIAL	4	0.50	4-7	2.99	4.78	2.70	2.97	5.03
YELM	MODERATE DENSITY RESIDENTIAL (R-6)	4	0.50	3-6	4.37	6.15	4.73	4.73	5.59
YELM	MASTER PLANNED COMMUNITY	4	0.50	3-6	3.48	6.56	3.32	3.32	6.54
LACUGA	MCALLISTER GEOLOGICALLY SENSITIVE AREA	4	0.50	3-6	-	-	0.42	0.42	3.69
LACUGA	LOW DENSITY RESIDENTIAL (LD 3-6)	4	0.50	3-6	3.92	5.71	4.08	4.16	5.31
OLYUGA	SINGLE FAMILY RESIDENTIAL (R-4-8)	4	0.50	4-8	3.22	4.73	2.60	2.71	4.12
TUMUGA	SINGLE-FAMILY LOW DENSITY RESIDENTIAL	4	0.50	4-7	2.27	3.61	0.97	1.25	3.73
COUNTY	RESIDENTIAL (R 3-6/1)	4	0.50	3-6	-	-	1.64	1.64	4.94
5-Low (1-4 du/acre)									
LACEY	LACEY HISTORIC NEIGHBORHOOD	3	0.50	0-2.5	-	-	-	-	-
LACEY	LOW DENSITY RESIDENTIAL (LD 0-4)	3	0.50	1-4	3.71	6.12	5.39	5.40	6.05
OLYMPIA	SINGLE FAMILY RESIDENTIAL (R-4)	3	0.50	1-4	-	-	-	-	-
OLYMPIA	RESIDENTIAL LOW IMPACT (RLI 2-4)	3	0.50	2-4	-	-	-	-	-
TUMWATER	RESIDENTIAL/SENSITIVE RESOURCE	3	0.50	2-4	1.83	5.23	3.48	3.48	4.51
YELM	LOW DENSITY RESIDENTIAL (R-4)	3	0.50	1-4	3.02	4.60	1.53	1.53	4.26
LACUGA	LOW DENSITY RESIDENTIAL (LD 0-4)	3	0.50	1-4	1.14	1.51	2.29	2.31	2.91
OLYUGA	RESIDENTIAL LOW IMPACT (RLI 2-4)	3	0.50	2-4	1.56	3.02	3.01	3.01	3.04
OLYUGA	SINGLE FAMILY RESIDENTIAL (R-4)	3	0.50	1-4	-	-	3.23	3.39	3.70
TUMUGA	RESIDENTIAL/SENSITIVE RESOURCE	3	0.50	2-4	-	-	-	-	-
RAINIER	HIGH DENSITY RESIDENTIAL	3	1.00	1-6	1.24	1.33	-	-	-
TENINO	MULTI-FAMILY RESIDENTIAL	3	1.00	1-12	-	-	3.49	3.49	3.49
TENINO	SINGLE FAMILY/DUPLEX RESIDENTIAL	3	1.00	1-12	2.10	2.10	4.19	4.19	4.19
COUNTY	RURAL RESIDENTIAL (RR 2/1)	3	1.00	0-2	-	-	3.59	3.59	3.70
COUNTY	SUBURBAN RESIDENTIAL (SR 4/1)	3	1.00	1-4	-	-	2.56	2.56	3.43

Note: Actual measurements of density: 1) Subdivision gross density; 2) Subdivision net density; 3) Recent building activity - net residential density of all residential acres, including critical areas; 4) Recent building activity - net residential density of all residential acres, excluding critical areas; 5) Recent building permit activity - net residential density of residential acres that are evaluated to be fully developed.

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Table 10 continued: Summary of development assumptions for residential zoning districts.

Jurisdiction	Name of Zone	Development Assumptions		95_00 Zoned Density (du/acre)	Actual Measurements of Density				
		Avg. Est. Density (du/acre)	Fully-Built Lot Size		1	2	3	4	5
6-Very Low (0-4 du/acre)									
BUCODA	RESIDENTIAL	1.25	1.00	0-1	1.22	1.30	1.45	1.50	1.50
RAINIER	LOW DENSITY RESIDENTIAL	1.25	1.00	0-1	-	-	0.95	0.95	1.01
RAINIER	MEDIUM DENSITY RESIDENTIAL	1.25	1.00	1-4	2.00	2.54	1.19	1.19	2.24
TENINO	SINGLE FAMILY RESIDENTIAL	1.25	1.00	1-8	-	-	-	-	-
COUNTY	MEDIUM DENSITY RESIDENTIAL	1.25	1.00	1-6	1.43	1.65	1.12	1.12	1.33
COUNTY	RURAL RESIDENTIAL (RR 1/1)	1.25	1.00	0-1	1.15	1.40	1.02	1.02	1.23
7-Rural-1du/2acres									
COUNTY	RURAL RESIDENTIAL (RR 1/2)	0.5	2.00	0-1 du/ 2 acres	0.47	0.54	0.47	0.47	0.61
8-Rural-1du/5acres									
LACUGA	AGRICULTURE	0.2	5.00	0-1 du/ 5 acres	-	-	-	-	-
OLYUGA	RESIDENTIAL (R 1/5)	0.2	5.00	1 du/ 5 acres	-	-	-	-	-
COUNTY	RURAL RESIDENTIAL/RESOURCE	0.2	5.00	0-1 du/ 5 acres	0.46	0.59	0.22	0.22	0.29
COUNTY	MCALLISTER GEOLOGICALLY SENSITIVE AREA	0.2	5.00	0-1 du/ 5 acres	-	-	0.27	0.27	0.37
COUNTY	RURAL RESIDENTIAL (RR 1/5)	0.2	5.00	0-1 du/ 5 acres	0.26	1.16	0.69	0.69	1.04
RAINUGA	RURAL RESIDENTIAL/RESOURCE 1/5	0.2	5.00	1 du/ 5 acres	-	-	0.09	0.09	0.23
TENUGA	RURAL RESIDENTIAL/RESOURCE 1/5	0.2	5.00	1 du/ 5 acres	-	-	0.20	0.20	0.25
YELMUGA	RURAL RESIDENTIAL 1/5	0.2	5.00	0-1 du/ 5 acres	-	-	0.37	0.37	0.39
9-Rural-1du/20acres									
COUNTY	LONG-TERM AGRICULTURE	0.05	20.00	0-1 du/ 20 acres	-	-	0.04	0.04	0.06

Note: Actual measurements of density: 1) Subdivision gross density; 2) Subdivision net density; 3) Recent building activity - net residential density of all residential acres, including critical areas; 4) Recent building activity - net residential density of all residential acres, excluding critical areas; 5) Recent building permit activity - net residential density of residential acres that are evaluated to be fully developed.

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number of subdivision approvals in the last five years. In addition, subdivision data were not available for most of the mixed-use and higher density zoning districts, as building activity in these areas does not necessarily go through the subdivision platting process.

The second source of information was the Residential Building Permit database that has been maintained by TRPC since 1986. This database tracks building permit activity for each jurisdiction in Thurston County by tax parcel and address. By linking building permit activity to tax parcel size and zoning, a picture of development trends emerges.

Building permit activity was monitored for the time interval between first quarter 1996 and first quarter 2000, to correspond with the 2000 Census. To accommodate for the time lapse between a building permit being issued and a dwelling being completed, the following lag times were used:

- Single-family home building permits
(2 months)
All Jurisdictions: issued between *February 1 of the preceding year and January 31 of the presumed built year.*

- Multifamily home building permits
(9 months)
Olympia, Olympia UGA, Tumwater, Tumwater UGA, Lacey, Lacey UGA: issued between *August 1 of the presumed built year minus 2 and July 30 of the preceding year.*

(3 months)
County, Tenino, Rainier, Yelm, Bucoda: issued between *January 1 and December 31 of the preceding year.*

Time lags were different depending on the jurisdiction, based on the assumption that multifamily development was likely to occur in large complexes that would require nine months to construct, on average, in large cities, whereas the more suburban cities were more likely to see multifamily housing in the form of duplexes, tri-plexes, and four-plexes.

- Manufactured housing permits
(no lag time)
All Jurisdictions: issued between *April 1 of the preceding year and March 30 of the presumed built year.*

Building permit density information monitors net residential density, as it is only capable of considering the acreage assigned to the residential lot, and cannot account for lands given to rights-of-way or open space tracts. There are, however, several different ways of measuring net residential density through this method, and include the following:

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- Net Residential Density of all residential acres, including critical areas.
- Net Residential Density of all residential acres, excluding critical areas.
- Net Residential Density of residential acres that are evaluated to be fully developed. This method excludes those portions of a tax parcel where there is additional room for growth.

1. Net Residential Density Of All Residential Acres, Including Critical Areas

Net density is determined by examining the number of new dwelling units divided by the number of total acres located in the tax parcels that have experienced development. This measurement of development density provides the most *uniform* measurement of net density between all of the jurisdictions within Thurston County. It doesn't, however, account for the discretion of individual jurisdictions to apply density standards during the permitting process.

2. Net Residential Density Of All Residential Acres, Excluding Areas Unsuitable For Building, Including Critical Areas

Critical Areas are those areas that are environmentally unsuitable for building sites. Areas defined as critical may include lakes, wetlands, 100-year flood plain, floodways, steep slopes, and submerged marine lands. In addition, roads and road rights-of-way are unusable for building sites.

Floodways are considered to lie within the main river channel, and are included within the 100 year flood plains. One hundred year flood plains were obtained from Federal Emergency Management Areas (FEMA) designations, and digitized by the Thurston Geodata Center.

Wetlands consist of a combination of the TRPC wetland indicators data and National Wetlands Inventory (NWI) data. The two data sets were combined due to the fact that the NWI process for cataloging wetland information captured some wetlands which are not identified in the TRPC data. Those polygons coded as blank and 'U' were not classified as wetlands.

Rights-of-way information was obtained from the Land Use classification.

Steep slopes are identified under ordinance No. 11200 (06/03/96) of the Thurston County Critical Areas designation, and were considered to be consistent with those soils of high landslide susceptibility. After examination of the area classified as steep slopes in both the jurisdictions of Lacey and Tumwater, it was determined that the soils coverage

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provided a significant overestimation of steep slopes which was not reflected in actual building patterns. Further analysis in Olympia revealed that some 3,750 acres of land were identified as “steep slopes” using soil classification provided by the Soil Conservation Service, yet only 388 acres of land truly consisted of slopes above 40 percent, as mapped from 2 foot elevation contours provided by the Thurston Geodata Center. For this reason, steep slopes were not included in the critical area reductions used to calculate net density.

The calculation of net zoning density varies by jurisdiction, and is summarized in Table 11. In Lacey, Olympia, and Tumwater, and their urban growth areas, in this analysis zoning density is calculated as a net density, subsequent to removal of some or all types of critical areas and rights-of-way.

Due to larger lot sizes and lower zoning density in rural regions of the county, it is likely that critical area and right-of-way deductions will effect the placement of the dwellings, but not the total number of dwellings on a specific site. For this reason, in this analysis zoning density is calculated as a gross density in rural portions of the county. Due to the nature of commercial and industrial development seeking maximum utilization of a parcel, full critical area restrictions are applied for the analysis.

Critical area and right-of-way exclusions can reduce net density in significant amounts taken across all zoning districts as a whole, (note the difference in deductions of those jurisdictions including all critical areas and rights-of-way versus those that are much more selective, Table 12). In real terms, however, these deductions play a relatively small role in the difference between net density calculations once a parcel has been through the platting process. In addition, many jurisdictions further protect critical areas from all development pressure by placing them into Open Space or Institutional zoning categories. Overall, critical areas deductions to net density, as applied by various jurisdictions, were found to comprise less than one percent of those parcels developed between 1996 and 2000 in residential and mixed use zoning categories.

3. Net Residential Density Of Residential Acres That Are Evaluated To Be Fully Developed

The final measurement of net density considered that some parcels have been underdeveloped, or not developed to full capacity, when compared to their zoning districts. There are many reasons for this situation to occur. In some instances, consumers value land and private open space more than the monetary compensation of subdividing their land and allowing denser development. In other cases, city services such as water and sewer have not yet been extended to areas under development, and the development cannot occur at densities consistent with zoning

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**Table 11: Net density critical area and right-of-way exclusions
by various jurisdictions**

Jurisdiction	Residential	Commercial	Comments
Bucoda	Gross Density	Same as Residential	No critical areas of concern except the river. Will deny permits based on minimum parcel size near river.
Unincorporated Thurston County	Gross Density - Remove submerged marine lands only.	Net Density - Remove lakes, wetlands, 100-year flood plain, high groundwater flood hazard area, steep slopes, and associated buffers for each.	Most wetlands in county are Class II, wetland buffer assumption: 200'. Stream Type Buffers are: Types 1-3: 100'; Type 4: 50'; Type 5: 25'/50' if they discharge directly to the Sound; Streams in ravines 15'+in depth: 50' from top. Landslide hazard area: 50' top/side of slope, 25' at bottom of slope. High groundwater flood hazard area: 50' setback. Important habitats/species and Wellhead protection areas: left in commercial/industrial land supply.
Lacey & UGA	Net Density - Remove lakes, wetlands. Do not remove flood plain, roads and steep slopes.	Same as Residential	Wetlands are zoned as environmentally sensitive or Open Space-Institutional.
Olympia & UGA	Net Density - Remove lakes, wetlands, 100-year flood plain, floodways, steep slopes. Do not remove roads.	Same as Residential	Steep slopes were not removed by GIS due to lack of confidence in accuracy of the soils/slope coverage.
Rainier	Gross Density	Same as Residential	No critical areas of importance within the jurisdiction limits. Zoning is never denser than 4 du/acre or 1 du/acre.
Tenino	Gross Density	Same as Residential	No critical areas of concern
Tumwater & UGA	Net Density - Remove lakes, wetlands, 100-year flood plain, floodways, steep slopes, road and rights-of-way.	Same as Residential	Stormwater and open space requirements must be met prior to plan approval on subdivisions. Steep slopes were not removed by GIS due to lack of confidence in accuracy of the soils/slope coverage.
Yelm	Gross Density	Same as Residential	Area not adjusted for critical areas, but critical areas are protected by ordinance.

Source: Survey of local long range planners

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are considered partially developed. The fully-built lot size factor was used to allocate the area of the parcel into developed, buildable, and undevelopable land.

The final measurement of net density divides the number of permitted dwellings by the developed portion of individual tax parcels. This measurement of density will therefore be equal to or higher than the two listed previously.

D. Residential Development Assumptions of Mixed Use Zoning Districts

Mixed use zoning districts are characterized as having both residential and commercial development permissible. As limited development activity has occurred in mixed use zoning districts across Thurston County in the last five years, development assumptions were based on input of long range planners and development regulations in the Comprehensive Plans, rather than actual building trends. In addition to the fully-built lot size assumption and the residential estimated density assumption, mixed use zones also required an additional assumption – percent residential land of total buildable land in zoning district. This factor allocates available buildable land between commercial and residential demands in mixed use zoning districts (Table 13).

