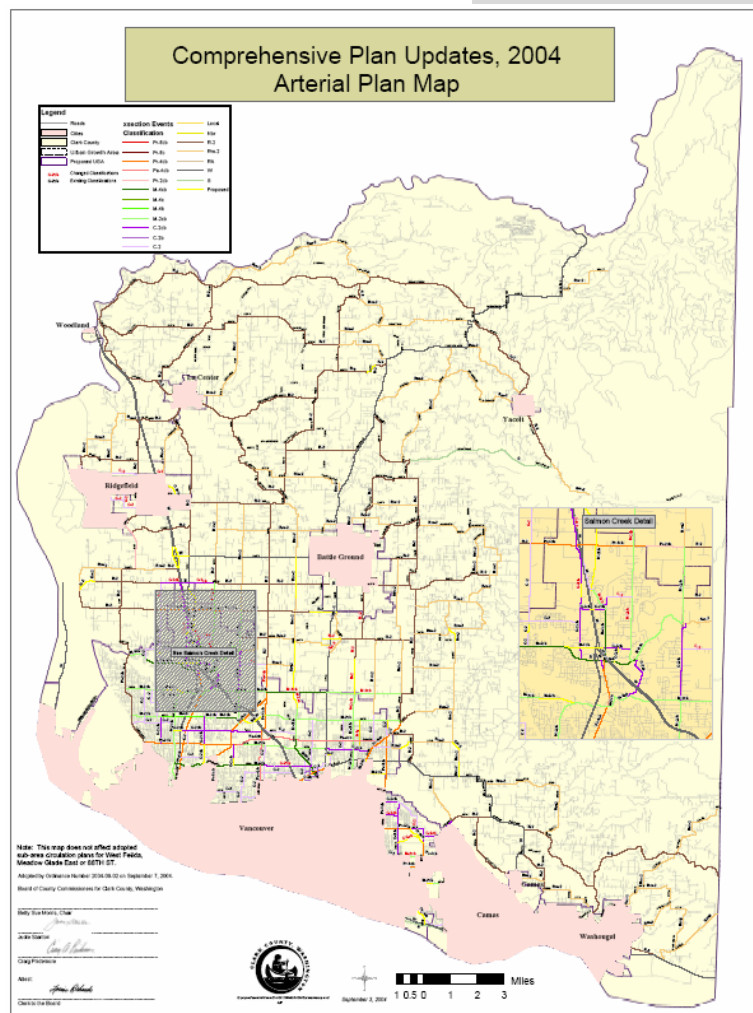




**proud past, promising future**

**CLARK COUNTY**  
WASHINGTON

# BUILDABLE LANDS REPORT, August 2007 (AMENDED)



**Restore human legs as a means of travel.  
Pedestrians rely on food for fuel  
and  
need no special parking facilities.**  
Lewis Mumford

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## EXECUTIVE SUMMARY

This is the second report in meeting the requirements of RCW 36.70A.215, The Growth Management Act (GMA) Review and Evaluation Program. The first Clark County buildable lands report was published in August 2002. Clark County reports on residential and employment densities achieved since adoption of the 1994 Comprehensive Plan. That report documented the growth patterns observed during the first five years of planning under the GMA. This second report relies on building activity data and other available information for observations. The County no longer publishes information on all of the 23 key indicators listed in the 1994 plan, but has a continuing obligation under the buildable lands legislation (RCW 36.70A.215) and under current policies and ordinances to monitor the number of permits issued and actual density.

Clark County coordinated with its cities to compile data that shows the progress of each community's comprehensive plan toward the goals of sprawl reduction and concentrated urban growth identified in the Growth Management Act. Each community collects development data, which is forwarded to the county and added to a central database. The database and a website are made possible through the cooperation of each city and through a competitive grant from the Washington Department of Community Trade and Economic Development. Please see Appendix A for the website address.

The primary sources of data are new commercial, industrial and residential building permits, subdivisions and short plats, and site plan reviews that have been issued or reviewed from June 30, 2000 through June 30, 2006. Clark County's Geographic Information System (GIS) was used to link parent parcel serial numbers taken from new building permits issued to identify parcels within city and urban growth area boundaries, acreage and critical lands coverage.

In this report, residential, commercial and industrial acres developed are shown as **net acreage**. The Commercial and Industrial acreage does not reflect the following types of infrastructure: public right-of-way, private streets, public utility easements, open space tracts, or parks.

Following are the major observations presented in this report:

- During the analysis period (2000-2006) Clark County overall achieved a split of 78.4% single-family development and 21.6% multi-family development. Within the Vancouver city limits, the split is 47/53 between single-family and multi-family.
- Residential development within the urban growth areas of Clark County consumed 3,425 acres with a density of 6 dwelling units per acre. Based on the inventory of vacant and buildable land (vlm) there are 8,856 net buildable acres that can accommodate 63,495 households plus 6,500 households not captured by the vlm for a total capacity of 69,995 households. At 2.59 persons per household this land area will accommodate 181,288 persons.
- There were 2,900 building permits issued in the rural area on 16,109 acres. Given the underlying zoning, the total vacant and development potential in the rural area is 7,387 lots. Assuming 2.59 persons per household, there is potential for additional rural capacity of 19,132 persons.
- The review and evaluation has indicated that commercial and industrial development for the county during the period consumed 3,745 acres of land. Commercial uses consumed 1,431 acres and industrial uses consumed 2,314 acres. Based on the August 14, 2007 plan map inventory of vacant and buildable land there are 4,376 net buildable commercial acres and 3,213 net buildable industrial acres.
- Review of development indicates that 26% of all residential development occurred on land with some environmental constraint component. It is likely that the critical land layer over states the extent of critical land. More importantly, this percent does not imply that development is occurring on lands with critical areas.
- The evaluation report demonstrates that the county is close to the target of providing no more than 75 percent of one housing type.
- Employment density was difficult to estimate because of the proprietary nature of employment data. However, new building permits from 2000 to 2005 indicate an employment density observed in commercial and industrial at 7.9 and 8.2 employees per

acre, respectively.

- Battle Ground and Camas industrial employment density appears to be on target, which is 15.5 and 11.0 employees per acre, respectively.
- Despite the county's observed employment density not being on target, the total number of new employees has grown since 2000. Jurisdictions are likely to have added more employees on existing and built commercial and industrial buildings without going through the permit process.

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## Introduction

Amendments to the Growth Management Act (GMA) in 1997 require Clark County and its cities to collect data on buildable lands and to analyze how planning goals are being achieved. The amendments, often referred to as the Buildable Lands Program, require local governments to monitor the amount and density of residential, commercial and industrial development that has occurred since adoption of a jurisdiction's GMA comprehensive plan. If the results of the 5-year buildable land evaluation reveal deficiencies in buildable land supply within UGAs, then the county and the cities are required first to adopt and implement reasonable measures that will remedy the buildable land supply shortfall before adjusting UGA boundaries.

The monitoring and evaluation of the buildable lands program is codified as Revised Code of Washington (RCW) 36.70A.215. Three sections are most relevant to this report. This report will focus on 36.70A.215 (1)(a) and 36.70A.215 (3)(c), below, and provide the basis for addressing 36.70A.215 (1)(b) below. Under 36.70A.215(1): The purpose of the review and evaluation program is to:

- (a) "Determine whether a county and its cities are achieving urban densities within urban growth areas by comparing growth and development assumptions, targets, and objectives contained in the county wide planning policies and the county and city comprehensive plans with actual growth and development that has occurred in the county and its cities; and
- (b) Identify reasonable measures, other than adjusting urban growth areas that will be taken to comply with the requirements of this chapter."

and 36.70A.215(3)

- (c) "Based on the actual density of development as determined under 3(b) of this subsection, 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."