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**Table 13: Summary of residential development assumptions
for mixed use zoning districts.**

Jurisdiction	Name of Zone	95_00 Zoned Density (du/acre)	Development Assumptions		
			% Residential Land of Total Buildable Land	Avg. Est. Density (du/acre)	Fully-Built Lot Size
1-High Multifamily (15-30+ du/acre)					
OLYMPIA	RESIDENTIAL MIXED USE	15 or higher	50% residential	15	0.25
OLYMPIA	DOWNTOWN BUSINESS	15 or higher	2% residential	15	0.25
OLYMPIA	URBAN WATERFRONT	15 or higher	10% residential	15	0.25
OLYMPIA	URBAN CENTER	7-24	25% residential	15	0.25
TUMWATER	MIXED USE	14 or higher	10% residential	15	0.25
OLYUGA	COMMUNITY ORIENTED SHOPPING CENTER	7-24	25% residential	15	0.25
2-Moderate Multifamily (8-20 du/acre)					
LACEY	CENTRAL BUSINESS DISTRICT	6-20	2% residential	8	0.25
LACEY	HAWKS PRAIRIE BUSINESS DISTRICT	6-20	2% residential	8	0.25
LACEY	MIXED USE HIGH DENSITY CORRIDOR	6-20	50% residential	8	0.25
OLYMPIA	URBAN VILLAGE	7-14	65% residential	8	0.25
OLYMPIA	GENERAL COMMERCIAL	7-18	2% residential	8	0.25
OLYMPIA	MEDICAL SERVICE	7-18	25% residential	8	0.25
OLYMPIA	PROFESSIONAL OFFICE/RESIDENTIAL	7-18	50% residential	8	0.25
TUMWATER	COMMUNITY SERVICES	0-15 or higher	10% residential	8	0.25
LACUGA	HAWKS PRAIRIE BUSINESS DISTRICT	6-20	2% residential	8	0.25
LACUGA	VILLAGE CENTER	3-20	65% residential	8	0.25
LACUGA	MIXED USE HIGH DENSITY CORRIDOR	12-20	50% residential	8	0.25
LACUGA	CENTRAL BUSINESS DISTRICT	6-20	2% residential	8	0.25
OLYUGA	PROFESSIONAL OFFICE/RESIDENTIAL	7-18	50% residential	8	0.25
OLYUGA	MEDICAL SERVICE	7-18	50% residential	8	0.25
OLYUGA	GENERAL COMMERCIAL	7-18	2% residential	8	0.25
TUMUGA	COMMERCIAL DEVELOPMENT	0-29 or higher	2% residential	8	0.25

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Table 13 continued: Summary of residential development assumptions for mixed use zoning districts.

Jurisdiction	Name of Zone	95_00 Zoned Density (du/acre)	Development Assumptions		
			% Residential Land of Total Buildable Land	Avg. Est. Density (du/acre)	Fully-Built Lot Size
3-Mixed Residential (6-12 du/acre)					
LACEY	VILLAGE CENTER	3-20	65% residential	7	0.50
LACEY	MIXED USE MODERATE DENSITY CORRIDOR	8-12	50% residential	7	0.50
OLYMPIA	HIGH DENSITY CORRIDOR-4	1-15 or higher	10% residential	7	0.50
OLYMPIA	NEIGHBORHOOD VILLAGE	7-13	65% residential	7	0.50
OLYMPIA	PLANNED UNIT DEVELOPMENT - Evergreen	4-12	50% residential	7	0.50
OLYMPIA	HIGH DENSITY CORRIDOR-3	1-15 or higher	10% residential	7	0.50
LACUGA	MIXED USE MODERATE DENSITY CORRIDOR	8-12	50% residential	7	0.50
OLYUGA	NEIGHBORHOOD VILLAGE	7-13	65% residential	7	0.50
4-Medium (3-8 du/acre)					
OLYMPIA	HIGH DENSITY CORRIDOR-2	1-7 or higher	25% residential	4	0.50
OLYMPIA	HIGH DENSITY CORRIDOR-1	1-7 or higher	25% residential	4	0.50
OLYMPIA	NEIGHBORHOOD RETAIL	4-8	10% residential	4	0.50
YELM	CENTRAL BUSINESS DISTRICT	0-14 or higher	10% residential	4	0.50
YELM	HEAVY COMMERCIAL	0-14 or higher	10% residential	4	0.50
YELM	COMMERCIAL	0-14 or higher	10% residential	4	0.50
OLYUGA	NEIGHBORHOOD RETAIL	4-8	10% residential	4	0.50
RAINIER	CORE COMMERCIAL	4-8	25% residential	4	0.50
TENINO	COMMERCIAL 2	0-12	25% residential	4	0.50
TENINO	COMMERCIAL 1	0-12	25% residential	4	0.50
6-Very Low (0-4 du/acre)					
BUCODA	COMMERCIAL	0-1	25% residential	1.25	1.00
COUNTY	RURAL COMMERCIAL CENTER	0-1	2% residential	1.25	1.00

E. Commercial and Industrial Floor to Area Ratio Assumptions

Commercial and industrial development occurs throughout Thurston County. As with residential development, in many instances commercial and industrial development occurs at densities that severely underutilize the development potential of a parcel. When the underutilization results in large areas of vacant land surrounding the commercial or industrial building or structure, the tax parcel is considered partially developed.

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Site specific characteristics determine the appropriate level of development for each tax parcel. There are, however, national studies that have attempted to quantify average square foot gross floor area per gross acre ratio (FAR). These figures are quite variable depending on the type of use of each parcel and did not cover the complete range of employment and building types in Thurston County. They did, however, provide a good range of background information to set parameters for further study.

In order to determine a standard between fully developed and partially developed parcels, a series of maps covering the main commercial and industrial areas within Thurston County was then created overlaying FARs on aerial photography at the tax parcel level. The Buildable Lands team then reviewed each map to determine the FAR threshold between fully developed and partially developed lots. The generalized FAR threshold was determined to be 3,000 square feet per acre. Comparison of this threshold with national averages shows that it is a realistic figure for the bottom threshold of a fully developed parcel (Table 14).

F. Redevelopment Potential of Commercial and Industrial Properties

A second criterion in evaluating the land availability of commercial and industrial properties is determining their potential to be redeveloped. An accepted practice in addressing this issue is to rank tax parcels based on the basis of a ratio of building value (improvement value) to land value. If the building value to land value ratio (BLR) is low, then the parcel is being underutilized, and is more likely to be redeveloped. If the BLR is high, the parcel is less likely to be redeveloped.

A series of maps were constructed highlighting those parcels considered fully developed for commercial or industrial activity, and their BLR ratio. The Buildable Lands team then determined appropriate thresholds for redevelopment potential based on their knowledge of market conditions in Thurston County. The planning horizon for redevelopment in this analysis was 25 years; recognizing this, all parcels are considered developable at some level (Table 15).

As with any analysis, many building types and structures were not suited for analysis with the FAR or BLR factors. Table 16 shows how the factors were applied, and the determination of land status on parcels that were unsuited to these generalized factors.

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Category	Description	Employees per 1,000 Square Feet Gross Floor Area	1,000 Square Feet Gross Floor Area Per Gross Acre
022: General Aviation Airport	Small private and corporate aircraft, short runways, no terminals and many small aircraft	2.55	0.16
030: Truck Terminal	Goods are transferred between trucks, trucks and railroads, or trucks and ports	2.34	10.12
110: General Light Industrial	Employ fewer than 500 persons and have an emphasis on activities other than manufacturing	2.16	8.18
120: General Heavy Industrial	High number of employees and could be categorized as manufacturing facilities	1.82	4.51
130: Industrial Park	Contains a number of industrial or related facilities	2.00	11.06
140: Manufacturing	The primary activity is the conversion of raw materials or parts into finished products	1.87	9.94
150: Warehousing	Storage of materials; may include office and maintenance areas	1.28	11.23
151: Mini-Warehouse	Building in which a storage unit or vault is rented for the storage of goods.	0.05	14.93
590: Library	Either a public or private facility - houses shelves containing books, reading rooms or areas and possibly meeting rooms	0.92	
610: Hospital	An institution where medical or surgical care is given	3.03	
620: Nursing Home	A facility whose primary function is to care for persons who are unable to care for themselves	1.15	
710: General Office Building	Houses multiple tenants	3.29	2.24
720: Medical-Dental Office Building	A facility which provides diagnoses and outpatient care on a routine basis	4.83	21.76
730: Government Office Building	An individual building containing the entire function of a governmental unit	4.29	0.96
732: U.S. Post Office	Federal building housing facilities for mail and vehicle storage	4.35	8.63
733: Government Office Complex	A complex of buildings containing multiple governmental units	4.11	
750: Office Park	Suburban subdivisions or PUDs	3.59	18.16
770: Business Park	A group of flx-type or incubator one or two story buildings served by a common roadway system	3.01	11.19
812: Building Materials and Lumber Store	A free-standing building which sells hardware, building materials or lumber	1.24	4.88
814: Specialty Retail Center	Small strip shopping centers	1.82	8.83
815: Free Standing Discount Store	Free-standing store with off-street parking	1.53	9.14
816: Hardware/Paint Store	Free-standing building with off-street parking	0.96	10.64
831: Quality Restaurant	Eating establishment of high quality with turnover rates of at least one hour	7.46	
832: High Turnover (Sit-down Restaurant	Eating establishment with turnover rates of less than one hour	9.92	
833: Fast Food Restaurant	Fast food restaurant without drive through window	14.25	
834: Fast Food Restaurant	Fast food restaurant with drive through window	10.90	

Source: Trip Generation - 5th Edition, Institute of Transportation Engineers, 1991.

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Building to Land Value	Redevelopment Potential
<0.5	100%
0.5 to < 1.0	75%
1.0 to 1.5	50%
>1.5	10%

Table 16: Application of the FAR and BLR factors by building type.

BUILDINGS	FULLY OR PARTIALLY DEVELOPED STATUS	REDEVELOPMENT POTENTIAL
BOWLING ALLEY	FAR	BLR
CASINO	FAR	BLR
CELL TOWER	FAR	BLR
CHURCH	Developed	BLR
COLLEGE	Developed	BLR
COMMUNITY CENTER	FAR	BLR
DEMOLITION	FAR	BLR
FIRE STATION	FAR	BLR
GOLF COURSE	Developed	No
HORSE ARENA	Developed	No
HOTEL	FAR	BLR
HYDROELECTRIC DAM	Developed	No
JAIL	Developed	BLR
LIBRARY	Developed	BLR
MINI WAREHOUSE	FAR	BLR
MOTEL	FAR	BLR
OFFICE	FAR	BLR
PARKING	Developed	Yes
POST OFFICE	FAR	BLR
RECREATION	FAR	BLR
RESERVOIR	Developed	No
SCHOOL	Developed	BLR
SERVICE	FAR	BLR
SEWAGE TREATMENT	Developed	No
SHOPPING CENTER	FAR	BLR
SHOWROOM	FAR	BLR
SKATING RINK	FAR	BLR
STORAGE/INDUSTRIAL	FAR	BLR
STORE	FAR	BLR
SUPERMARKET	FAR	BLR
TANK	FAR	BLR
THEATER	FAR	BLR
AIRPORT	Developed	No

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A. Overview and Land Categorization

Evaluating the land status of each tax parcel was the final phase in determining land supply for Thurston County. The first step was to assign a land category (current use) and developable land category to each tax parcel using the following codes:

- Commercial;
- Commercial church (developable code only);
- Critical areas & open space;
- Industrial;
- Mixed Use;
- Public lands & facilities;
- Residential; and
- Resources

These categories were based on the current use of the parcel, and the allowable future use of each parcel based on zoning regulations or other development restrictions.

B. Determination of Land Status

The second step was working through the development assumptions for each individual parcel. While the vast majority of parcels were analyzed using the development assumptions listed in the previous sections, hundreds of exceptions were also found to exist which required the programming of many additional development rules. Most exceptions fell into the following categories:

- Partially developed parcels that were inconsistent with current zoning regulations;
- Mixed-use parcels;
- Churches.

In addition, care was taken to separate out public lands and facilities from other types of commercial or industrial activity. This presented numerous issues; public lands and facilities can be used for many activities including commercial, industrial, residential activity, and critical areas and open space.

In general terms, land status was determined using the following steps:

1. The amount of developed land on each parcel was determined using the current land use and appropriate development assumptions.

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2. The amount of undevelopable land was determined. Undevelopable land can be either critical areas, or those areas in residential zoning that could not be utilized effectively under current zoning densities. It was necessary to categorize this portion of the parcel as undevelopable as it added no increased capacity for new dwellings.
3. The amount of buildable land, either residential or commercial/industrial land available on each parcel.
4. Finally, the amount of commercial or industrial land that is redevelopable.

This categorization allowed for the determination of capacity, stated in terms of dwelling units or commercial industrial square feet, for each parcel, given current development regulations. An example of how this process was applied to individual tax parcels is presented in Table 17.

XI. DEMAND

A. Population and Employment Forecast

The most recent population and employment forecast for Thurston County was formally adopted by the Thurston Regional Planning Council in 1999. In early 2002, the county-wide forecast was re-examined subsequent to the release of the new state Office of Financial Management population forecast. The medium scenario regional forecast was found to fall within one percent of the new state medium range forecast, and the Thurston Regional Planning Council approved a motion to continue using the 1999 forecast for planning purposes.

The county-wide forecast was developed using a two-stage computer modeling process. In the county-wide model, the underlying premise is that growth is generated by job opportunities. More jobs mean more people; fewer jobs mean fewer people. Thus the county-wide forecast is conducted using the “EMPFOR” model which forecasts employment and labor force needs, linking an econometric module to a demographic one. More details about the EMPFOR model can be found in Population and Employment Forecast for Thurston County, Final Report, October 1999, by Thurston Regional Planning Council.

B. Residential Land Demand

1. Overview

The output of the county-wide employment and population forecasting model EMPFOR is used to generate county-wide housing demand by type. A second model, “POPFOR,” allocates the future housing and population to smaller areas within Thurston County. The methodology used by POPFOR is a combination of two common approaches to small-area population forecasting: the ratio method and the area method.

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Table 17: Example of parcel specific land status categorization and development capacity estimation from the Buildable Lands database.

Parcel Number	Land Use in 2000	Total Land Area (acres)	Developed Land (acres)	Undevelopable Land (acres)		Buildable Land (acres)		Redevelopable Land (acres)		Dwelling Units Total (2000)	Potential Capacity (2000)	Commercial & Industrial (sq. ft.) Total (2000)
				Critical Areas	Other	Residential	Comm. or Industrial	%	acres			
62200300600	Roads & Rights-of-Way	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
3700000906	Religious Institutions & Private Schools	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0	0	4,320
12835331100	State	9.9	9.9	0.0	0.0	0.0	0.0	75	7.4	0	0	61,337
3700000500	Local	14.9	14.9	0.0	0.0	0.0	0.0	0	0.0	0	0	47,840
3700001003	Federal - Civilian	1.7	1.6	0.0	0.0	0.0	0.1	100	1.6	0	0	4,682
62200100700	Dwellings	0.3	0.3	0.0	0.0	0.0	0.0	0	0.0	6	0	0
12704440400	Dwellings	2.4	0.1	0.0	0.0	0.2	2.1	0	0.0	1	3	0
3700002006	Commercial/Industrial	0.6	0.6	0.0	0.0	0.0	0.0	100	0.6	0	0	2,435
09470053000	Commercial/Industrial	32.7	1.2	16.3	0.0	1.5	13.7	100	1.2	0	23	6,912
12703320100	Undeveloped Private	26.8	0.0	0.0	0.0	2.7	24.1	0	0.0	0	40	0
12703320901	Undeveloped Government	1.5	0.0	0.0	0.0	0.0	1.5	0	0.0	0	0	16,287

Note: Each parcel is categorized based on existing land use, dwellings, and commercial or industrial buildings. Potential development decisions are based on zoning. All data are in draft format and do not represent true future conditions.