The Buildable Lands Statute further states:

“If the evaluation demonstrates an inconsistency between what has occurred since the adoption of the county-wide planning policies and the county and city comprehensive plans the county and its cities shall adopt and implement measures that are reasonably likely to increase consistency during the subsequent five-year period. If necessary, a county, in consultation with its cities shall adopt amendments to county-wide planning policies to increase consistency. The county and its cities shall annually monitor the measures adopted to determine their effect and may revise or rescind them as appropriate.”

The original statute does not require jurisdictions to adopt the Buildable Lands Report (BLR). However, the State of Washington Department of Community Trade and Economic Development (CTED) have revised their adoption policy.

According to CTED in a letter dated March 16, 2007, GMA counties and jurisdictions should acknowledge the BLR through adoption of a resolution or ordinance by the appropriate legislative body. “CTED recommends the county’s adoption of the final BLR as the legislative action that concludes the five-year reporting cycle of the review and evaluation program outlined in RCW 36.70A.215, if no other procedure is in place (such as in county-wide planning policies). Cities should also consider adopting the report in order to avoid future challenges. The adoption of the report should include opportunity for public participation. Since the September 1, 2007, deadline in the statute refers only to the completion of the report, we recommend formal adoption take place as soon as possible after its release.”

## **Process**

Clark County, in consultation with each city, has been working cooperatively to address the requirements of Section 215. Through that process, a methodology was developed for collecting the buildable land data in this report (see below, and Appendix A). The data collection methods and procedures were developed through the Clark County Growth Management Act (GMA) Technical Advisory Committee (TAC). An Amendment to the countywide planning policies was adopted by reference as Ordinance 2000-12-16 by the Board of County Commissioners.



The Ordinance amended language in the Community Framework Plan to comply with the requirements of RCW 36.70A.215. The Growth Management Act requires Clark County to compile data that shows the process of each community's comprehensive plan toward the goals of the Growth Management Act. Each community collects development data, which is forwarded to the county and added to a central database. The web site draws data from that database. It allows citizens, interest groups, elected officials and advisory boards the most comprehensive source of planning data.

## **Methodology**

Following the first Buildable Lands report, the county met with each building official and city staffs to refine how data was to be compiled in the future. Each month, staff in each jurisdiction (except Vancouver and Yacolt) forwards an electronic spreadsheet to the county with updated development data such as permit types, parcel numbers, numbers of units, etc. Staff performs a quality assurance check to ensure data has permit number, permit type, parcel number, number of units, building square feet for non-commercial permits, and issue dates. They look for duplicates and check for errors with parcel numbers, addresses, number of units and square feet. If data is missing or incorrect, staff contacts the respective jurisdiction. Staff also adds missing parcel numbers by using the parcel match option in Clark View.

Information Technology extracts permit data for Clark County, Vancouver and Yacolt, and transfers the files to a server. The server completes the following steps: normalize and read data, translate data, import data, obtain GIS data, generate reports in PDF format, and generates an exception report. The exception report contains permits that are not recognized by the server. If the error rate is greater than one to three percent per jurisdiction for the total number of permits, the county contacts the jurisdiction to correct the discrepancy. County staff also performs a visual check to confirm that the data has merged into the database correctly. The county runs another program that creates a report and a PDF file that is automatically placed on the web.

The primary sources of data were from new commercial, industrial and residential building permits, subdivisions and short plats that have been issued or reviewed from June 30, 2000 through June 30, 2006. Clark County's Geographic Information System (GIS) was used to link parent parcel serial numbers taken from new building permits issued to identify parcels within city and urban growth area boundaries, acreage and critical lands coverage.

Data for the infrastructure analysis is from a vacant and underutilized model run. This infrastructure analysis classifies schools, public land, easements and right of ways.

## **Baseline Assumptions**

### Clark County 20 Year Comprehensive Growth Management Plan

The 1994 Comprehensive Plan provides the baseline for the first evaluation. The Board of County Commissioners adopted the first update to the 1994 comprehensive plan in 2004. The 2004 plan was challenged on a number of grounds. The Board subsequently decided to revisit several of the assumptions made in the 2004 plan, resulting in a change in the planning assumptions to closely reflect the type of growth pattern that expands the urban growth boundaries to include enough land to accommodate 20 years of proposed job and population growth. The planning assumptions have to do with growth rates, population, and persons per household, and are listed below:

- No more than 75 percent of any product type of detached/attached housing
- Average residential densities in urban areas would be 8 units per net acre for Vancouver, 6 for Battle Ground, Ridgefield, Camas, Washougal, 4 units per net acre for La Center, and no minimum for the town of Yacolt
- Infrastructure factor of 27.5 percent for residential development and 25 percent for industrial and commercial development
- 2.59 persons per household
- 20 employees per commercial acre; 9 employees per industrial acre; and 20 employees per business park acre
- Currently built land will be redeveloped, absorbing five percent of the projected population and job growth
- A residential market factor of 10 percent, no market factor for commercial, industrial or business park
- Population growth of 192,635; 90 percent of the population will live in urban areas; 10 percent in rural areas
- A total population of 584,310 by 2024, from an annual growth rate of 2.0 percent, with 2.2 percent assumed in 2004-2010 for capital facilities planning purposes
- 66,939 new dwelling units needed for households in urban areas and 138,312 new jobs by 2024

## Population

Under the GMA, Clark County and its cities are required to plan for a total population projection as provided by the state Office of Financial Management. Clark County’s population forecast for the 20-year planning period ending 2014 is 478,393 and 584,310 in 2024. Since 2000, Table 1 below indicates that the County’s population has increased by 58,262 persons or by 16.9 percent.

**Table 1**  
**Annual Population Estimates for Clark County & City UGAs, 1995-2006**

Cities	1995	2000	2001	2002	2003	2004	2005	2006	Adopted 2023 Population Allocation	1995-2000 Percent Change	2001-2006 Percent Change
Battle Ground	5,015	9,322	10,040	11,110	12,560	14,220	14,960	15,810	16,294	85.88%	57.47%
Camas	8,355	12,534	12,970	13,540	14,200	15,360	15,460	15,880	21,537	50.02%	22.44%
LaCenter	997	1,654	1,735	1,805	1,855	1,990	2,095	2,315	2,713	65.90%	33.43%
Ridgefield	1,550	2,147	2,175	2,145	2,185	2,195	2,630	3,225	10,237	38.52%	48.28%
Vancouver	68,589	143,560	145,300	148,800	150,700	152,900	154,800	156,600	168,859	109.30%	7.78%
Washougal	5,808	8,595	8,790	9,100	9,775	10,770	11,350	12,270	16,121	47.99%	39.59%
Yacolt	857	1,055	1,065	1,105	1,115	1,135	1,160	1,220	1,274	23.10%	14.55%
Incorporated	91,325	178,959	182,170	187,690	192,475	198,650	202,545	207,410	237,035	95.96%	13.86%
Unincorporated	198,786	166,279	170,430	175,710	179,825	184,650	188,955	196,090	280,706	-16.35%	15.06%
County Total	290,111	345,238	352,600	363,400	372,300	383,300	391,675	403,500	517,741	19.00%	14.44%

SOURCES: 2005 Population and Economic Handbook, Washington State Office of Financial Management, April 1 Population of Cities, Towns, and Counties, June, 2006.