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With the *ratio* method, future residential growth is assigned to a location based on its recent share of a larger area's growth. For example, if Olympia has had 15 percent of Thurston County's growth since 1990, the ratio method would assign 15 percent of the future growth. With the *area* method, growth is assigned according to the available area for development. More growth is assigned to the areas with more capacity.

POPFOR assigns future growth first to "subareas" of the county based on their shares of the growth during the 1990s. It does separate calculations for single-family units, multifamily units, and manufactured homes. Then within each subarea, POPFOR uses the area method to assign growth to numerous small "forecast analysis zones" (FAZs), based on their capacity for growth (buildable acres times density). Population occupying those dwellings is calculated based on household sizes and vacancy rates derived from the Census. Then the model revises the available acres to account for land consumption and repeats the cycle. POPFOR forecasts in five-year intervals to the year 2025.

There are fifty-three subareas countywide, and 13,064 FAZs. The FAZs average 2.4 acres in size. They are designed for aggregation into groupings more practical for end-users. They aggregate into traffic analysis zones (TAZs) for the transportation planning process, but also into Census tracts, block groups and blocks, school district service areas, fire districts, zip codes, drainage basins, and other geographies to meet the needs of various government and business planning purposes.

POPFOR takes into account a wide variety of factors. Buildable lands are calculated by using GIS analysis of existing development, parcel sizes, environmentally critical areas, public lands, and other factors. This methodology is discussed in the 1998/99 Population and Employment Forecast: Appendix.

Capacity for development of the buildable lands is based on comprehensive plans and zoning densities, actual development densities (typically lower than the zoning maximum), and sewer and water availability

2. Calculating Demand For New Dwelling Units

The county-wide demand for new units by type is calculated from the age profile of the population generated by EMPFOR, using Census data for housing demand by type by age cohort.

Different age cohorts tend to occupy different housing types. While single-family dwellings are the housing type most chosen by all age cohorts, they appeal most strongly to families with children. Hence children and middle-aged adults overwhelmingly occupy single-family dwellings. Young adults are more heavily represented in apartments than other age groups. People in their sixties tend to prefer single-family

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dwellings (often the home they have lived in for many years), but as they reach their seventies and eighties, more and more of them move to multifamily units with lower maintenance obligations.

Different proportions of different age groups occupy group quarters as well. Most group quarters population is either young adults (college dormitories, military barracks, or jails), or elderly (nursing homes).

The 1990 Census Public Use Microdata Sample (PUMS) was used to examine housing type by age cohort for Thurston County. The PUMS data is a five-percent sample of Census responses that allows analysts to create their own cross-tabulations that are not found in the published reports. Housing type by age cohort was as found in Table 18.

**Table 18: Persons by Age Cohort by Dwelling Type in 1990
Thurston County**

Age	PUMS Persons by Dwelling Type					100% Count	PUMS Shares by Dwelling Type			
	Grp Qtrs	MH	SF	MF	Total		Grp Qtrs	MH	SF	MF
0-4	0	1,725	7,356	2,484	11,565	11,690	0.0%	14.9%	63.6%	21.5%
5-9	69	1,554	8,781	1,539	11,943	12,882	0.6%	13.0%	73.5%	12.9%
10-14	60	1,752	8,502	1,551	11,865	12,257	0.5%	14.8%	71.7%	13.1%
15-19	585	1,281	7,653	1,185	10,704	11,358	5.5%	12.0%	71.5%	11.1%
20-24	726	1,512	4,860	3,477	10,575	10,469	6.9%	14.3%	46.0%	32.9%
25-29	120	1,773	7,401	3,645	12,939	12,002	0.9%	13.7%	57.2%	28.2%
30-34	69	1,953	9,288	2,730	14,040	13,820	0.5%	13.9%	66.2%	19.4%
35-39	33	1,734	10,935	1,836	14,538	14,676	0.2%	11.9%	75.2%	12.6%
40-44	36	1,467	10,626	1,533	13,662	13,592	0.3%	10.7%	77.8%	11.2%
45-49	99	978	7,329	1,137	9,543	10,111	1.0%	10.2%	76.8%	11.9%
50-54	0	1,137	5,379	786	7,302	7,258	0.0%	15.6%	73.7%	10.8%
55-59	30	753	4,368	825	5,976	6,290	0.5%	12.6%	73.1%	13.8%
60-64	15	1,104	4,737	753	6,609	6,126	0.2%	16.7%	71.7%	11.4%
65-69	30	1,074	4,365	723	6,192	6,064	0.5%	17.3%	70.5%	11.7%
70-74	33	1,266	3,246	420	4,965	4,889	0.7%	25.5%	65.4%	8.5%
75-79	156	831	1,998	432	3,417	3,653	4.6%	24.3%	58.5%	12.6%
80-84	147	234	1,227	558	2,166	2,313	6.8%	10.8%	56.6%	25.8%
85+	276	336	789	729	2,130	1,788	13.0%	15.8%	37.0%	34.2%
Total:	2,484	22,464	108,840	26,343	160,131	161,238	1.6%	14.0%	68.0%	16.5%

Thurston County's housing type by age cohort was compared with other Puget Sound counties (the average for Whatcom, Skagit, Island, Kitsap, Snohomish, King, Pierce, and Thurston). Thurston County has a comparable proportion of persons in single-family homes (69 percent for Puget Sound average versus 68 percent for Thurston in 1990), but more in manufactured housing and less in multifamily. The TRPC forecast gradually shifts housing demand by type by age cohort for Thurston County toward the pattern for the average of the Puget Sound counties over the 25-year forecast period.

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The assumption is that by 2025, Thurston County's pattern will move just halfway toward the Puget Sound average. This is because the Puget Sound average reflects 1) a larger proportion of persons in multifamily units—particularly in King County—than is thought likely for Thurston (23 percent versus 16 percent), and 2) a much smaller proportion of persons in manufactured housing (6 percent versus 14 percent). For example, if the Puget Sound average was adopted as the pattern for Thurston County for 2025, the total number of manufactured housing units would have to decline from today, rather than simply level out at some point.

The number of persons expected to occupy each dwelling type is then calculated by multiplying the proportion of the population occupying each type times the total future population (e.g., 294,100 total future population \times 68% in SF = 200,000 future population in SF dwellings).

Persons per dwelling unit — a combination of household size and occupancy rate — is then calculated for each dwelling type from 1990 Census data. These figures are then adjusted for each year during the 1990s to achieve conformance of total population and housing with OFM figures for Thurston County. Declining persons per dwelling unit are projected for the forecast period, but at a flattening rate. That is, the long-term trend of declining household sizes is expected to continue, but to level out over time.

The future total housing demand by type is then found by dividing the total projected persons occupying each type by the persons per dwelling by type (e.g., 200,000 persons in SF \div 2.5 persons per SF = 80,000 SF dwellings needed). The result is shown in Table 19.

Table 19: Total Dwelling Demand by Unit Type

Year	Total DU Demand			Share of Total Units		
	MH	SF	MF	MH	SF	MF
1990	10,944	42,509	12,967	16.50%	64.00%	19.50%
1995	13,334	50,412	15,313	16.90%	63.80%	19.40%
2000	15,037	57,100	17,741	16.70%	63.50%	19.70%
2005	16,149	64,595	21,001	15.90%	63.50%	20.60%
2010	17,012	71,268	24,540	15.10%	63.20%	21.80%
2015	17,656	78,585	28,476	14.20%	63.00%	22.80%
2020	18,141	85,695	32,248	13.30%	63.00%	23.70%
2025	18,523	92,198	35,458	12.70%	63.10%	24.30%

3. Calculating Capacity For New Dwelling Units By Type

The total buildable land area is calculated as described above in Section VIII. Land Status. This land area must be converted into acres of

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buildable land available for each dwelling type, since not all types may be constructed in all residential zoning districts. This is done by allocating shares of the buildable land in each zone to each of the three housing types, based on the judgment of planners from each jurisdiction. For example, in some low density rural zones, 50% of the housing starts are site-built single-family, and 50% are manufactured homes. In some medium density urban zones, 80% may be single-family, and 20% townhouses (multifamily). In some high density urban zones, only multifamily may be built. These various assumptions — provided by jurisdictional planning staff — are programmed into the POPFOR model, and are presented in Table 20.

POPFOR allocates the acres in each FAZ according to the assumed proportions per dwelling type. The acres for each type are then translated into dwelling unit capacities per dwelling type by multiplying times the density per type (e.g., acres of SF × units per acre = capacity in dwellings). This operation is repeated for each zoning district in each FAZ, and for each dwelling type.

Next POPFOR allocates new dwellings proportionate to the available capacity in each FAZ within the sub-area (e.g., if one FAZ has one percent of the SF capacity, it will be allocated one percent of the new SF dwellings). The newly allocated dwellings are then subtracted from the capacity, and the capacity is translated back into acres by dividing by the density. These operations are conducted by dwelling type. The acres apportioned for each dwelling type are then added back together (e.g., the 80% for SF and the 20% for townhouses). This cycle is repeated for each FAZ in each sub-area.

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**Table 20: Assumptions for 1998/99 Population and Employment
Forecast Residential Land Supply.**

JURISDICTION / ZONING DISTRICT	Mixed-Use % Residential	Forecast Estimated Density	Housing Distribution (%)		
			Single- family	Multi- family	Man. Home
BUCODA					
COMMERCIAL	N/A	N/A	N/A	N/A	N/A
HISTORIC	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A
RESIDENTIAL	N/A	1 du/ acre	50	0	50
COUNTY					
ARTERIAL COMMERCIAL	N/A	N/A	N/A	N/A	N/A
HIGHWAY COMMERCIAL	N/A	N/A	N/A	N/A	N/A
LIGHT INDUSTRIAL	N/A	N/A	N/A	N/A	N/A
LONG-TERM AGRICULTURE	N/A	1 du/ 20 acres	65	0	35
LONG-TERM FORESTRY	N/A	N/A	N/A	N/A	N/A
MEDIUM DENSITY RESIDENTIAL	N/A	1.5 du/ acre	55	0	45
MCALLISTER GEOLOGICALLY SENSITIVE AREA	N/A	1 du/ 5 acres	65	0	35
MILITARY RESERVATION	N/A	N/A	N/A	N/A	N/A
NISQUALLY AGRICULTURE	N/A	N/A	N/A	N/A	N/A
NEIGHBORHOOD CONVENIENCE COMMERCIAL	N/A	N/A	N/A	N/A	N/A
PLANNED INDUSTRIAL PARK	N/A	N/A	N/A	N/A	N/A
PUBLIC PRESERVES	N/A	N/A	N/A	N/A	N/A
RESIDENTIAL (R 3-6/1)	N/A	3 du/ acre	90	0	10
RESIDENTIAL (R 4-16/1)	N/A	10 du/ acre	40	60	0
RURAL COMMERCIAL CENTER	N/A	N/A	N/A	N/A	N/A
RURAL RESIDENTIAL (RR 1/1)	N/A	1 du/ acre	50	0	50
RURAL RESIDENTIAL (RR 1/2)	N/A	1 du/ 2 acres	65	0	35
RURAL RESIDENTIAL (RR 1/5)	N/A	1 du/ 5 acres	65	0	35
RURAL RESIDENTIAL (RR 2/1)	N/A	2 du/ acre	50	0	50
RURAL RESOURCE//INDUSTRIAL	N/A	N/A	N/A	N/A	N/A
RURAL RESIDENTIAL/ RESOURCE (RRR 1/5)	N/A	1 du/ 5 acres	65	0	35
SUBURBAN RESIDENTIAL (SR 4/1)	N/A	4 du/ acre	65	0	35

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**Table 20 continued: Assumptions for 1998/99 Population and
Employment Forecast Residential Land Supply.**

JURISDICTION / ZONING DISTRICT	Mixed-Use % Residential	Forecast Estimated Density	Housing Distribution (%)			
			Single- family	Multi- family	Man. Home	
LACEY CITY						
BUSINESS PARK	N/A	N/A	N/A	N/A	N/A	N/A
CEMETARY	N/A	N/A	N/A	N/A	N/A	N/A
CENTRAL BUSINESS DISTRICT	2%	20 du/ acre	0	100	0	0
COMMUNITY COMMERCIAL DIST.	N/A	N/A	N/A	N/A	N/A	N/A
GENERAL COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
HIGH DENSITY RESIDENTIAL	N/A	18 du/ acre	20	75	5	0
HAWKS PRAIRIE BUSINESS DIST.	2%	20 du/ acre	0	100	0	0
LAKE	N/A	N/A	N/A	N/A	N/A	N/A
LOW DENSITY RESIDENTIAL (LD 0-4)	N/A	3.5 du/acre	100	0	0	0
LOW DENSITY RESIDENTIAL (LD 3-6)	N/A	4 du/ acre	90	5	5	0
LACEY HISTORIC AREA	N/A	2 du/ acre	100	0	0	0
LIGHT INDUSTRY	N/A	N/A	N/A	N/A	N/A	N/A
LIGHT INDUSTRIAL COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
MODERATE DENSITY RESIDENTIAL	N/A	8 du/ acre	40	60	0	0
MINERAL EXTRACTION	N/A	N/A	N/A	N/A	N/A	N/A
MCALLISTER GEOLOGICALLY SENSITIVE AREA	N/A	N/A	N/A	N/A	N/A	N/A
MIXED USE HIGH DENSITY CORRIDOR	N/A	18 du/ acre	0	100	0	0
MIXED USE MODERATE DENSITY CORRIDOR	50%	10 du/ acre	0	100	0	0
NEIGHBORHOOD COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
OFFICE COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
OPEN SPACE INSTITUTIONAL	N/A	N/A	N/A	N/A	N/A	N/A
OPEN SPACE INSTITUTIONAL/PARK	N/A	N/A	N/A	N/A	N/A	N/A
OPEN SPACE INSTITUTIONAL/SCHOOL	N/A	N/A	N/A	N/A	N/A	N/A
VILLAGE CENTER	65%	6.5 du/ acre	70	30	0	0
LACEY UGA						
AGRICULTURE	N/A	1 du/ 5 acres	100	0	0	0
BUSINESS PARK	N/A					
CENTRAL BUSINESS DISTRICT	2%	20 du/ acre	0	100	0	0
HIGH DENSITY RESIDENTIAL	N/A	18 du/ acre	0	100	0	0
HAWKS PRAIRIE BUSINESS DISTRICT	2%	20 du/ acre	0	100	0	0
LAKE	N/A	N/A	N/A	N/A	N/A	N/A
LOW DENSITY RESIDENTIAL (LD 0-4)	N/A	3.5 du/ acre	100	0	0	0
LOW DENSITY RESIDENTIAL (LD 3-6)	N/A	4 du/ acre	90	5	5	0
LIGHT INDUSTRY	N/A	N/A	N/A	N/A	N/A	N/A
LIGHT INDUSTRIAL/COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
MODERATE DENSITY RESIDENTIAL	N/A	8 du/ acre	40	60	0	0
MINERAL EXTRACTION	N/A	N/A	N/A	N/A	N/A	N/A
MCALLISTER GEOLOGICALLY SENSITIVE AREA	N/A	4 du/ acre	90	5	5	0
MIXED USE HIGH DENSITY CORRIDOR	N/A	18 du/ acre	0	100	0	0
MIXED USE MODERATE DENSITY CORRIDOR	N/A	10 du/ acre	0	100	0	0
NEIGHBORHOOD COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
OPEN SPACE INSTITUTIONAL	N/A	N/A	N/A	N/A	N/A	N/A
VILLAGE CENTER	2%	4 du/ acre	65	0	35	0

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Table 20 continued: Assumptions for 1998/99 Population and Employment Forecast Residential Land Supply.