NOTES: Total UGA includes a portion of the City of Woodland population that resides in Clark County.

## Observations

Between 2001 and 2006:

The 2024 population forecast amounts to adding 65.7% to the 2001 population over 23 years or around 2.86% per year; similar to the 2.88% average increase observed between 2001 and 2006. This observed rate indicates that Clark County is growing at a faster rate than the 2024 population allocation. Assuming Clark County’s average annual growth rate of 2.73% continues, the population could grow to 655,231 in 2024. This number would exceed the 2025 population projections (high growth expectations) from the Washington Office of Financial Management by approximately 33,000 people.

## Employment

The GMA does not mandate a source that must be considered in planning for future employment. However, in this report the county uses Washington State employment data to make comparisons between employment and employment densities. In 2004, commercial and industrial employment assumptions were 20 and 9 jobs per acre, respectively, to plan for future employment.

**Table 2**  
**Clark County Workforce, 2000-2006**

	2000-2006 Number Increase	2000-2006 Percent Increase	Average Annual Increase
Population	58,262	16.9	2.8
Total Labor Force	22,500	12.5	2.1
Employment	19,400	11.4	1.9
Unemployment	3,100	36.5	6.1

Source: Work Force Explorer, Washington accessed November 14, 2006,  
Clark County Community Planning.

## Observations

- From 2000 to 2006, Clark County added 22,500 to its total labor force; an average annual compound growth increase of 2.0%, for the same period population growth was 2.8%.
- National recession starting in 2001 reversed a period of fast economic growth and low unemployment, resulting in significant layoffs and unemployment rates increasing to 8% by February 2002 in Clark County and the PMSA.
- This downturn affected over 14,000 Clark County residents.
- More recently, the economy has begun to improve regionally and within the county.
- 2006 annual unemployment for Clark County was 5.8 percent with a 5.1 percent unemployment rate in the PMSA for the same period.

## Single-family Residential Development Activity (2000-2006)

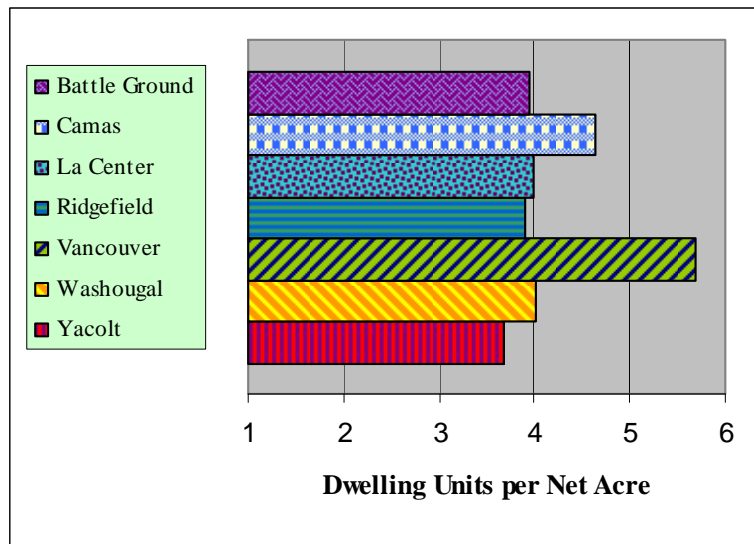
Indicators of residential development include lot creation, subdivisions and building permits. Monitoring building permits provides a measure of the level of construction activity and the rate at which residential land is being developed. Table 3 below shows the number of new single-family building permits issued between June 30, 2000 and June 30, 2006. Single family includes single-family residential, accessory dwelling units (ADU), and mobile homes (on individual lots). Chart 1 below shows the density of development by UGA and the number of acres permitted for single-family detached residences. **Please refer to pages 17 -19 for an annual breakdown of each jurisdiction’s building permits.**

**Table 3**  
**Single-Family Building Permits, 2000 – 2006**

	Single Family Development			
		Units	Acres	Du's/Acre
<b>Battle Ground</b>				
	City	1,059	203.45	5.21
	UGA	25	71.68	0.35
	<b>Sub Total</b>	1,084	275.13	3.94
<b>Camas</b>				
	City	1,346	281.05	4.79
	UGA	114	34.57	3.30
	<b>Sub Total</b>	1,460	315.62	4.63
<b>La Center</b>				
	City	252	55.70	4.52
	UGA	2	7.82	0.26
	<b>Sub Total</b>	254	63.52	4.00
<b>Ridgefield</b>				
	City	597	138.57	4.31
	UGA	3	15.20	0.20
	<b>Sub Total</b>	600	153.77	3.90
<b>Vancouver</b>				
	City	3,186	586.56	5.43
	UGA	8,082	1,393.27	5.80
	<b>Sub Total</b>	11,268	1,979.83	5.69
<b>Washougal</b>				
	City	1,405	346.32	4.06
	UGA	3	4.04	0.74
	<b>Sub Total</b>	1,408	350.36	4.02
<b>Yacolt</b>				
	City	102	25.98	3.93
	UGA	1	2.00	0.50
	<b>Sub Total</b>	103	27.98	3.68
	<b>Rural</b>	2,899	16,103.97	0.18
<b>Total Cities</b>		7,947	1,637.63	4.85
<b>Total UGAs</b>		8,230	1,528.57	5.38

Source: Clark County Community Planning, Tidemark Advantage, Cities of Battle Ground, Camas, La Center, Ridgefield, and Washougal.

**Chart 1**  
**New Single-Family Development Density by UGA, 2000-2006**



Source: Clark County Community Planning

**Observations**

Between 2000 and 2006:

- Overall, the UGA’s observed a single-family residential density of 5.38 du’s/acre.
- City of Vancouver has observed a density of 5.43 du’s/acre and Vancouver’s unincorporated UGA observed a density of 5.8 du’s/acre, which is an overall density of 5.69 units/net acre.
- Based on building permits, Clark County has developed on a total of 3,166 acres of single-family residential land in the urban growth areas.

**Multi-family Development Activity (2000-2006)**

Multi-family building permits issued from June 1, 2000 through June 30, 2006 were collected. The parcel serial number from each building permit was linked to a GIS coverage to determine the parcel size, geography and critical area. Multi-family includes multi-family residential, duplexes, and new mobile home parks. Table 4 below shows multi-family building permits from 2000-2006; charts 2 and 3 on page 14 show the density of development by UGA and the number of residential acres developed , respectively.