JURISDICTION / ZONING DISTRICT	Mixed-Use % Residential	Forecast Estimated Density	Housing Distribution (%)		
			Single- family	Multi- family	Man. Home
OLYMPIA					
COMMERCIAL SERVICE-HIGH DENSITY	N/A	N/A	N/A	N/A	N/A
DOWNTOWN BUSINESS	2% of site	30 du/ acre	0	100	0
GENERAL COMMERCIAL	N/A	18 du/ acre	0	100	0
HIGH DENSITY CORRIDOR-1	N/A	N/A	N/A	N/A	N/A
HIGH DENSITY CORRIDOR-2	N/A	N/A	N/A	N/A	N/A
HIGH DENSITY CORRIDOR-3	N/A	N/A	N/A	N/A	N/A
HIGH DENSITY CORRIDOR-4	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A
LIGHT INDUSTRIAL	N/A	N/A	N/A	N/A	N/A
MANUFACTURED HOUSING PARK	N/A	5 du/ acre	0	0	100
MIXED RESIDENTIAL (MR-10-18)	N/A	10 du/ acre	40	60	0
MIXED RESIDENTIAL (MR-7-13)	N/A	8 du/ acre	70	30	0
MEDICAL SERVICE	25%	16 du/ acre	0	100	0
NEIGHBORHOOD CENTER	N/A	N/A	N/A	N/A	N/A
NEIGHBORHOOD RETAIL	N/A	N/A	N/A	N/A	N/A
NEIGHBORHOOD VILLAGE	N/A	7 du/ acre	70	30	0
PROFESSIONAL OFFICE/RESIDENTIAL MULTIFAMILY	50%	18 du/ acre	0	100	0
PLANNED UNIT DEVELOPMENT - Evergreen	N/A	10 du/ acre	40	60	0
SINGLE-FAMILY RESIDENTIAL (R-4)	N/A	3 du/ acre	90	0	10
SINGLE-FAMILY RESIDENTIAL (R-4-8)	N/A	5 du/ acre	100	0	0
TWO-FAMILY RESIDENTIAL (R-6-12)	N/A	6 du/ acre	85	5	10
RESIDENTIAL LOW IMPACT (RLI 2-4)	N/A	N/A	N/A	N/A	N/A
RESIDENTIAL MULTIFAMILY (RM-18)	N/A	18 du/ acre	0	50	50
RESIDENTIAL MULTIFAMILY (RM-24)	N/A	24 du/ acre	0	50	50
HIGH RISE MULTIFAMILY	N/A	18 du/ acre	0	100	0
RESIDENTIAL MIXED USE	50%	18 du/ acre	0	100	0
URBAN CENTER	25% of site	30 du/ acre	0	100	0
URBAN VILLAGE	N/A	6 du/ acre	30	70	0
URBAN WATERFRONT	10% of site	30 du/ acre	0	100	0
OLYMPIA UGA					
COMMUNITY ORIENTED SHOPPING CENTER	25%	8 du/ acre	40	60	0
GENERAL COMMERCIAL	5% of site	18 du/ acre	0	100	0
LIGHT INDUSTRIAL/COMMERCIAL	N/A	N/A	N/A	N/A	N/A
MIXED RESIDENTIAL (MR-7-13)	N/A	8 du/ acre	40	60	0
MEDICAL SERVICE	50%	18 du/ acre	0	100	0
NEIGHBORHOOD RETAIL	N/A	N/A	N/A	N/A	N/A
NEIGHBORHOOD VILLAGE	N/A	7 du/ acre	70	30	0
PROFESSIONAL OFFICE/ RESIDENTIAL MULTIFAMILY	50%	18 du/ acre	0	100	0
RESIDENTIAL (R 1/5)	N/A	N/A	N/A	N/A	N/A
SINGLE-FAMILY RESIDENTIAL (R-4)	N/A	3 du/ acre	90	0	10
SINGLE-FAMILY RESIDENTIAL (R-4-8)	N/A	5 du/ acre	100	0	0
TWO-FAMILY RESIDENTIAL (R-6-12)	N/A	10 du/ acre	40	60	0
RESIDENTIAL LOW IMPACT (RLI 2-4)	N/A	N/A	N/A	N/A	N/A
RESIDENTIAL MULTIFAMILY (RM-18)	N/A	10 du/ acre	40	60	0

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DocumentationTable 20 continued: Assumptions for 1998/99 Population and
Employment Forecast Residential Land Supply.

JURISDICTION / ZONING DISTRICT	Mixed-Use % Residential	Forecast Estimated Density	Housing Distribution (%)		
			Single- family	Multi- family	Man. Home
RAINIER					
CORE COMMERCIAL	N/A	N/A	N/A	N/A	N/A
HIGH DENSITY RESIDENTIAL	N/A	2 du/acre	50	0	50
LOW DENSITY RESIDENTIAL	N/A	1 du/ acre	50	0	50
MEDIUM DENSITY RESIDENTIAL	N/A	2 du/acre	50	0	50
PARKS	N/A	N/A	N/A	N/A	N/A
PUBLIC FACILITY	N/A	N/A	N/A	N/A	N/A
ROW	N/A	N/A	N/A	N/A	N/A
TRAILS/OPEN SPACE	N/A	N/A	N/A	N/A	N/A
RAINIER UGA					
NEIGHBORHOOD CONVENIENCE COMMERCIAL	N/A	N/A	N/A	N/A	N/A
RURAL RESIDENTIAL/RESOURCE 1/5	N/A	2 du/ acre	50	0	50
TENINO					
COMMERCIAL 1	N/A	N/A	N/A	N/A	N/A
COMMERCIAL 2	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A
MULTIFAMILY RESIDENTIAL	N/A	8 du/ acre	45	10	45
PARKS/OPEN SPACE	N/A	N/A	N/A	N/A	N/A
SINGLE-FAMILY RESIDENTIAL	N/A	6 du/ acre	50	0	50
SINGLE-FAMILY/DUPLEX RESIDENTIAL	N/A	4 du/ acre	65	0	35
TENINO UGA					
PLANNED INDUSTRIAL PARK	N/A	N/A	N/A	N/A	N/A
RURAL RESIDENTIAL/RESOURCE 1/5	N/A	6 du/ acre	50	0	50
YELM					
COMMERCIAL	N/A	N/A	N/A	N/A	N/A
HEAVY COMMERCIAL	N/A	N/A	N/A	N/A	N/A
LARGE LOT COMMERCIAL	N/A	N/A	N/A	N/A	N/A
CENTRAL BUSINESS DISTRICT	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A
INSTITUTIONAL DISTRICT	N/A	N/A	N/A	N/A	N/A
MASTER PLANNED COMMUNITY	N/A	3 du/ acre	50	50	0
PARKS/OPEN SPACE	N/A	N/A	N/A	N/A	N/A
HIGH DENSITY RESIDENTIAL (R-14)	N/A	14 du/ acre	0	90	10
LOW DENSITY RESIDENTIAL (R-4)	N/A	3 du/ acre	90	0	10
MODERATE DENSITY RESIDENTIAL (R-6)	N/A	5 du/ acre	50	40	10
YELM UGA					
ARTERIAL COMMERCIAL	N/A	N/A	N/A	N/A	N/A
LIGHT INDUSTRIAL	N/A	N/A	N/A	N/A	N/A
RURAL RESIDENTIAL 1/5	N/A	N/A	N/A	N/A	N/A
GRAND MOUND UGA					
RESIDENTIAL (R 3-6/1)	N/A	3 du/ acre	50	10	40

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Documentation**Table 20 continued: Assumptions for 1998/99 Population and Employment Forecast Residential Land Supply.**

JURISDICTION / ZONING DISTRICT	Mixed-Use	Forecast	Housing Distribution (%)		
	% Residential	Estimated Density	Single- family	Multi- family	Man. Home
TUMWATER					
AIRPORT RELATED INDUSTRY	N/A	N/A	N/A	N/A	N/A
COMMUNITY SERVICES	N/A	N/A	N/A	N/A	N/A
GREENBELT	N/A	N/A	N/A	N/A	N/A
GENERAL COMMERCIAL	N/A	N/A	N/A	N/A	N/A
HISTORIC COMMERCIAL	N/A	N/A	N/A	N/A	N/A
HEAVY INDUSTRIAL	N/A	N/A	N/A	N/A	N/A
PROPERTIES LISTED ON TUMWATER REGISTER OF HISTORIC PLACES	N/A	N/A	N/A	N/A	N/A
LIGHT INDUSTRIAL	N/A	N/A	N/A	N/A	N/A
MULTIFAMILY HIGH DENSITY RESIDENTIAL	N/A	24 du/ acre	0	100	0
MULTIFAMILY MEDIUM DENSITY RESIDENTIAL	N/A	14 du/ acre	0	90	10
MIXED USE	10%	14 du/ acre	0	90	10
NEIGHBORHOOD COMMERCIAL	N/A	N/A	N/A	N/A	N/A
OPEN SPACE	N/A	N/A	N/A	N/A	N/A
RESIDENTIAL/SENSITIVE RESOURCE	N/A	3 du/ acre	90	0	10
SINGLE-FAMILY LOW DENSITY RESIDENTIAL	N/A	6 du/ acre	85	5	10
SINGLE-FAMILY MEDIUM DENSITY RESIDENTIAL	N/A	8 du/ acre	40	60	0
TUMWATER UGA					
BUSINESS PARK	N/A	N/A	N/A	N/A	N/A
COMMERCIAL DEVELOPMENT	N/A	N/A	N/A	N/A	N/A
GREENBELT	N/A	N/A	N/A	N/A	N/A
GENERAL COMMERCIAL	N/A	N/A	N/A	N/A	N/A
HEAVY INDUSTRIAL	N/A	N/A	N/A	N/A	N/A
LIGHT INDUSTRIAL	N/A	N/A	N/A	N/A	N/A
MULTIFAMILY HIGH DENSITY RESIDENTIAL	N/A	24 du/ acre	0	100	0
MULTIFAMILY MEDIUM DENSITY RESIDENTIAL	N/A	14 du/ acre	0	90	10
NEIGHBORHOOD COMMERCIAL	N/A	N/A	N/A	N/A	N/A
OPEN SPACE	N/A	N/A	N/A	N/A	N/A
RESIDENTIAL/SENSITIVE RESOURCE	N/A	3 du/ acre	90	0	10
SINGLE-FAMILY LOW DENSITY RESIDENTIAL	N/A	5 du/ acre	100	0	0
SINGLE-FAMILY MEDIUM DENSITY RESIDENTIAL	N/A	6 du/ acre	85	5	10

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4. Use of the Build-Out Factor

To reflect market behavior, as some sub-areas begin to fill up, demand is shifted to other ones. This reallocation is conducted based on an index POPFOR calculates, called the “Build-Out Factor.” At the start of each forecast calculation cycle, POPFOR compares for each sub-area the *demand* for new units by type, with the available *capacity* for new units by type. The demand is divided by the supply (capacity) to create the Build-Out Factor (BOF). The BOF is used as a guide to help determine growth allocations at the subarea level.

For the first forecast period, the demand for new units by type is allocated to each sub-area based on the growth share by type for the period of record (e.g., 1990-98). These unit allocations are then divided by the unit capacities by type for each sub-area to derive the BOF for the first forecast period. For the second forecast period and beyond, growth allocations by type—and hence the resulting BOFs—are subject to adjustment by the analyst to maintain BOFs for each subarea that are considered reasonable.

Two rules-of-thumb are applied to evaluate reasonableness of a BOF and decide whether to revise the allocations. First, the analyst compares the BOFs for comparable sub-areas to see if they are radically different from one another. For example, a typical single-family BOF for an urban sub-area in Thurston County might be in the range of 0.15 to 0.20. If POPFOR calculates BOFs of 0.10 and 0.25 for two adjacent urban subareas, growth allocations may be adjusted to increase one and lower the other so that both will fall in the more typical range. But if such a difference in BOFs appears between two widely separated subareas—for example, in Lacey and Tumwater—it may be left unadjusted. This is because the subareas are intended to reflect the actual differences between the various housing sub-markets in Thurston County. Local knowledge is also taken into account to decide whether to make such an adjustment; for example, knowledge of a major housing development that is partly finished and is expected to continue building out.

Second, the analyst looks at the magnitude of the BOF. The assumption is made that a BOF of 0.25 or below reflects a housing market with sufficient supply to avoid over-heated housing prices. Another way to look at a BOF of 0.25 is that it means new housing construction will use up 25% of the buildable capacity in the subarea during the five-year forecast period. Under typical real estate market conditions, not all buildable land is actually available for sale at any given time. When prices rise, more is made available; when prices fall, less is made available. The 25% assumption is used as a convenient marker, rather than as a scientifically-derived rule.

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If the BOF rises above 0.25, the allocation will be adjusted even if it means shifting growth farther afield—e.g., from Lacey to Tumwater—since it would be unlikely that one part of Thurston County would experience overheated prices while another did not.

Within POPFOR, growth shifts are conducted only within housing types. For example, no shift would be made from single-family to multifamily if Lacey single-family capacity were to fill; rather, single-family growth would be shifted from Lacey to Tumwater, as long as Tumwater had sufficient capacity.

However, such a shift of housing type might be made outside of POPFOR. When the 1999 forecast was conducted, it became apparent that a shift from manufactured housing to multifamily was called for. This was because in rural southern Thurston County, half the new housing starts are manufactured homes. Running the POPFOR model indicated that if half the land was allocated for manufactured housing, BOFs for manufactured homes would escalate to high levels in these subareas by the end of the forecast period, implying escalating land prices. Since manufactured homes represent the low-cost end of the owner-occupied housing market, it was felt this would be an unreasonable scenario. It was at this point that the housing demand by dwelling type was adjusted to partly reflect the Puget Sound pattern described above.

5. Non-Residential Uses in Residential Districts

Within residentially zoned areas, part of the land area normally is consumed by non-residential land uses, such as churches, parks, day care centers, and schools. As POPFOR assigns growth of dwellings to an area, it subtracts an amount of land corresponding to the zoning density, and it subtracts a little more based on the percent of land area that will be non-residential. For example, if 40 units are assigned at 4 units per acre, 10 acres will be subtracted for the land consumed by the dwellings, and another 7.5% — or 0.75 acres — for non-residential uses, as shown in Table 21.

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Documentation**Table 21: Amount of land subtracted for non-residential uses
in residential zoning districts.**

Zoning Density	Percent Non-residential	Zoning Density	Percent Non-residential	Zoning Density	Percent Non-residential
20 acres	0.00%	4/a.	7.50%	16/a.	0.00%
5 acres	0.00%	5/a.	7.50%	18/a.	0.00%
2 acres	0.00%	6/a.	7.50%	20/a.	0.00%
1/a.	2.50%	6.5/a.	7.50%	24/a.	0.00%
1.5/a.	2.50%	7/a.	7.50%	30/a.	0.00%
2/a.	5.00%	8/a.	7.50%	Infill	0.00%
3/a.	5.00%	10/a.	5.00%		
3.5/a.	5.00%	14/a.	2.50%		

6. Redevelopment, Infill, and Accessory Dwellings

POPFOR also incorporates special routines to assign growth as redevelopment (new dwellings on land that is already developed), and to accommodate accessory dwelling units, a particular type of infill or redevelopment. Redevelopment is assumed to occur on land zoned for mixed commercial/residential uses, such as in the commercial centers of Olympia, Lacey, and Tumwater. A certain percent of the total land area within these districts (not just vacant residential land) is assumed to be developed for multifamily uses in future years. This area is assigned as acres to one of the density zones, such as the 30 per acre zone. POPFOR then assigns growth to those areas and subtracts land consumption, just like any other zone.