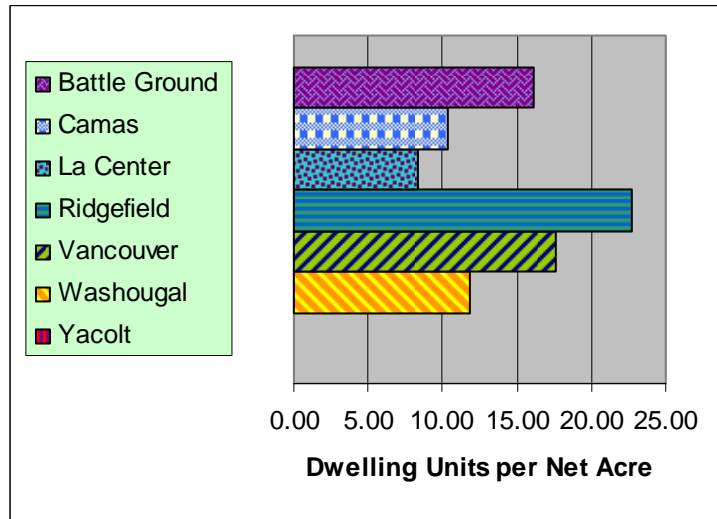
**Table 4**  
**Multi-Family Building Permits, 2000-2006**

		Multi-Family Development		
		Units	Acres	Du's/Acre
<b>Battle Ground</b>				
	City	160	9.90	16.17
	UGA	0		0.00
<b>Sub Total</b>		160	9.90	16.17
<b>Camas</b>				
	City	82	7.94	10.33
	UGA	0		0.00
<b>Sub Total</b>		82	7.94	10.33
<b>La Center</b>				
	City	4	0.48	8.33
	UGA	0		
<b>Sub Total</b>		4	0.48	8.33
<b>Ridgefield</b>				
	City	14	0.62	22.76
	UGA	0		
<b>Sub Total</b>		14	0.62	22.76
<b>Vancouver</b>				
	City	3,557	191.40	18.58
	UGA	496	39.42	12.58
<b>Sub Total</b>		4,053	230.82	17.56
<b>Washougal</b>				
	City	104	8.76	11.87
	UGA	0		
<b>Sub Total</b>		104	8.76	11.87
<b>Yacolt</b>				
	City	0		
	UGA	0		
<b>Sub Total</b>		0		
<b>Rural</b>				
		1	5.09	0.20
<b>Total Cities</b>		3,921	219.09	17.90
<b>Total UGAs</b>		496	39.42	12.58
<b>Overall Average Density</b>		4,417	258.51	17.09

Source: Clark County Community Planning, Tidemark Advantage, Cities of Battle Ground, Camas, La Center, Ridgefield, and Washougal.

**Chart 2**

**New Multi-Family Development Density by UGA, 2000-2006**



Source: Clark County Community Planning

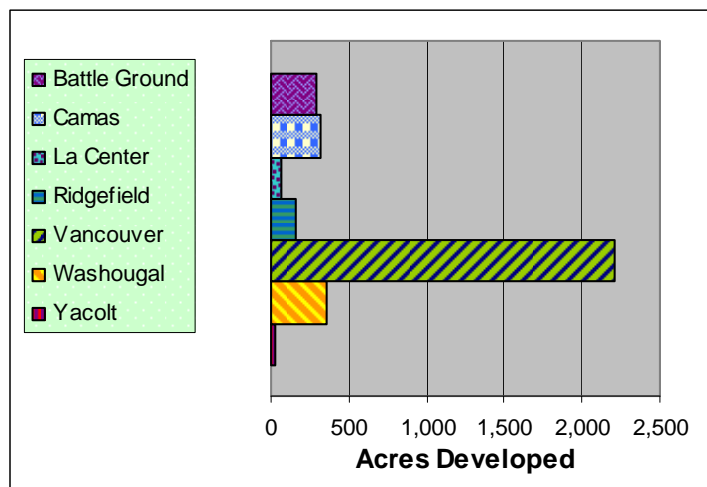
**Observations**

Between 2000 and 2006:

- Overall, average density for multi-family building permits show 17.0 du's/acre.
- The City of Vancouver achieved a multi-family density of 17.56 du's/acre.

**Chart 3**

**Total Single- and Multi-Family Residential Acres Developed by UGA, 2000-2006**



Source: Clark County Community Planning



## Observations

Between 2000 and 2006:

- Based on building permits, Clark County has developed on a total of 3,425 acres of urban residential land.
- 3,166 acres of single-family residential land has developed within the Urban Growth Areas, which is 92.4% of all residential land developed.
- Multi-family development has occurred on 259 acres of urban land, which is 7.6% of all urban residential land that was developed.
- Vancouver's UGA single-family residential land occurred on 1,980 acres at 5.69 dwelling units per acre, which is 89.5% of Vancouver's residential land developed.
- Vancouver's UGA multi-family residential land occurred on 231 acres at 17.56 dwelling units per acre, which is 10.5% of Vancouver's residential land developed.

## Clark County Housing Split

Countywide Planning Policy 1.1.12 in the *2007 Clark County Comprehensive Plan* specifies that no more than 75 percent of new dwelling units to be a specific product type (i.e. single-family housing). The table below shows single-family and multi-family split from June 30, 2000 to June 30, 2006 for each of the Urban Growth Areas.

**Table 5**  
**Single- and Multi-Family Split, 2000-2006**

		Single Family			Multi-Family			Total		
		Units	% <i>SF</i>	Acres	Units	% <i>MF</i>	Acres	Units	Acres	Units/Acre
<b>Battle Ground</b>										
	City	1,059	<b>86.9</b>	203.45	160	<b>13.1</b>	9.90	1,219	213.35	5.71
	UGA	25	<b>100.0</b>	71.68	0			25	71.68	0.35
	<b>Sub Total</b>	1,084	<b>87.1</b>	275.13	160	<b>12.9</b>	9.90	1,244	285.03	4.36
<b>Camas</b>										
	City	1,346	<b>94.3</b>	281.05	82	<b>5.7</b>	7.94	1,428	288.99	4.94
	UGA	114	<b>100.0</b>	34.57	0			114	34.57	3.30
	<b>Sub Total</b>	1,460	<b>94.7</b>	315.62	82	<b>5.3</b>	7.94	1,542	323.56	4.77
<b>La Center</b>										
	City	252	<b>98.4</b>	55.70	4		0.48	256	56.18	4.56
	UGA	2	<b>100.0</b>	7.82	0			2	7.82	0.26
	<b>Sub Total</b>	254	<b>98.4</b>	63.52	4		0.48	258	64.00	4.03
<b>Ridgefield</b>										
	City	597	<b>97.7</b>	138.57	14	<b>2.3</b>	0.62	611	139.19	4.39
	UGA	3	<b>100.0</b>	15.20	0			3	15.20	0.20
	<b>Sub Total</b>	600	<b>97.7</b>	153.77	14	<b>2.3</b>	0.62	614	154.38	3.98
<b>Vancouver</b>										
	City	3,186	<b>47.2</b>	586.56	3,557	<b>52.8</b>	191.40	6,743	777.96	8.67
	UGA	8,082	<b>94.2</b>	1,393.27	496	<b>5.8</b>	39.42	8,578	1,432.69	5.99
	<b>Sub Total</b>	11,268	<b>73.5</b>	1,979.83	4,053	<b>26.5</b>	230.82	15,321	2,210.65	6.93
<b>Washougal</b>										
	City	1,405	<b>93.1</b>	346.32	104	<b>6.9</b>	8.76	1,509	355.08	4.25
	UGA	3	<b>100.0</b>	4.04	0			3	4.04	0.74
	<b>Sub Total</b>	1,408	<b>93.1</b>	350.36	104	<b>6.9</b>	8.76	1,512	359.12	4.21
<b>Yacolt</b>										
	City	102	<b>100.0</b>	25.98	0			102	25.98	3.93
	UGA	1		2.00	0			0		
	<b>Sub Total</b>	103	<b>100.0</b>	27.98	0			103	27.98	3.68
	<b>Rural</b>	2,899	<b>100.0</b>	16,103.97	1	<b>0.0</b>	5.09	2,900	16,109.06	0.18
	<b>Total Cities</b>	7,947	<b>67.0</b>	1,637.63	3,921	<b>33.0</b>	219.09	11,868	1,856.72	6.39
	<b>Total UGAs</b>	8,230	<b>94.3</b>	1,528.57	496	<b>5.7</b>	39.42	8,726	1,567.99	5.57
	<b>Grand Total</b>	16,177	<b>78.6</b>	3,166.20	4,417	<b>21.4</b>	258.51	20,594	3,424.71	6.01

Source: Clark County Community Planning, Tidemark Advantage, Cities of Battle Ground, Camas, La Center, Ridgefield, and Washougal.

## Observations

Between 2000 and 2006:

- County overall achieved a split of 78.6% single-family and 21.4% multi-family.
- Vancouver's overall split averaged 73.5% single-family and 26.5% multi-family.
- Overall, observed density for Single- and Multi-family residential dwelling units per acre is 6.01.
- As an informational item and for reporting purposes only, overall rural area residential density occurred at .18 dwelling units per acre, which is equal to an average lot size of 5 acres per unit.

## Residential Building Permits by Year and Jurisdiction

The following residential tables are reported by year from June 30, 2000 to June 30, 2006 for each jurisdiction and assembled by Clark County Community Planning. Data is from Tidemark Advantage (expanded).

**Table 6**  
**Rural Annual Residential Development**

Single Family	2000			2001			2002			2003			2004			2005			2006			Total 2000-2006		
	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre
Rural	230	1,142.63	0.20	431	2,194.91	0.20	465	2,568.86	0.18	564	2,993.16	0.19	513	2,963.47	0.17	488	2,896.83	0.17	208	1,344.11	0.15	2899	16,103.97	0.18
Multi-Family																								
Rural	0			0			1	5.09	0.20	0			0			0			0			1	5.09	0.20
Total	230	1,142.63	0.20	431	2,194.91	0.20	466	2,573.95	0.18	564	2,993.16	0.19	513	2,963.47	0.17	488	2,896.83	0.17	208	1,344.11	0.15	2900	16,109.06	0.18

**Table 7**  
**Battle Ground Annual Residential Development**

Single Family	2000			2001			2002			2003			2004			2005			2006			Total 2000-2006		
	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre
City of Battle Ground	95	25.62	3.71	0			28	29.28	0.96	369	67.41	5.47	304	47.89	6.35	222	33.25	6.68	41	6.05	6.78	1,059	203.45	5.21
Unincorporated	1	27.43	0.04	5	9.11	0.55	5	11.55	3.00	3	11.12	0.27	2	6.14	0.33	3	0.55	5.48	6	5.78	1.04	25	71.68	0.35
Total UGA	96	53.05	1.81	5	9.11	0.55	33	40.83	0.81	372	78.53	4.74	306	54.03	5.66	222	33.25	6.68	47	11.83	1.10	1,084	275.13	3.94
Multi-Family																								
City of Battle Ground	0			0			6	0.44	13.64	0			6	0.6	10.00	70	3.84	18.23	78	5.01	15.57	160	9.89	16.18
Unincorporated	0			0			0			0			0			0			0			0		
Total UGA	0			0			6	0.44	13.64	0			6	0.6	10.00	70	3.84	18.23	78	5.01	15.57	160	9.89	16.18

**Table 8  
Camas Annual Residential Development**

Single Family	2000			2001			2002			2003			2004			2005			2006			Total 2000-2006		
	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre
City of Camas	15	3.59	4.18	239	50.12	4.77	387	81.58	4.74	247	58.79	4.20	174	35.18	4.95	231	51.79	4.46	53	12.08	4.39	1,346	281.05	4.79
Unincorporated	11	4.53	2.43	50	10.84	4.61	29	6.71	4.32	12	2.74	4.38	6	7.33	0.82	3	0.55	5.48	3	1.87	1.60	114	34.57	3.30
Total UGA	26	8.12	3.20	289	60.96	4.74	416	88.29	4.71	259	61.53	4.21	180	42.51	4.23	234	52.34	4.47	56	13.95	1.10	1,460	315.62	4.63
<b>Multi-Family</b>																								
City of Camas	0			14	1.14	12.28	10	1.19	8.38	8	0.81	9.83	22	1.39	15.83	18	0.98	18.35	10	2.42	4.13	82	7.94	10.33
Unincorporated	0			0			0			0			0			0			0			0		
Total UGA	0			14	1.14	12.30	10	1.19	8.38	8	0.81	9.83	22	1.39	15.83	18	0.98	18.30	10	2.42	4.13	82	7.94	10.33

**Table 9  
La Center Annual Residential Development**

Single Family	2000			2001			2002			2003			2004			2005			2006			Total 2000-2006		
	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre
City of La Center	0			0			27	6.46	4.18	40	8.99	4.45	42	9.56	4.39	132	30.69	4.30	11	2.65	4.15	252	55.70	4.52
Unincorporated	0			0			0			0			0			2	7.82	0.26	0			2	7.82	0.26
Total UGA	0			0			27	6.46	4.18	40	8.99	4.45	42	9.56	4.39	134	38.51	3.48	11	2.65	4.15	254	63.52	4.00
<b>Multi-Family</b>																								
City of La Center	0			0			0			0			0			0			4	0.48	8.33	4	0.48	8.33
Unincorporated	0			0			0			0			0			0			0			0		
Total UGA	0			0			0			0			0			0			4	0.48	8.33	4	0.48	8.33

**Table 10  
Ridgefield Annual Residential Development**

Single Family	2000			2001			2002			2003			2004			2005			2006			Total 2000-2006		
	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre
City of Ridgefield	0			6	11.25	0.53	6	2.68	2.24	15	11.34	1.32	201	32.14	6.25	282	60.45	4.67	87	20.71	4.20	597	138.57	4.31
Unincorporated	1	1.39	0.72	0			1	13.51	0.07	0			0			0			1	0.30	3.33	3	15.20	0.20
Total UGA	1	1.39	0.72	6	11.25	0.53	7	16.19	0.43	15	11.34	1.32	201	32.14	6.25	282	60.45	4.67	88	21.01	4.19	600	153.77	3.90
<b>Multi-Family</b>																								
City of Ridgefield	0			4	0.11	37.04	2	0.12	17.24	0			0			8	0.39	20.46	0			14	0.62	22.76
Unincorporated	0			0			0			0			0			0			0			0		
Total UGA	0			4	0.11	37.04	2	0.12	17.24	0			0			8	0.39	20.46	0			14	0.62	22.76