Accessory dwelling units (ADUs) are handled a bit differently. ADUs are permitted only as accessory to single-family homes, and only in the urban areas, not in the rural parts of the county. Therefore pseudo “acres” are assigned to the “infill” cell in the POPFOR matrix, equal to the total number of single-family homes in each FAZ. These pseudo-acres are assigned only within the cities and the urban areas of the county. A pseudo “density” of ADUs is set at 0.08 units per pseudo-acre, a factor calculated to create roughly one ADU per thousand single-family homes per year. This assumed scale of market demand for this niche product is approximately the rate observed from 1995 to 1998, when the model was programmed. All ADUs are classed as multifamily units in the POPFOR model, and are otherwise treated the same as other multifamily units for purposes of calculating demand and supply.

At the end of each forecast calculation cycle, acres are normally subtracted to account for land consumption for new development. In the case of ADUs, however, the available pseudo-acres in the “infill” cell is reset based instead on the newly-recalculated number of single-family homes in each FAZ.

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7. Demolitions and Conversion

Over time, the existing housing stock is diminished by demolitions and by conversions of housing to other uses. POPFOR incorporates a rate of demolition and conversion of 0.1% per year (or 0.5% per 5-year forecast cycle). That is, the number of existing dwellings is reduced by this amount per year, and must be replaced through the supply of new dwellings. This rate is applied uniformly for all dwelling types and in all parts of the County. The effect of this factor is most noticeable in older neighborhoods in the urban area, where there may be little or no new growth because they are just about full. Because of this factor, and because of declining household sizes, POPFOR will often project a small decline of population in such neighborhoods.

C. Commercial and Industrial Land Demand

1. Overview

The Population and Employment Forecast provided an estimate of the number of employees forecast to work in Thurston County in the year 2025. The forecast did not, however, determine how many acres of land would be required to support the growth in employment. This was estimated through the Buildable Lands program and required two major conversion factors. First, the number of employees was converted to the amount of square feet in commercial or industrial floor space needed to accommodate the employees. Second, the amount of square feet was then converted to land needs in acres. Both of these conversion factors relied heavily on existing development trends found in Thurston County.

2. Employees Per Square Foot of Commercial or Industrial Floor Space

The commercial and industrial inventory developed for the Buildable Lands program was benchmarked to the year 2000. For this reason, forecast base-year employment data from the year 1998 was inflated to represent 2000 employment figures. Using parameters developed during the population and employment allocation phase, employees were designated to either site-based or home-based employment sites. An assumption was made that the distribution of site-based and home-based employment would remain constant over the next 25 years. Using this assumption, the number of site-based employees for the year 2025 was estimated by employment sector (Table 22).

Home-based employment sites refer to those employees who choose to work out of home offices. The land needs for this segment of employees is accounted for in the residential land supply.

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Once an estimate for site-based employment was established, this segment of the employment sector was constrained by those employees accommodated in buildings. For instance, it was felt that those employees employed in the resources sector, forestry, fishing, mining, and agriculture, could not be allocated based on the presence or absence of buildings – that much of this sector was land-based. Other types of activities that were not based on building square feet were group quarters, employment associated with apartment complexes, and some golf courses. Using these criteria, an estimate of employees per square foot was developed by generalized employment sector (Table 23).

Table 22: Estimate of site-based and home-based employment for Thurston County

Industrial Sector	Calibration Factors: 1998 - 1999					Base and Forecast Totals					Home- and Site-Based Allocations				
	A Total Employ. Estimate 1998 ¹	B Covered Employ. 1999 ²	C Total Employ. 1999 ²	D C/B Inflation Factor 1999	E Covered Employ. 2000 ²	F J * D Total Employ. 2000	G Total Employ. Forecast 2025 ¹	H Home- based ¹ % 2000	I Site- based ¹ % 2000	J Home- based Employ. 2000	K Site- based Employ. 2000	L Home- based Employ. 2025	M Site- based Employ. 2025		
Resources	2,603	1,313	2,608	1.99	1,148	2,280	2,499	0%	100%	0	2,280	0	2,499		
Agriculture, except ag. services	1,789	N/A	N/A	N/A	869	N/A	1,500	0%	100%	N/A	N/A	N/A	1,500		
Forestry, fishing and hunting	721	N/A	N/A	N/A	217	N/A	800	0%	100%	N/A	N/A	N/A	800		
Mining	93	N/A	N/A	N/A	62	N/A	200	0%	100%	N/A	N/A	N/A	200		
Construction	5,344	3,738	6,190	1.66	3,462	5,732	9,050	50%	50%	1,135	4,597	1,792	7,257		
Manufacturing	4,403	4,257	5,003	1.18	4,052	4,762	6,455	0%	100%	0	4,762	0	6,455		
Durable goods	1,935	N/A	N/A	N/A	N/A	N/A	3,003	0%	100%	N/A	N/A	N/A	3,003		
Non-durable goods	2,468	N/A	N/A	N/A	N/A	N/A	3,452	0%	100%	N/A	N/A	N/A	3,452		
Trans., Comm., Utilities	2,338	2,029	2,789	1.38	2,007	2,759	3,797	0%	100%	0	2,759	0	3,797		
Trans., except trans. services	1,187	N/A	N/A	N/A	1,087	N/A	1,850	0%	100%	N/A	N/A	N/A	1,850		
Communications	900	N/A	N/A	N/A	739	N/A	1,597	0%	100%	N/A	N/A	N/A	1,597		
Utilities	251	N/A	N/A	N/A	181	N/A	350	0%	100%	N/A	N/A	N/A	350		
Wholesale Trade	2,586	2,155	2,706	1.26	2,099	2,636	4,399	0%	100%	0	2,636	0	4,399		
Retail Trade	17,795	14,520	18,347	1.26	14,169	17,904	30,998	0%	100%	0	17,904	0	30,998		
Auto dealers & service stations	1,812	N/A	N/A	N/A	1,455	N/A	3,198	0%	100%	N/A	N/A	N/A	3,198		
Eating and drinking places	6,171	N/A	N/A	N/A	4,881	N/A	9,152	0%	100%	N/A	N/A	N/A	9,152		
Retail, except restaurants & auto	9,812	N/A	N/A	N/A	7,833	N/A	18,648	0%	100%	N/A	N/A	N/A	18,648		

Sources: ¹Population and Employment Forecast for Thurston County, 1999, TRPC; ²Covered Employment 1999, 2000 - Washington Department of Employment Securities; Total Employment - U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Measurement Division; TRPC estimates.

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Table 22: continued
Estimate of site-based and home-based employment for Thurston County

	Calibration Factors: 1998 - 1999					Base and Forecast Totals					Home- and Site-Based Allocations				
	A	B	C	D	E	F	G	H	I	J	K	L	M		
	Total Employ. Estimate 1998 ¹	Covered Employ. 1999 ²	Total Employ. 1999 ²	C / B Inflation Factor 1999	Covered Employ. 2000 ²	J * D Total Employ. 2000	Total Employ. Forecast 2025 ¹	Home- based ¹ %	Site- based ¹ %	Home- based Employ. 2000	Site- based Employ. 2000	Home- based Employ. 2025	Site- based Employ. 2025		
Industrial Sector															
Finance, Insurance, Real Estate	6,428	3,071	7,042	2.29	2,883	6,612	8,053	36%	64%	1,331	5,281	1,621	6,432		
Finance	1,840	N/A	N/A	N/A	1,481	N/A	N/A	0%	100%	N/A	N/A	N/A	N/A		
Insurance	1,038	N/A	N/A	N/A	545	N/A	N/A	50%	50%	N/A	N/A	N/A	N/A		
Real estate	3,551	N/A	N/A	N/A	857	N/A	N/A	50%	50%	N/A	N/A	N/A	N/A		
Services	30,908	19,435	31,083	1.60	19,828	31,712	53,439	0%	100%	0	31,712	0	53,439		
Consumer Services	13,401	N/A	N/A	N/A	8,777	N/A	21,271	0%	100%	N/A	N/A	N/A	21,271		
Private Schools	280	N/A	N/A	N/A	280	N/A	375	0%	100%	N/A	N/A	N/A	375		
Producer Services	8,263	N/A	N/A	N/A	3,563	N/A	15,242	0%	100%	N/A	N/A	N/A	15,242		
Health Services	8,964	N/A	N/A	N/A	7,208	N/A	16,551	0%	100%	N/A	N/A	N/A	16,551		
Federal government - civilian	850	1,008	988	0.98	1,031	1,011	1,248	0%	100%	0	1,011	0	1,248		
State government	21,972	21,639	22,283	1.03	22,431	23,099	25,803	0%	100%	0	23,099	0	25,803		
State government, except edu.	20,598	N/A	N/A	N/A	N/A	N/A	23,953	0%	100%	N/A	N/A	N/A	23,953		
State education	1,374	N/A	N/A	N/A	N/A	N/A	1,850	0%	100%	N/A	N/A	N/A	1,850		
Local Government	9,724	9,726	9,802	1.01	10,028	10,107	15,053	0%	100%	0	10,107	0	15,053		
Total Employment	104,951	82,890	108,841		83,139	108,613	160,795			2,466	106,147	3,413	157,382		

Sources: ¹Population and Employment Forecast for Thurston County, 1999, TRPC; ²Covered Employment 1999, 2000 - Washington Department of Employment Securities; Total Employment - U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Measurement Division; TRPC estimates.

Table 23: Allocation of site-based employment to work sites, by generalized employment sector.

Generalized Employment Category	Employment Allocation - Base Year 2000				Allocation to Buildings	
	Total Employment 2000	Site-based Employment Target 2000 (Allocation)	Employment Allocated to Buildings only ¹	Employment Allocated to Buildings only ¹ as % of Total	Total Square Feet ¹ (1,000) (buildings only)	Generalized Employee / 1,000 SF ratio (buildings only)
Resources	2,280	2,280	316	13.8%	1,264	0.25
Industrial	15,890	14,754	14,355	90.3%	6,132	2.34
Commercial	90,443	89,113	88,456	97.8%	34,663	2.56
Total	108,613	106,147	103,017	94.8%	41,951	2.46

Explanation: Generalized employment sectors. Resources include agriculture, forestry, fishing, and mining. Industrial includes mining, construction, manufacturing, transportation, communications, utilities, and wholesale trade. Commercial includes retail trade, finance, insurance, real estate, services, and government. ¹Site-based employment excluding group quarters, apartment complexes, golf courses, and farm lands.

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3. Forecast Growth in Employees and Estimates of Building Space Needs

Estimates of forecast growth by jurisdiction for the planning horizon of year 2000 to 2025 were estimated based on employee allocation by jurisdiction from the Population and Employment Forecast.

Employment sectors were generalized to allow comparison to existing building inventory. Resources include agriculture, forestry, fishing, and mining. Industrial includes mining, construction, manufacturing, transportation, communications, utilities, and wholesale trade.

Commercial includes retail trade, finance, insurance, real estate, services, and government (Table 24).

Once a generalized employee per square foot ratio was established by generalized employment sector in Thurston County, it was applied to the forecast growth in employees accommodated in buildings. In this manner, building needs, in square feet, were established by jurisdiction in Thurston County (Table 25).

The building needs for the resources sector were very small compared to the other generalized employment sectors. This is due, in part, to the way that buildings on farm lands are tracked. Only those buildings containing industrial activity, such as processing plants, are contained in the commercial and industrial building inventory. Barns and other common sorts of out-buildings on resource lands were not tracked by the Assessor's office in a consistent manner, and were therefore not included in the Buildable Lands commercial and industrial building inventory. In addition, the growth in employees in the resources sector is relatively small compared to the commercial and industrial sectors.

4. Gross Floor Area Per Gross Acre

Once the gross floor area needs were established from number of employees, an estimate of the needs in gross acres was required. The commercial and industrial building table contains a field describing the year that the structure was built. Using this field, all buildings in the table (other structures such as parking were excluded) were summed to provide information on number of stories and square foot gross floor area per gross acre by decade for both the commercial (Table 26) and industrial sector (Table 27).

The following trends were observed in commercial building activity:

- There has been a relatively steady increase in the amount of commercial building activity in Thurston County over the last 100 years. This trend is somewhat deceiving, however, as those buildings that have been demolished and replaced, or undergone substantial redevelopment over this interval of time are no longer

Table 24: Forecast growth in employees by Jurisdiction.

Jurisdiction	1998 Employment			2025 Projected Employment			Expected Growth 2000-2025 ¹		
	Resources	Industrial	Commercial	Resources	Industrial	Commercial	Resources	Industrial	Commercial
Bucoda	0	3	18	0	6	35	0	2	16
City	12	1,791	14,005	24	3,623	22,300	11	1,696	7,681
UGA	472	971	2,701	397	1,719	5,568	-70	693	2,655
Total	484	2,762	16,705	421	5,342	27,868	-59	2,389	10,336
Olympia	356	3,552	49,004	63	5,068	68,950	-271	1,403	18,469
City	15	355	1,072	15	584	2,472	0	212	1,296
UGA	371	3,907	50,076	78	5,652	71,422	-271	1,616	19,764
Rainier	0	40	197	0	77	330	0	34	123
City	0	4	4	0	13	26	0	8	20
UGA	0	45	201	0	90	356	0	42	143
Total	0	43	443	0	85	706	0	39	243
Tenino	0	1	3	0	5	31	0	4	26
City	0	44	446	0	90	737	0	43	269
UGA	0	1	3	0	5	31	0	4	26
Total	0	44	446	0	90	737	0	43	269
Tumwater	76	3,357	10,583	106	4,958	18,288	27	1,482	7,134
City	3	1,134	871	4	2,041	1,751	1	840	814
UGA	80	4,491	11,455	110	6,999	20,039	28	2,323	7,949
Total	80	4,491	11,455	110	6,999	20,039	28	2,323	7,949
Yelm	0	529	2,178	0	789	4,017	0	240	1,703
City	91	48	218	77	95	635	-14	44	386
UGA	91	577	2,396	77	884	4,652	-14	284	2,089
Total	22	82	636	47	163	1,036	23	75	370
Grand Mound UGA	444	9,316	76,428	193	14,606	114,626	-233	4,898	35,369
Total Cities	603	2,594	5,505	539	4,621	11,519	-59	1,877	5,568
Total UGAs	1,048	11,910	81,933	733	19,227	126,145	-292	6,774	40,937
Total Urban Areas	1,555	2,761	5,743	1,767	4,474	8,449	196	1,586	2,506
Rural Unincorporated County	2,603	14,671	87,677	2,499	23,701	134,594	-96	8,361	43,442
Thurston County Total	2,603	14,671	87,677	2,499	23,701	134,594	-96	8,361	43,442

Source: Population and Employment Forecast for Thurston County, 1999, TRPC.

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those employment sites outside the city limits but within the long-term Urban Growth Management boundary. Assumes constant 1998 City and UGA boundaries. ¹Adjusted to year 2000 by interpolation.

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Table 25: Relationship of employees to building space.