**Table 11  
Vancouver Annual Residential Development**

Single Family	2000			2001			2002			2003			2004			2005			2006			Total 2000-2006		
	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre
City of Vancouver	296	52.04	5.69	522	84.67	6.17	486	156.84	3.10	544	113.52	4.79	569	103.67	5.49	549	75.82	7.24	220	40.02	5.50	3,186	586.56	5.43
Unincorporated	585	121.45	4.82	1,510	282.88	5.34	1,132	200.95	5.63	1,181	226.25	5.22	1,511	237.90	6.35	1,532	235.27	6.51	631	88.57	7.12	8,082	1,393.27	5.80
Total UGA	881	173.49	5.08	2,032	367.55	5.53	1,618	357.79	4.52	1,725	339.77	5.08	2,080	341.57	6.09	2,081	311.09	6.69	851	128.59	6.62	11,268	1,979.83	5.69
Multi-Family																								
City of Vancouver	48	31.42	1.53	1,026	49.41	20.77	625	16.80	37.20	747	42.81	17.45	436	28.52	15.29	295	15.77	18.71	180	6.67	26.99	3,357	191.40	17.54
Unincorporated	40	8.93	4.48	10	14.43	0.69	57	1.27	45.02	145	6.33	22.91	198	5.31	37.29	42	2.82	14.89	4	0.34	11.76	496	39.42	12.58
Total UGA	88	40.35	2.18	1,036	63.84	16.23	682	18.07	37.75	892	49.14	18.15	634	33.83	18.74	337	18.59	18.13	184	7.01	26.25	3,853	230.82	16.69

**Table 12  
Washougal Annual Residential Development**

Single Family	2000			2001			2002			2003			2004			2005			2006			Total 2000-2006		
	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre
City of Washougal	17	0.40	42.50	115	62.89	1.83	191	40.92	4.67	238	67.18	3.54	313	61.19	5.12	400	91.61	4.37	131	22.13	5.92	1,405	346.32	4.06
Unincorporated	0			0			0						3	4.04	0.74	0			0		0.00	3	4.04	0.74
Total UGA	17	0.40	42.50	115	62.89	1.83	191	40.92	4.67	238	67.18	3.54	316	65.23	4.84	400	91.61	4.37	131	22.13	5.92	1,408	350.36	4.02
Multi-Family																								
City of Washougal	8			10	0.59	16.84	14	0.92	15.22	8	0.86	9.30	14	2.47	5.67	18	1.69	10.65	32	2.23	14.35	104	8.76	11.87
Unincorporated	0			0			0			0			0			0			0			0		
Total UGA	0			10	0.59	16.84	14	0.92	15.22	8	0.86	9.30	14	2.47	5.67	18	1.69	10.65	32	2.23	14.35	104	8.76	11.87

**Table 13  
Yacolt Annual Residential Development**

Single Family	2000			2001			2002			2003			2004			2005			2006			Total 2000-2006		
	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre	Units	Acres	Units/acre
Town of Yacolt	3	1.14	2.63	19	6.73	2.82	2	0.73	2.74	5	0.88	5.68	9	3.98	2.26	43	12.52	3.43	21	6.34	3.31	102	25.98	3.93
Unincorporated	0			1	2.00	0.50				0			0			0			0			1	2.00	0.50
Total UGA	3	1.14	2.63	20	8.73	2.29	2	0.73	2.74	5	0.88	5.68	9	3.98	2.26	43	12.52	3.43	21	6.34	3.31	103	27.97	3.68
Multi-Family																								
Town of Yacolt	0			0			0			0			0			0			0			0		
Unincorporated	0			0			0			0			0			0			0			0		
Total UGA	0			0			0			0			0			0			0			0		

## Commercial and Industrial Development and Employment Density

Data on commercial building permits issued from June 30, 2000 through June 30, 2006 was collected (Table 14). Tenant improvements were excluded unless the improvement resulted in an increase of building square footage. The parcel serial number from each building permit was linked to a GIS coverage to determine the parcel size, geography and critical area. Commercial building permits include commercial, industrial and multi-family development. Table 15 on page 21 reflects industrial building permits sorted by comprehensive plan designation for industrial uses. The Department of Assessment and GIS provided the information for tables 16-23, and Clark County Community Planning is responsible for formatting these tables.

**Table 14**  
**Commercial Building Permits by UGA and Comp Plan Designation**

<b>UGA</b>	<b>NUMBER OF PERMITS</b>	<b>ACRES</b>	<b>CRITICAL ACRES</b>	<b>PERCENT CRITICAL</b>
<b>Battle Ground</b>	56	152.61	73.85	48%
<b>Camas</b>	3	0.42	0.00	0%
<b>La Center</b>	1	0.25	0.00	0%
<b>Ridgefield</b>	3	3.96	1.87	47%
<b>Vancouver</b>	756	1236.61	182.82	15%
<b>Washougal</b>	1	0.26	0.00	0%
<b>Yacolt</b>	1	2.93	0.00	0%
<b>Total</b>	821	1397.04	258.54	19%
<b>Rural</b>	26	34.35	12.48	36%
<b>County Total</b>	847	1431.39	271.02	19%

Note: Acreage for commercial development is in net acres. Model 2007 J is based on building permits issued in commercial areas by comp plan designation.

**Table 15**  
**Industrial Building Permits by UGA and Comp Plan Designation**

UGA	NUMBER OF PERMITS	ACRES	CRITICAL ACRES	PERCENT CRITICAL
<b>Battle Ground</b>	12	47.30	39.79	84%
<b>Camas</b>	1	0.90	0.00	0%
<b>Ridgefield</b>	1	49.89	20.02	40%
<b>Vancouver</b>	330	2204.41	1020.93	46%
<b>Washougal</b>	2	1.85	0.00	0%
<b>Total</b>	346	2304.35	1080.74	47%
<b>Rural</b>	1	9.54	0.00	0%
<b>County Total</b>	347	2313.89	1080.74	47%

Note: Acreage for industrial development is in net acres. Model 2007 J is based on building permits issued in commercial areas by comp plan designation.

**Observations**

- Based on commercial building permits issued, development occurred on 1,431 acres of commercially designated land and 2,314 acres of industrial designated land.

**Employment Density Methodology**

This information is for employment based on new construction permits from June 30, 2000 to June 30, 2006. The building permit information was matched to parcels and employment locations to obtain acres and employment. A total of 335 records matched between the new construction files and the employment records. Commercial land use designations include City Center, Community Commercial, General Commercial, Mixed Use, Neighborhood Commercial, Office Park/Business Park, and Rural Commercial. Industrial land use designations include Rural Industrial, Light Industrial and Heavy Industrial.

**Table 16**  
**Commercial and Industrial Employment Density**

Land Use Designation		Urban Growth Area								Grand Total
		Battle Ground	Camas	Rural	LaCenter	Ridgefield	Vancouver	Washougal	Yacolt	
Commercial	Employees	708	12	121	-	46	26,058	-	-	26,945
	Acres	65.3	0.4	23.6	0.0	2.7	3,313.2	0.0	0.0	3,405.2
	Employees per Acre	10.8	28.0	5.1	0.0	17.2	7.9	0.0	0.0	<b>7.9</b>
Industrial	Employees	223	14	-	-	-	15,108	-	-	15,345
	Acres	20.3	0.9	0.0	0.0	0.0	1,860.1	0.0	0.0	1,881.3
	Employees per Acre	11.0	15.5	0.0	0.0	0.0	8.1	0.0	0.0	<b>8.2</b>

Source: Clark County Department of Assessment and GIS

Note: Commercial includes industrial and commercial building permits issued from 2000 to 2005. Employment data is based on annual average 2005 employment. Acres are based on the parcel where the permit was assigned, and are reported as net acres.