Jurisdiction	Growth Accommodated in Buildings ¹						Generalized Employee per 1,000 SF Ratio						Building SF (1,000) Needed 2000-2025					
	Resources ²		Industrial		Commercial		Resources		Industrial		Commercial		Resources		Industrial		Commercial	
	0	2	16	16	2.34	2.34	0.25	0.25	2.34	2.34	2.56	2.56	0	1	6	6	1	6
Bucoda	0	2	16	16	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	1	6	6	1	6	6
Lacey	2	1,532	7,503	7,503	2.34	2.34	0.25	0.25	2.34	2.56	2.56	6	655	2,931	655	655	2,931	2,931
UGA	0	626	2,593	2,593	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	267	1,013	267	267	1,013	1,013
Total	2	2,158	10,096	10,096	2.34	2.34	0.25	0.25	2.34	2.56	2.56	6	922	3,944	922	922	3,944	3,944
Olympia	0	1,268	18,040	18,040	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	542	7,047	542	542	7,047	7,047
UGA	0	192	1,266	1,266	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	82	494	82	82	494	494
Total	0	1,460	19,306	19,306	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	624	7,541	624	624	7,541	7,541
Rainier	0	31	120	120	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	13	47	13	13	47	47
UGA	0	7	20	20	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	3	8	3	3	8	8
Total	0	38	140	140	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	16	55	16	16	55	55
Tenino	0	35	238	238	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	15	93	15	15	93	93
UGA	0	4	26	26	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	2	10	2	2	10	10
Total	0	39	263	263	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	17	103	17	17	103	103
Tumwater	4	1,339	6,969	6,969	2.34	2.34	0.25	0.25	2.34	2.56	2.56	15	572	2,722	15	572	2,722	2,722
UGA	0	759	795	795	2.34	2.34	0.25	0.25	2.34	2.56	2.56	1	324	311	1	324	311	311
Total	4	2,098	7,764	7,764	2.34	2.34	0.25	0.25	2.34	2.56	2.56	16	897	3,033	16	897	3,033	3,033
Yelm	0	217	1,663	1,663	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	93	650	0	93	650	650
UGA	0	40	377	377	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	17	147	0	17	147	147
U Total	0	257	2,040	2,040	2.34	2.34	0.25	0.25	2.34	2.56	2.56	0	110	797	0	110	797	797
Grand Mound UGA	3	68	362	362	2.34	2.34	0.25	0.25	2.34	2.56	2.56	13	29	141	13	29	141	141
Total Cities	5	4,425	34,548	34,548	2.34	2.34	0.25	0.25	2.34	2.56	2.56	21	1,891	13,495	21	1,891	13,495	13,495
Total UGAs	3	1,695	5,439	5,439	2.34	2.34	0.25	0.25	2.34	2.56	2.56	13	724	2,125	13	724	2,125	2,125
Total Urban Areas	9	6,120	39,987	39,987	2.34	2.34	0.25	0.25	2.34	2.56	2.56	34	2,615	15,620	34	2,615	15,620	15,620
Rural Unincorporated County	27	1,433	2,447	2,447	2.34	2.34	0.25	0.25	2.34	2.56	2.56	108	612	956	108	612	956	956
Thurston County Total	36	7,553	42,434	42,434	2.34	2.34	0.25	0.25	2.34	2.56	2.56	143	3,228	16,576	143	3,228	16,576	16,576

Explanation: UGA is unincorporated Urban Growth Area. UGA figures include those employment sites outside the city limits but within the long-term Urban Growth Management boundary. Assumes constant 1998 City and UGA boundaries. Generalized employment sectors. Resources include agriculture, forestry, fishing, and mining. Industrial includes mining, construction, manufacturing, transportation, communications, utilities, and wholesale trade. Commercial includes retail trade, finance, insurance, real estate, services, and government. ¹Site-based employment excluding group quarters, apartment complexes, golf courses, and farm lands. ²Negative values adjusted to 0.

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present in the inventory.* The inventory, therefore, represents an estimate of the age of the building stock at one period in time, rather than the amount of buildings built during each time period.

- The average number of stories is 1.18, and has never risen above 1.60. If anything, the trend has been toward less multi-storied commercial buildings, and more one-storied buildings over the last few decades. This could be because multi-storied buildings are a greater investment, and therefore less likely to undergo demolition or redevelopment.
- The gross floor area per gross acre has decreased since the 1950s. This is likely to be a result of the need for on-site parking as the commercial sector developed away from the established downtown core.

The last five years of commercial building activity were not found to be very representative. Building activity tends to be cyclical, with each cycle lasting about five to ten years. This can be seen in Table 26 and Table 27. It was determined that the overall average gross floor area per gross acre was more typical of development style than the last five years of activity.

The following trends were observed in industrial building activity:

- There are very few industrial buildings in the database before 1960.
- Industrial buildings tend to consist of only one story, regardless of when they were built.

Trends in building activity in the last five years appear to be relatively consistent with the countywide average.

5. Snapshot of Development by Jurisdiction

Thurston County is made up of a variety of unique shopping, office, and industrial districts, each with their own set of development characteristics. A snapshot of development trends of both commercial and industrial activity, by jurisdiction, captures some of the similarities and differences between jurisdictions (Table 28; Table 29).

* The economic life-cycle of a commercial building can be as little as twenty or twenty-five years. At the end of an economic life-cycle the building may be either completely overhauled or replaced. In either situation the building will be shown in the Assessor database with a new "effective age."

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**Table 26: Development trends in commercial building activity
Thurston County, 1900-1999.**

Time Interval	Total Building Floor Area (square feet)	Ground Floor Area (square feet)	Average Number of Stories	Developed Land (acres)	1,000 Square Feet Gross Floor Area Per Gross Acre
1900-1909	643,538	489,808	1.31	65	9.97
1910-1919	399,480	300,400	1.33	13	31.02
1920-1929	940,948	648,615	1.45	38	24.71
1930-1939	834,104	519,697	1.60	83	10.10
1940-1949	1,037,357	711,748	1.46	71	14.60
1950-1959	1,024,097	783,149	1.31	107	9.56
1960-1969	2,558,763	2,321,369	1.10	318	8.04
1970-1979	4,417,458	4,120,387	1.07	662	6.68
1980-1989	5,794,352	4,873,926	1.19	717	8.09
1990-1999	7,164,457	6,266,644	1.14	784	9.14
Total/Average	24,814,553	21,035,743	1.18	2,857	8.68

Last Thirty Years of Activity, by 5 year Interval

1970-1974	1,993,408	1,793,273	1.11	391	5.10
1975-1979	2,424,050	2,327,114	1.04	271	8.94
1980-1984	2,097,239	1,889,654	1.11	249	8.41
1985-1989	3,697,113	2,984,272	1.24	467	7.91
1990-1994	3,997,663	3,454,412	1.16	367	10.90
1995-1999	3,166,794	2,812,232	1.13	417	7.59

Trends in Industrial Growth

Time Interval	Total Building Floor Area (square feet)	Ground Floor Area (square feet)	Average Number of Stories	Developed Land (acres)	1,000 Square Feet Gross Floor Area Per Gross Acre
1900-1909	12,717	12,717	1.00	0	27.95
1910-1919	14,070	12,870	1.09	1	9.83
1920-1929	53,334	53,334	1.00	5	11.79
1930-1939	17,116	17,116	1.00	3	6.77
1940-1949	121,551	111,251	1.09	5	25.43
1950-1959	53,281	49,235	1.08	7	7.58
1960-1969	544,489	537,289	1.01	89	6.13
1970-1979	1,206,443	1,204,643	1.00	170	7.10
1980-1989	1,026,723	1,025,343	1.00	178	5.77
1990-1999	2,462,148	2,435,037	1.01	266	9.25
Total/Average	5,511,872	5,458,835	1.01	723	7.62

Source: Buildable lands work program.

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**Table 27: Development trends in industrial building activity
Thurston County, 1900-1999.**

Time Interval	Total Building Floor Area (square feet)	Ground Floor Area (square feet)	Average Number of Stories	Developed Land (acres)	1,000 Square Feet Gross Floor Area Per Gross Acre
1900-1909	643,538	489,808	1.31	65	9.97
1910-1919	399,480	300,400	1.33	13	31.02
1920-1929	940,948	648,615	1.45	38	24.71
1930-1939	834,104	519,697	1.60	83	10.10
1940-1949	1,037,357	711,748	1.46	71	14.60
1950-1959	1,024,097	783,149	1.31	107	9.56
1960-1969	2,558,763	2,321,369	1.10	318	8.04
1970-1979	4,417,458	4,120,387	1.07	662	6.68
1980-1989	5,794,352	4,873,926	1.19	717	8.09
1990-1999	7,164,457	6,266,644	1.14	784	9.14
Total/Average	24,814,553	21,035,743	1.18	2,857	8.68

Last Thirty Years of Activity, by 5 year Interval

1970-1974	1,993,408	1,793,273	1.11	391	5.10
1975-1979	2,424,050	2,327,114	1.04	271	8.94
1980-1984	2,097,239	1,889,654	1.11	249	8.41
1985-1989	3,697,113	2,984,272	1.24	467	7.91
1990-1994	3,997,663	3,454,412	1.16	367	10.90
1995-1999	3,166,794	2,812,232	1.13	417	7.59

Trends in Industrial Growth

Time Interval	Total Building Floor Area (square feet)	Ground Floor Area (square feet)	Average Number of Stories	Developed Land (acres)	1,000 Square Feet Gross Floor Area Per Gross Acre
1900-1909	12,717	12,717	1.00	0	27.95
1910-1919	14,070	12,870	1.09	1	9.83
1920-1929	53,334	53,334	1.00	5	11.79
1930-1939	17,116	17,116	1.00	3	6.77
1940-1949	121,551	111,251	1.09	5	25.43
1950-1959	53,281	49,235	1.08	7	7.58
1960-1969	544,489	537,289	1.01	89	6.13
1970-1979	1,206,443	1,204,643	1.00	170	7.10
1980-1989	1,026,723	1,025,343	1.00	178	5.77
1990-1999	2,462,148	2,435,037	1.01	266	9.25
Total/Average	5,511,872	5,458,835	1.01	723	7.62

Last Five Years of Activity

1970-1974	472,889	472,889	1.00	68	6.93
1975-1979	733,554	731,754	1.00	102	7.22

Source: Buildable lands work program

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Table 28: Development snapshot of commercial building activity in Thurston County jurisdictions, 2000.

Jurisdiction	Total Building Floor Area (square feet)	Ground Floor Area (square feet)	Average Number of Stories	Developed Land including Parking (acres)	1,000 Square Feet Gross Floor Area Per Gross Acre
Bucoda	Total	24,875	1.17	2	10.69
Lacey	City	5,061,702	1.15	647	7.82
	UGA	563,793	1.01	196	2.88
Total	5,625,495	4,965,499	1.13	843	6.67
Olympia	City	14,343,381	1.24	1,022	14.03
	UGA	267,475	1.08	47	5.74
Total	14,610,856	11,769,519	1.24	1,069	13.67
Rainier	City	117,801	1.00	25	4.76
	UGA	5,968	1.00	4	1.60
Total	123,769	123,769	1.00	28	4.35
Tenino	City	178,995	1.01	14	13.03
	UGA	1,000	1.00	0	3.00
Total	179,995	178,315	1.01	14	12.79
Tumwater	City	2,861,897	1.09	493	5.81
	UGA	634,851	1.00	151	4.19
Total	3,496,748	3,257,174	1.07	644	5.43
Yelm	City	996,174	1.02	250	3.98
	UGA	47,644	1.00	14	3.53
Total	1,043,818	1,025,636	1.02	264	3.96
Grand Mound UGA	Total	169,143	1.01	40	4.24
Total Cities	23,584,825	19,848,174	1.19	2,453	9.61
Total UGAs	1,689,874	1,661,156	1.02	451	3.74
Total Urban Areas	25,274,698	21,509,330	1.18	2,905	8.70
Rural Unincorporated County	1,123,156	1,109,714	1.01	532	2.11
Thurston County Total	26,397,854	22,619,044	1.17	3,437	7.68

Source: Buildable Lands Program, TRPC

Note: Includes only development at the parcel level; does not include parking on adjacent parcels. Inventory of buildings existing in the year 2000. Excludes schools, churches, colleges, jails, libraries, the airport, golf courses, recreation parcels, horse arenas, reservoirs, and tanks.

Table 29: Development snapshot of industrial building activity in Thurston County jurisdictions, 2000.

Jurisdiction	Total Building Floor Area (square feet)	Ground Floor Area (square feet)	Average Number of Stories	Developed Land including Parking (acres)	1,000 Square Feet Gross Floor Area Per Gross Acre
Total	1,200	1,200	1.00	0	2.83
Bucoda					
City	838,507	829,927	1.01	114	7.38
UGA	388,420	386,620	1.00	63	6.14
Total	1,226,927	1,216,547	1.01	177	6.94
Olympia					
City	988,415	969,161	1.02	85	11.65
UGA	152,907	152,907	1.00	13	11.57
Total	1,141,322	1,122,068	1.02	98	11.64
Rainier					
City	0	0	0.00	0	0.00
UGA	0	0	0.00	0	0.00
Total	0	0	0.00	0	0.00
Tenino					
City	40,309	39,109	1.03	3	11.59
UGA	1,618	1,618	1.00	1	3.00
Total	41,927	40,727	1.03	4	10.44
Turnwater					
City	2,213,582	2,196,325	1.01	207	10.67
UGA	725,067	724,167	1.00	114	6.34
Total	2,938,649	2,920,492	1.01	322	9.13
Yelm					
City	150,551	150,551	1.00	28	5.40
UGA	16,800	16,800	1.00	5	3.30
Total	167,351	167,351	1.00	33	5.07
Grand Mound UGA	86,916	82,870	1.05	23	3.75
Total Cities	4,232,564	4,186,273	1.01	438	9.67
Total UGAs	1,371,728	1,364,982	1.00	220	6.25
Total Urban Areas	5,604,292	5,551,255	1.01	657	8.53
Rural Unincorporated County	525,280	525,280	1.00	174	3.01
Thurston County Total	6,129,572	6,076,535	1.01	832	7.37

Source: Buildable Lands Program, TRPC

Note: Includes only development at the parcel level; does not include parking on adjacent parcels. Inventory of buildings existing in the year 2000. Excludes schools, churches, colleges, jails, libraries, the airport, golf courses, recreation parcels, horse arenas, reservoirs, and tanks.

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Appendix A**Buildable
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Documentation****6. Land Needs**

Gross floor area per gross acre (FAR) by jurisdiction is highly variable for both commercial and industrial growth. As the larger cities of Olympia, Lacey, and Tumwater do not develop in the same manner as the rural County or the small cities and towns of Thurston County, it made sense to treat them individually. For this reason, current estimates of FAR were used as the minimum thresholds in determining land demand. The building (square feet) needs established in Table 25 were multiplied by the FAR measured in Table 28 and Table 29 to determine land needs (Table 30).

Table 30: Land Demand by Zoning to Accommodate Projected Commercial and Industrial Growth.