The planning assumptions applied in 2007 were based on employees per net acre. The result is that the observed densities are lower than the 2004 planning assumptions.

### Observations

A caveat of the observations below is that they are from a limited set of employment data.

- From 2000 to 2005, new permits show employees per net acre for commercial at 7.9 employees per acre and industrial 8.2 employees per net acre.
- Clark County has seen employment gains from 2000 to 2006. It is likely that some businesses have added employees, which would not require new building permits and may account for the low employment density reported.



## Commercial and Industrial Building Permits by Year and Jurisdiction

The following commercial and industrial tables are reported by year from June 30, 2000 to June 20, 2006 for each jurisdiction and assembled by Clark County Community Planning. Data is from the Department of Assessment and GIS.

**Table 17**  
**Battle Ground Annual Commercial and Industrial Permits**

<b>Battle Ground UGA</b>	<b>YEAR ISSUED</b>	<b>NUMBER OF PERMITS</b>	<b>ACRES</b>	<b>CRITICAL ACRES</b>	<b>PERCENT CRITICAL</b>
Commercial	2000	10	7.30	5.70	78%
	2001	9	11.92	6.99	59%
	2002	15	51.41	19.11	37%
	2003	14	70.41	35.78	51%
	2004	3	5.44	0.63	12%
	2005	2	3.70	3.58	97%
	2006	3	2.44	2.06	84%
<b>Commercial Total</b>		<b>56</b>	<b>152.61</b>	<b>73.85</b>	<b>48%</b>
Industrial	2000	3	2.51	1.20	48%
	2001	2	3.76	3.77	100%
	2002	1	9.97	9.97	100%
	2003	3	25.75	19.87	77%
	2004	1	3.37	3.37	100%
	2005	1	0.65	0.33	52%
	2006	1	1.28	1.28	100%
<b>Industrial Total</b>		<b>12</b>	<b>47.30</b>	<b>39.79</b>	<b>84%</b>

**Table 18**  
**Camas Annual Commercial and Industrial Permits**

<b>Camas UGA</b>	<b>YEAR ISSUED</b>	<b>NUMBER OF PERMITS</b>	<b>ACRES</b>	<b>CRITICAL ACRES</b>	<b>PERCENT CRITICAL</b>
Commercial	2003	2	0.35	0.00	0%
	2004	1	0.07	0.00	0%
Commercial Total		3	0.42	0.00	0%
Industrial	2005	1	0.90	0.00	0%
Industrial Total		1	0.90	0.00	0%

**Table 19**  
**La Center Annual Commercial and Industrial Permits**

<b>La Center UGA</b>	<b>YEAR ISSUED</b>	<b>NUMBER OF PERMITS</b>	<b>ACRES</b>	<b>CRITICAL ACRES</b>	<b>PERCENT CRITICAL</b>
Commercial	2003	1	0.25	0.00	0%
Commercial Total		1	0.25	0.00	0%

**Table 20**  
**Ridgefield Annual Commercial and Industrial Permits**

<b>Ridgefield UGA</b>	<b>YEAR ISSUED</b>	<b>NUMBER OF PERMITS</b>	<b>ACRES</b>	<b>CRITICAL ACRES</b>	<b>PERCENT CRITICAL</b>
Commercial	2000	1	1.08	0.87	81%
	2004	1	1.59	1.00	63%
	2005	1	1.29	0.00	0%
Commercial Total		3	3.96	1.87	47%
Industrial	2005	1	49.89	20.02	40%
Industrial Total		1	49.89	20.02	40%

**Table 21**  
**Vancouver Annual Commercial and Industrial Permits**

<b>Vancouver UGA</b>	<b>YEAR ISSUED</b>	<b>NUMBER OF PERMITS</b>	<b>ACRES</b>	<b>CRITICAL ACRES</b>	<b>PERCENT CRITICAL</b>
Commercial	2000	54	79.75	15.70	20%
	2001	120	174.91	21.73	59%
	2002	104	249.27	43.31	17%
	2003	124	177.44	18.01	10%
	2004	132	190.99	36.66	19%
	2005	133	204.68	32.88	16%
	2006	89	159.57	14.52	9%
<b>Commercial Total</b>		<b>756</b>	<b>1236.61</b>	<b>182.82</b>	<b>15%</b>
Industrial	2000	19	106.46	42.07	40%
	2001	62	292.84	102.86	35%
	2002	44	622.42	275.53	44%
	2003	47	181.04	54.41	30%
	2004	44	168.68	34.83	21%
	2005	73	684.21	494.92	72%
	2006	41	148.76	16.32	11%
<b>Industrial Total</b>		<b>330</b>	<b>2204.41</b>	<b>1020.93</b>	<b>46%</b>

**Table 22**  
**Washougal Annual Commercial and Industrial Permits**

<b>Washougal UGA</b>	<b>YEAR ISSUED</b>	<b>NUMBER OF PERMITS</b>	<b>ACRES</b>	<b>CRITICAL ACRES</b>	<b>PERCENT CRITICAL</b>
Commercial	2006	1	0.26	0.00	0%
<b>Commercial Total</b>		<b>1</b>	<b>0.26</b>	<b>0.00</b>	<b>0%</b>
Industrial	2006	2	1.85	0.00	0%
<b>Industrial Total</b>		<b>2</b>	<b>1.85</b>	<b>0.00</b>	<b>0%</b>

**Table 23**  
**Yacolt Annual Commercial and Industrial Permits**

<b>Yacolt UGA</b>	<b>YEAR ISSUED</b>	<b>NUMBER OF PERMITS</b>	<b>ACRES</b>	<b>CRITICAL ACRES</b>	<b>PERCENT CRITICAL</b>
Commercial	2003	1	2.93	0.00	0%
<b>Commercial Total</b>		<b>1</b>	<b>2.93</b>	<b>0.00</b>	<b>0%</b>

## Evaluation of Activity on Critical Lands

The method for evaluating critical lands has changed in thirteen years. For example, in 1994, the critical land coverage was made up of critical type I and type II areas. Due to the environmental constraints on parcels with critical type I, they were identified as an exclusion category and subtracted from the vacant land base. Parcels with 50% or greater critical Type II were expected to develop at a lower density of 4 dwelling units per acre.

In December 2000, the critical land coverage was updated in the GIS Vacant Buildable Land model (VBLM) to be consistent with new state regulations issued by the Department of Natural Resources (DNR) and Local Habitat Ordinances. In 2006, it was updated again so that only the critical portion of a parcel is removed from the inventory.

Another change in the methodology is with the Critical Aquifer Recharge Areas (CARA). It was removed from the critical layer since it was pointed out that CARA does not preclude residential development. The critical layer was updated to the new slopes layer and most recent habitat and species information. The net result of this change to the model is that the critical lands are now measured more precisely. It also provides a method of quantifying the percentage of critical land that has been developed.