Jurisdiction	1,000 Square Feet Building Demand			1,000 Square Feet Gross Floor Area Per Gross			Land Demand (acres)		
	Industrial Zoning	Commercial Zoning ¹	Total	Industrial Buildings	Commercial Buildings	Total	Industrial Zoning	Commercial Zoning	Total
Bucoda	1	6	7	2.83	10.69	13.52	0	1	13.52
Lacey	655	2,509	3,164	7.88	7.82	15.70	89	321	410
UGA	267	915	1,182	6.14	2.88	9.02	44	318	362
Total	922	3,424	4,346	6.94	6.67	13.61	132	639	201
Olympia	542	6,225	6,767	11.65	14.03	25.68	46	444	490
UGA	82	446	528	11.57	5.74	17.31	7	78	85
Total	624	6,671	7,295	11.64	13.67	25.31	54	521	60
Rainier	13	42	55	11.59	4.76	16.35	1	9	10
UGA	3	7	10	3.00	1.60	4.60	1	4	5
Total	16	49	65	10.44	4.35	14.79	2	13	15
Tenino	15	84	99	11.59	13.03	24.62	1	6	7
UGA	2	9	11	3.00	3.00	6.00	1	3	4
Total	17	93	110	10.44	12.79	23.23	2	9	11
Turnwater	572	2,458	3,030	10.67	5.81	16.48	54	423	477
UGA	324	281	605	6.34	4.19	10.53	51	67	118
Total	897	2,738	3,635	9.13	5.43	14.56	105	490	159
Yelm	93	587	680	5.40	3.98	9.38	17	147	164
UGA	17	133	150	3.30	3.53	6.83	5	38	43
Total	110	720	830	5.07	3.96	9.03	22	185	207
Grand Mound UGA	29	128	157	3.75	4.24	8.00	8	30	38
Total Cities	1,891	11,911	13,802	9.67	9.61	19.28	209	1,351	1,560
Total UGAs	724	1,918	2,642	6.25	3.74	10.00	116	538	654
Total Urban Areas	2,615	13,829	16,444	8.53	8.70	17.23	325	1,889	2,214
Rural Unincorporated County	612	785	1,397	3.01	2.11	5.12	203	372	575
Thurston County Total	3,228	14,614	17,841	7.37	7.68	15.05	528	2,261	2,789

Explanation: Commercial demand in square feet is allocated between commercial (including mixed use) and residential zoning to account for the location of schools, churches, and other institutional buildings in residential zoning, which represents approximately 5/6 of the employment growth forecast for local government. Growth forecast for the three colleges in Thurston County is expected to be accommodated on existing parcels, and is therefore removed. Rainier industrial floor to area ratio assumed to be similar to Tenino due to lack of data.

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Appendix B**Small Area
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2003****Previous Estimates**

Thurston Regional Planning Council (TRPC) has developed small area population and dwelling unit estimates since the release of the 1998/1999 Population and Employment Forecast in 1999. These estimates were calibrated to Intercensal Estimates of Cities, Towns, and Thurston County, provided by the Washington State Office of Financial Management (OFM) on an annual basis, and the 1990 Census dwelling unit count.

Estimates are used by local governments and businesses for budgeting and planning purposes. In the past, estimates have been made available by the 1999 Forecast Analysis Zone (FAZ) structure. This data structure contained imbedded information by various geographies, including: jurisdictions, urban growth areas, planning areas, forecast areas, watersheds, basins, census tracts, block groups, and blocks, fire districts, school districts, and elementary school boundaries (where available).

The final release of these estimates was the first quarter 2002. In the summer of 2002, the U.S. Bureau of Census released a count of housing units by type. This allowed for an overhaul of the small area population and dwelling unit estimate methodology.

Current Estimates

For the years 2003 and forward, TRPC will release population and dwelling unit estimates annually in early July for the first quarter of the current calendar year. TRPC's data release is dependent on the availability of the State Office of Financial Management population estimates at the city/town and county level.

Consistency with Existing Estimates

In the years 2001-2002, many new data sets were made available by Federal and State sources that precipitated the overhaul of the small area population and dwelling unit estimates at TRPC. At the same time, the 2002-2004 update of TRPC's Population and Employment Forecast allowed for the development of a revised data structure.

The revised estimates will be compatible with the following:

- 2000 Census Summary File 1 (SF1) Population at the City, Town, and County level.
- 2000 Census Summary File 3 (SF3) Dwelling Unit Estimates, by type, at the Block Group level.
- 2000 Census SF3 Group Quarter Estimates at the Block Group level.
- 2000 Census SF3 Occupancy and Household Size rates by Census Tract, adjusted slightly to calibrate at the City, Town and County level.

Appendix B

Small Area Population and Dwelling Unit Estimates: Technical Documentation 2003

- 1994-1999 Office of Financial Management (OFM) Intercensal Population estimates at the City, Town, and County level.
- 2001-current year OFM Intercensal Population and Total Dwelling Unit Estimates at the City, Town, and County level.

The revised estimates will **not** be compatible with:

- Census yearly estimates of county population unless this information is incorporated into OFM estimates.

Methodology

TRPC's Small Area Estimates are developed in an ACCESS database through a Visual Basic for Application (VBA) and Sequel-server (SQL) based program.

The estimates rely on a five-step process.

Step 1: Update Population and Dwelling Unit Totals from OFM

Tables are opened for manual updates. The population totals are generally available from OFM by June. The dwelling unit totals are generally available with the release of the OFM document Population Trends. Population estimates will be updated on a preliminary basis until such a time as the dwelling unit estimates are released.

Step 2: Update Building Permits

Residential building permits are tracked by TRPC at the tax-parcel or site address level. By April of each year, all permits from the previous calendar year have been collected from individual jurisdictions, entered into TRPC's database, and geocoded through the geographic information system. Two data files result from this process, one that contains information from the original permits, titled tblResidentialPermits, and a location file that contains supplemental information added by TRPC titled tblResidentialGIS. These files must be imported into the Small Area Database prior to running the small area estimates for the current year.

Step 3: 1994-2000 Dwelling Estimate

Dwelling units for the year 2000 were collected from Thurston County Assessor Files and an aerial photograph analysis at the tax-parcel level during the data collection phase of the Buildable Lands Program. The dwelling unit estimate was calibrated to the 2000 Census dwelling unit count at the Census Block Group Level.

Appendix B**Small Area
Population
and Dwelling
Unit
Estimates:
Technical
Documentation
2003**

Dwelling unit estimates for the years preceding Census 2000 were developed after the year 2000 count was calibrated to Census files.

Rather than relying solely on building permit information, a more comprehensive look at development trends was completed at the tax-parcel level. This evaluation includes isolating activity in mobile home parks – where units are removed and replaced periodically, demolitions, conversions, and permits for units that were never built. This type of evaluation is only possible at the end of the development period. The dwelling unit estimates were not adjusted to OFM estimates.

Dwellings are estimated by type, for single-family, multifamily, and manufactured homes. It is not anticipated that there will be any further updates to these estimates..

Step 4: Post Census 2000 Dwelling Estimate

Residential building activity provides the basis of small area dwelling unit estimates for post Census 2000. New dwelling units are located by address or tax-parcel number to the individual tax-parcel. The completion date of residential dwellings is estimated based on the permit issue date, type of dwelling unit, and type of jurisdiction. Each dwelling permitted during a given year adds to the total dwelling unit estimate. Each dwelling unit demolished during a given year is removed from the total dwelling unit estimate.

Annexations: Annexations are tracked by TRPC in a GIS coverage that can be related to the tax-parcel data layer. Annexations are coded with a pre-annexation jurisdiction (generally Thurston County or an unincorporated urban growth area) and date the annexation was approved by OFM. The approval date of annexation may vary by several years from the date of submission to OFM.

Calibration: OFM generates dwelling unit estimates at the city/town and county level annually. The TRPC estimates are calibrated to OFM control totals for the post Census 2000 years. There is a time lag between release of population and dwelling unit estimates by OFM, so the initial dwelling unit estimates are considered preliminary.

Step 5: Population Estimate

Household population is estimated by multiplying the number of dwelling units (by type) by a household size factor.

Household size for 2000 is derived from Census counts of dwellings and population by type at the Census Tract level. It is then adjusted slightly to calibrate to Census Population counts at the City/Town and County level.

Appendix B

Small Area Population and Dwelling Unit Estimates: Technical Documentation 2003

Household size for pre- and post-Census 2000 years is adjusted slightly at the City/Town and County level to account for decreasing household size over time. This adjustment is applied at the tax-parcel level.

Group Quarters counts were available from Census 2000, and located to specific tax-parcels. Intercensal Group Quarters estimates were provided by OFM for pre-Census years. Until further information on group quarters is released by OFM for post-Census 2000 years, group quarters will not be adjusted.

Availability

Small Area Population and Dwelling Unit Estimates are available for the years 1994 and on, by single-family, multifamily, and manufactured homes, by the following geographies:

- Jurisdictions including Tribal Land, Cities, Towns, and Unincorporated Urban Growth Areas
- 1990 Traffic Analysis Zone Structure
- 1995 Traffic Analysis Zone Structure
- 1998 Traffic Analysis Zone Structure
- 2001 Traffic Analysis Zone Structure
- 998 Planning Areas
- 2000 Planning Areas
- 1990 Census Tracts
- 1990 Census Block Groups
- 1990 Census Blocks
- 2000 Census Tracts
- 2000 Census Block Groups
- 2000 Census Blocks
- WRIA
- Watersheds
- Basins
- Sub-basins (where available)
- School Districts
- High Schools (where available)
- Middle Schools (where available)
- Elementary Schools (where available)
- Fire Districts
- LOTT planning areas
- 2000 Zoning Districts
- Townships, sections, ranges

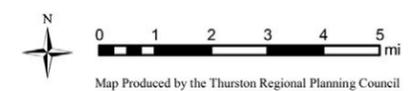


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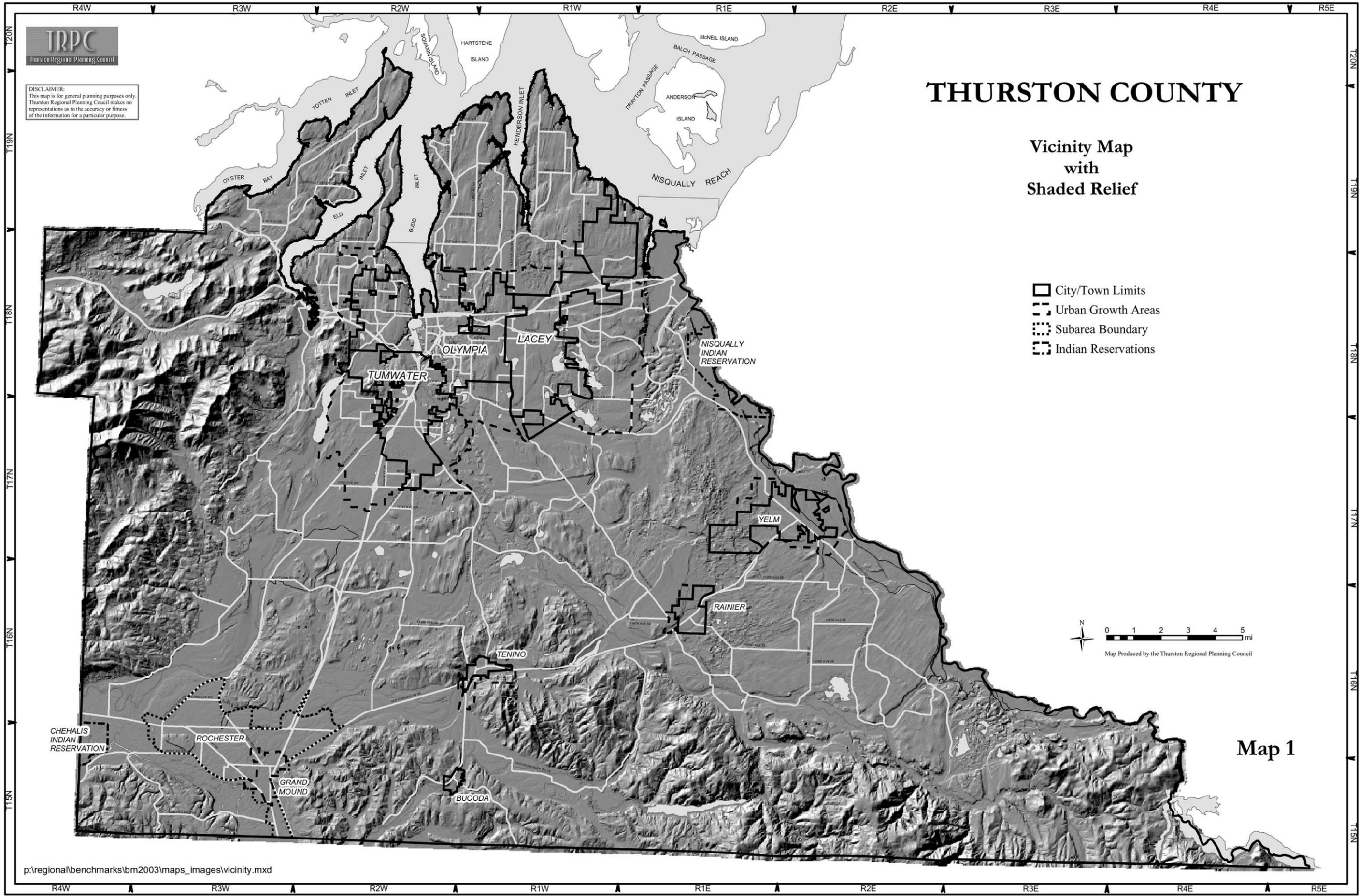
THURSTON COUNTY

Vicinity Map with Shaded Relief

- City/Town Limits
- Urban Growth Areas
- Subarea Boundary
- Indian Reservations



Map 1

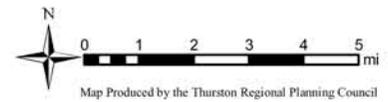


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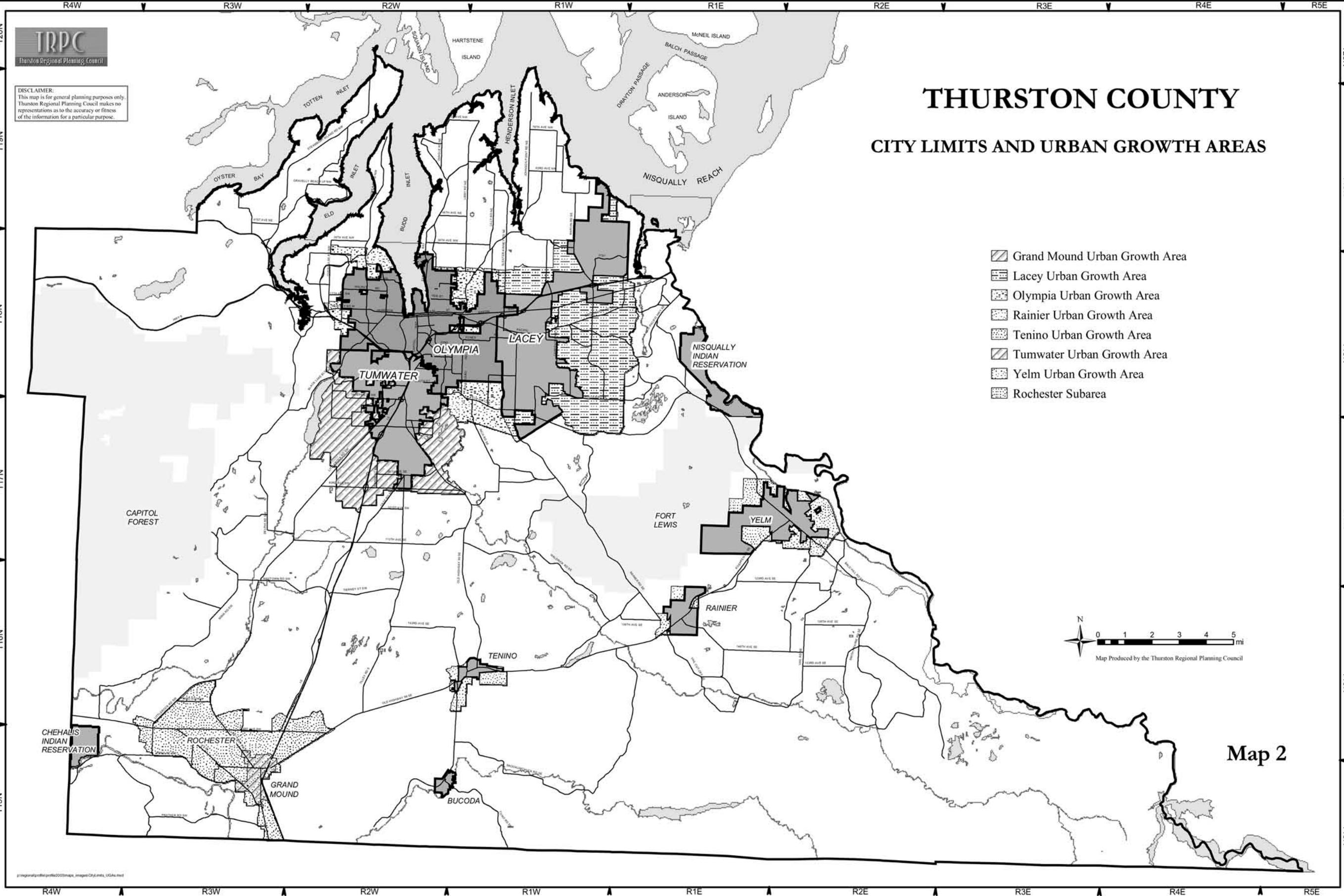
THURSTON COUNTY

CITY LIMITS AND URBAN GROWTH AREAS

-  Grand Mound Urban Growth Area
-  Lacey Urban Growth Area
-  Olympia Urban Growth Area
-  Rainier Urban Growth Area
-  Tenino Urban Growth Area
-  Tumwater Urban Growth Area
-  Yelm Urban Growth Area
-  Rochester Subarea



Map 2





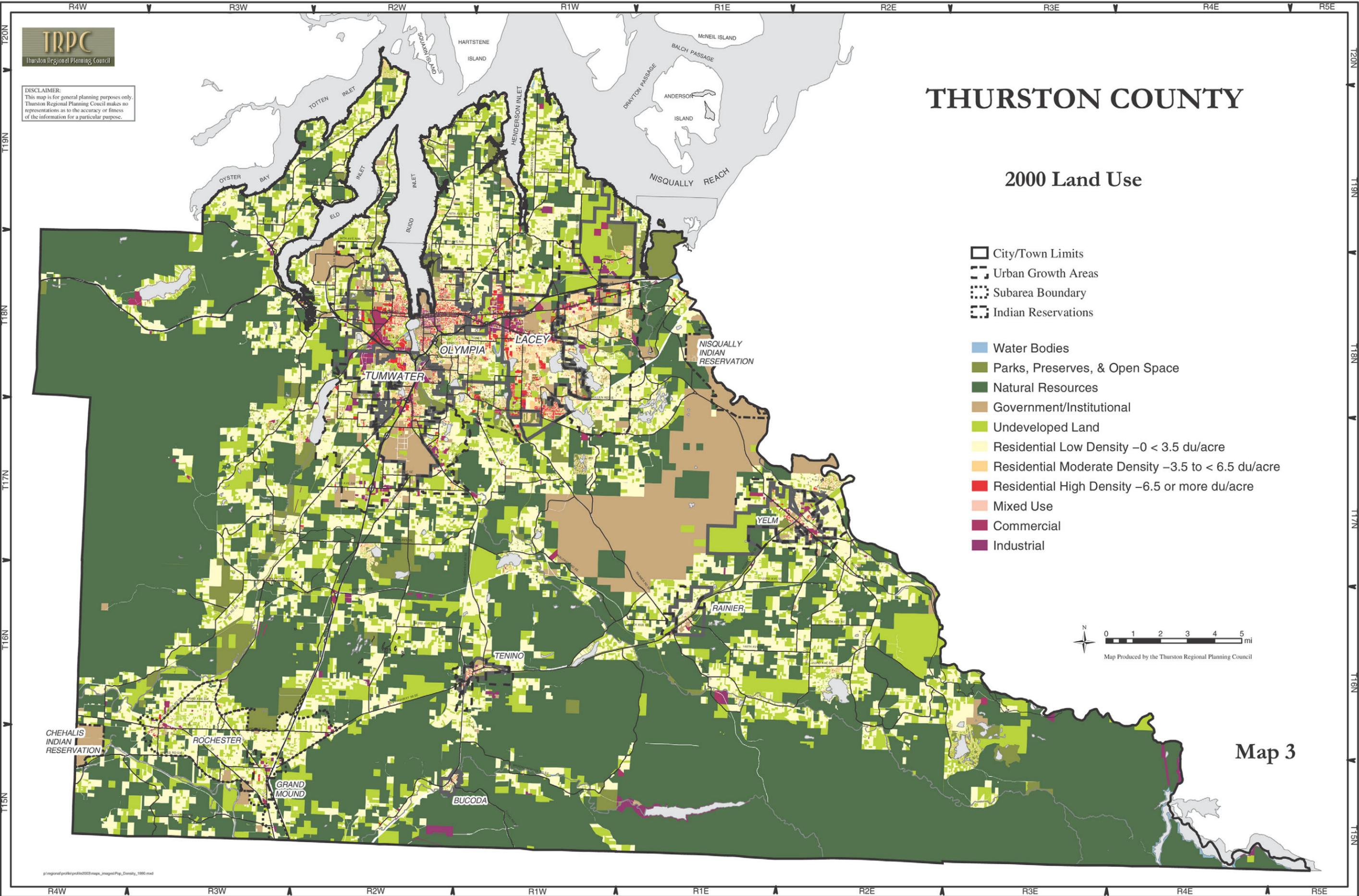
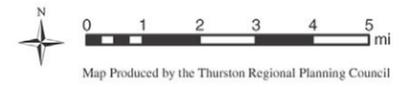
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THURSTON COUNTY

2000 Land Use

- City/Town Limits
- Urban Growth Areas
- Subarea Boundary
- Indian Reservations

- Water Bodies
- Parks, Preserves, & Open Space
- Natural Resources
- Government/Institutional
- Undeveloped Land
- Residential Low Density - 0 < 3.5 du/acre
- Residential Moderate Density - 3.5 to < 6.5 du/acre
- Residential High Density - 6.5 or more du/acre
- Mixed Use
- Commercial
- Industrial



Map 3

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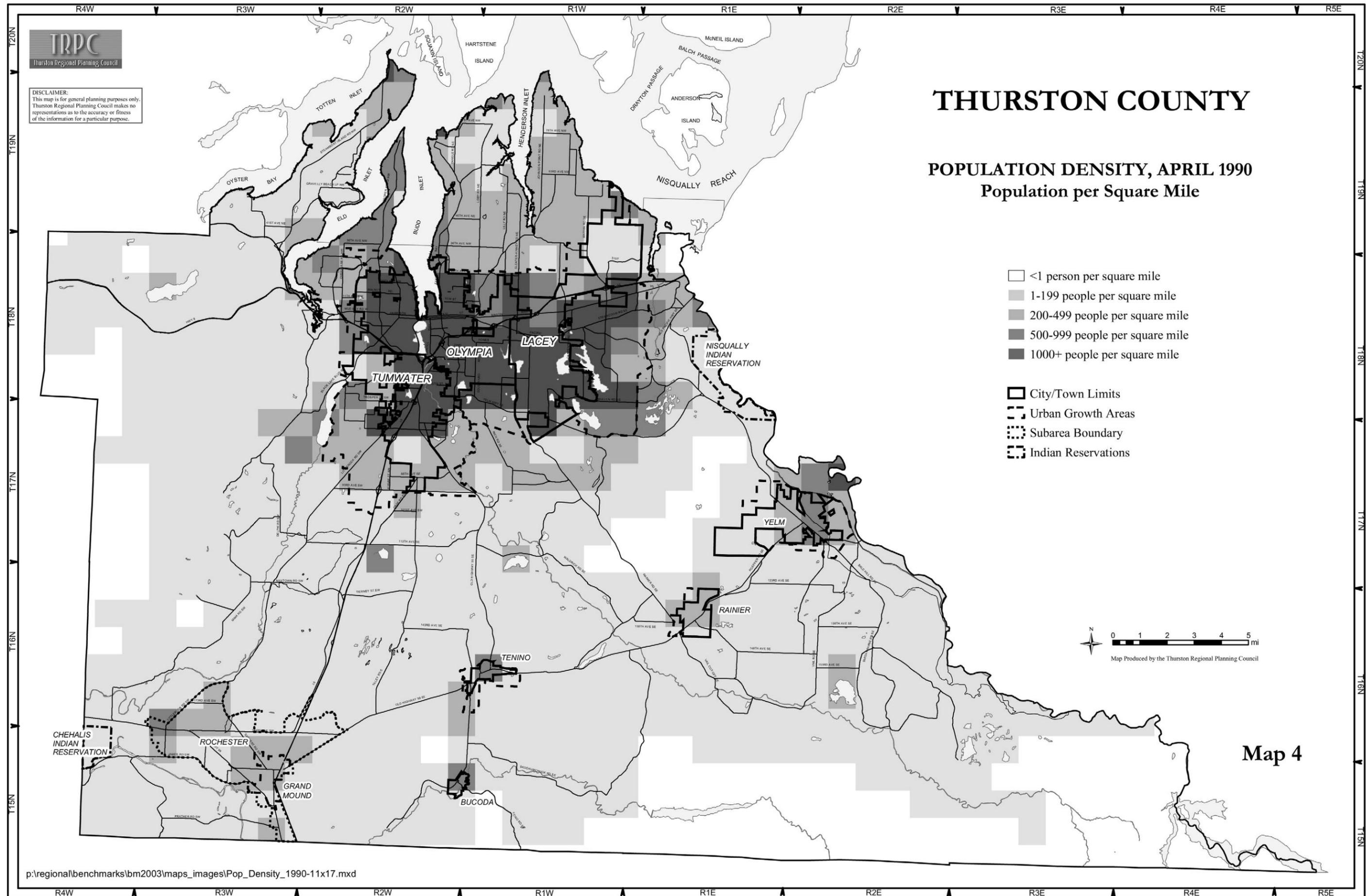
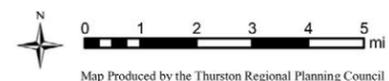
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THURSTON COUNTY

POPULATION DENSITY, APRIL 1990 Population per Square Mile

- <1 person per square mile
- 1-199 people per square mile
- 200-499 people per square mile
- 500-999 people per square mile
- 1000+ people per square mile

- City/Town Limits
- Urban Growth Areas
- Subarea Boundary
- Indian Reservations



Map 4



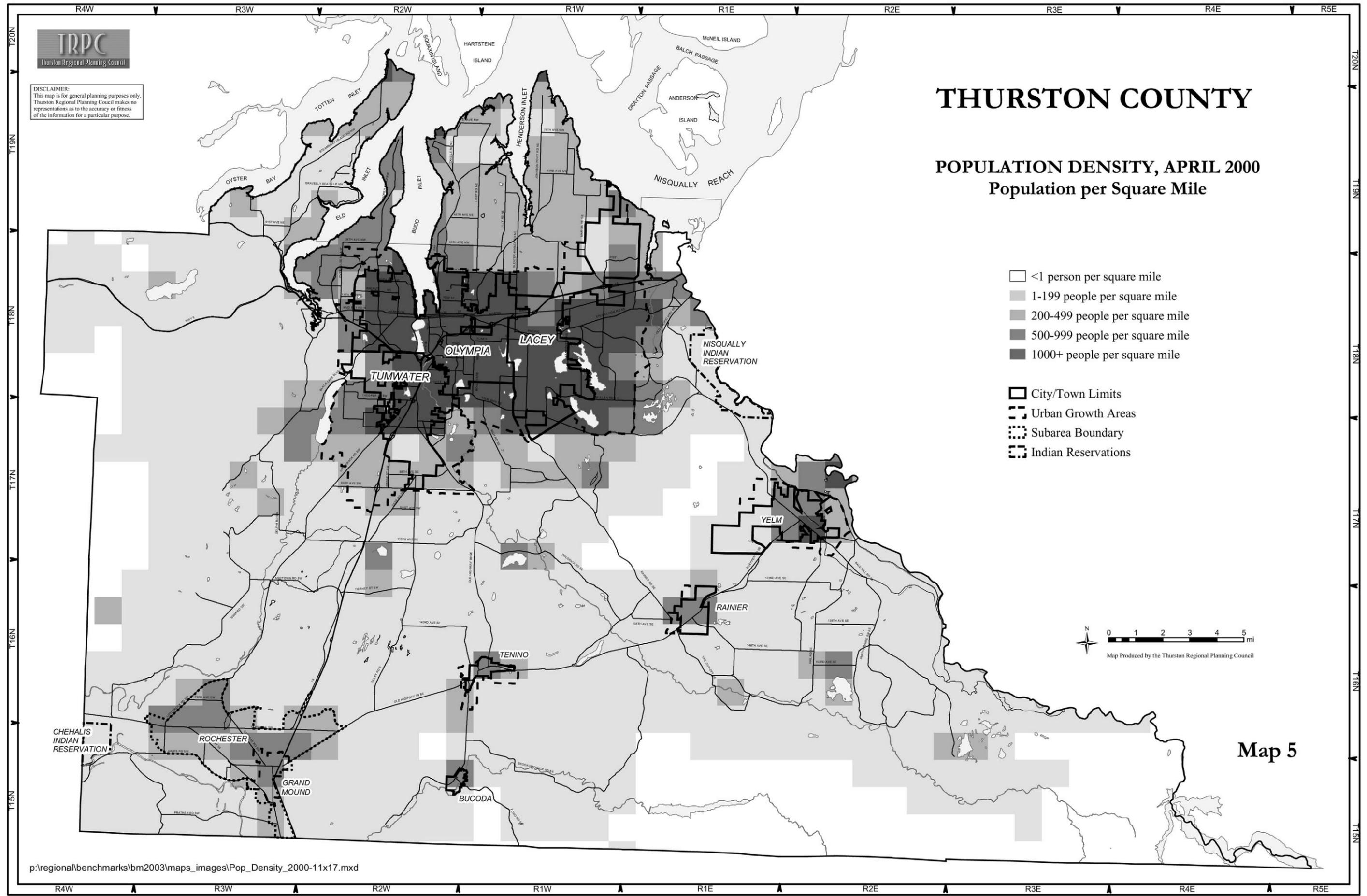
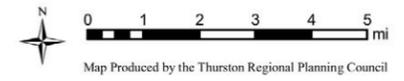
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THURSTON COUNTY

POPULATION DENSITY, APRIL 2000 Population per Square Mile

- <1 person per square mile
- 1-199 people per square mile
- 200-499 people per square mile
- 500-999 people per square mile
- 1000+ people per square mile

- City/Town Limits
- Urban Growth Areas
- Subarea Boundary
- Indian Reservations



Map 5



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THURSTON COUNTY

FORECAST POPULATION DENSITY, APRIL 2025 Population per Square Mile

- <1 person per square mile
- 1-199 people per square mile
- 200-499 people per square mile
- 500-999 people per square mile
- 1000+ people per square mile

- City/Town Limits
- Urban Growth Areas
- Subarea Boundary
- Indian Reservations



Map Produced by the Thurston Regional Planning Council

Map 6