**Table 24**  
**Development on Critical Lands, 2000-2007**

UGA	Residential Land Vacant and Underutilized				Commercial Land Vacant and Underutilized				Industrial Land Vacant and Underutilized			
	With and Without Critical Acres	Critical Acres	Total Acres	Percent of Critical Developed between 2000-2007	With and Without Critical Acres	Critical Acres	Total Acres	Percent of Critical Developed between 2000-2007	With and Without Critical Acres	Critical Acres	Total Acres	Percent of Critical Developed between 2000-2007
Battle Ground	801.90	142.58	944.48	17.78%	155.28	21.53	176.81	13.87%	225.46	25.48	250.94	11.30%
Camas	946.13	278.05	1,224.18	29.39%	37.47	7.55	45.02	20.15%	964.46	544.58	1,509.04	56.46%
La Center	97.43	12.09	109.52	12.41%	9.36	7.04	16.40	75.21%	0.00	0.00	0.00	0.00%
Ridgefield	763.63	87.02	850.65	11.40%	230.89	13.86	244.75	6.00%	305.39	66.89	372.28	21.90%
Vancouver	2,391.73	744.31	3,136.04	31.12%	522.71	188.26	710.97	36.02%	2,820.99	299.91	3,120.90	10.63%
Washougal	543.78	195.96	739.74	36.04%	5.21	0.47	5.68	9.02%	229.51	87.78	317.29	38.25%
Yacolt	15.76	6.18	21.94	39.21%	0.00	0.00	0.00	0.00%	1.16	0.00	1.16	0.00%
<b>Total UGA</b>	<b>5,560.36</b>	<b>1,466.19</b>	<b>7,026.55</b>	<b>26.38</b>	<b>960.92</b>	<b>238.71</b>	<b>1,199.63</b>	<b>24.88</b>	<b>4,546.97</b>	<b>1,024.64</b>	<b>5,571.61</b>	<b>22.53</b>

Source: Clark County Community Planning, Department Assessment and GIS, 2005 VBLM Model Assumptions: UGA and Comprehensive Plan: P

Critical Acres – Include wetlands, sensitive fish and wildlife habitat areas, critical recharge areas for groundwater aquifers, flood prone areas, and geological hazardous areas such as landslide areas, earthquake fault zones and steep slopes.

Percent of Critical Areas Developed – Percent of development that occurred on parcels with some critical area. This type of conversion does not mean development on critical lands, but development on parcels that have critical areas, which could become part of open space areas or green ways.

### **Observations**

Between 2000 and 2007:

- 5,560 residential acres developed over all of the UGAs on parcels with and without critical acres.
- 26.38% of residential development occurred on parcels with some critical land (Total UGA).
- 24.88% of commercial development occurred on parcels with some critical land (Total UGA).
- 22.53% of industrial development occurred on parcels with some critical land (Total UGA).

### **Infrastructure Analysis**

In June 2006, Clark County Department of Assessment and GIS conducted a review of the Vacant Buildable Land Model (VBLM). The primary result of this work was a comprehensive comparison of the VBLM through time. The oldest archived VBLM model is the 1996 model. This model was compared with a 2005 version of the model. Both models are based on the 1994 UGA boundary and the 1994 comprehensive plan boundary. This review analyzed the Vacant and Underutilized parcels that have converted to built or converted to an easement because they represent actual development.

Table 25 below shows the percentage of infrastructure that was built or converted to an easement. The percent that converted to infrastructure was 27.69%.

**Table 25**  
**Infrastructure Summary**

<b>Classification</b>	<b>Percent</b>
Schools Vacant (School Owner)	0.39%
Schools Built	0.06%
Public Land Vacant (City, County, State owner)	12.84%
Public Land Built	0.10%
Easements and Right of Way	14.30%
Total (Vacant and Underutilized)	27.69%

**Table 26**  
**Summary of 2007 Comprehensive Plan Assumptions and Observations**

	<b>2007 Plan Assumptions</b>	<b>2000-2006 Observations</b>
<b>Population</b>	The 2024 projected population for Clark County is 584,310 based on a 2.0% annual growth rate from 2004.	Clark County's 2006 population is 403,500. The County's observed annualized rate of growth between 2001 and 2006 is 2.73%. If the growth rate continues, the County will reach the 2024 projected population prior to 2024.
<b>Residential Density</b>	The 2007 plan assumed no more than 75 percent of any product type of detached/attached housing with 8 units per net acre for Vancouver, 4 units per net acre for La Center, 6 units per net acre for Battle Ground, Ridgefield, Camas and Washougal, and no minimum for the town of Yacolt.	Clark County's Urban growth areas single- and multi-family split is at 78.6/21.4. Overall, Single- and multi-family density in the UGA's is 6.0 units per net acre.
<b>Employment Density</b>	Employment density was assumed to be 9 jobs/acre for industrial development and 20 jobs/acre for commercial development.	Employment Density is 8.2 jobs per net acre for industrial development and 7.9 jobs per acre for commercial development.
<b>Infrastructure</b>	Residential infrastructure was assumed to be 27.5% residential development.	Infrastructure factor of 27.7% for residential development is within the assumptions outlined in the adopted comprehensive plan.

**Review of Development Experienced Between 2000 and 2006 and Plan Goal**

The report provides information on growth experienced between 2000 and 2006 in the county and each of its cities, including; (a) single- and multi-family development; (b) density (units per acre) at both single- and multi-family development experienced; (c) commercial and industrial development; (d) employment density (workers per acre) for commercial and industrial uses; and (e) amount of development that occurred in critical areas (wetlands, habitat areas, etc).

The major findings of the report indicate that the county urban growth areas, with the exception of Yacolt, have not met the plan's goal of average residential densities in urban areas at 8 units per net acre for Vancouver, 4 units per net acre for La Center, and 6 units per net acre for Battle Ground, Ridgefield, Camas and Washougal.

Further examination of density indicates that development may positively increase as the housing market continues to grow. For example, in 2004 the City of Camas implemented an ordinance that designated densities for new development at 6 dwelling units per acre. As new development occurs, the City of Camas's density will increase. Additionally, increasing demand in the multi-family market may close the gap in reaching a county goal of no more than 75 percent of one housing type. Actual development trend is 78.6 percent single-family and 21.4 percent multi-family. The result is much better for the Vancouver urban growth area, which had a housing split of 73.5 percent single-family and 26.5 percent multi-family.

Employment density revealed that there are 7.9 employees per net acre for commercial development and 8.2 employees per net acre for industrial development. This appears to be less than the planning assumptions of 20 employees per net acre for commercial and 9 employees for industrial. In conclusion, better data is needed to reach any conclusion on employment density.

There is also indication that development is occurring on parcels containing critical lands. Preliminary data reveal that 26 percent of development consisting of parcels with some critical land occurred on residential land that is vacant and underutilized. For commercial and industrial land, the percentages are 24.9 and 22.5, respectively.



## Residential Redevelopment Analysis

The Department of Assessment and GIS conducted a study on new households built between January 1, 1996 and December 31, 2005. It looked at two categories of housing; built only and all not vacant.

**Built only** includes new households units built on land classified as residential built, residential built acreage (AKA mansions and condos), or commercial built, commercial vacant exempt (Vancouver Center has this classification in 1996) **All Not Vacant** includes new households on land not classified as residential vacant, residential underutilized, commercial vacant, commercial underutilized. Please note that this is a much broader net and includes many false positives resulting from the parcel adjustment process. It represents the maximum infill. Table 27 below shows the entire county and the City of Vancouver only.

**Table 27**

### Redevelopment Analysis

<b>Entire UGA</b>		<b>Total</b>	<b>Percent</b>
Vacant and Underutilized Units	34,477		
All Not vacant classes	2,618	37,095	7.06
<b>Built only Classes</b>	<b>2,102</b>	<b>36,528</b>	<b>5.61</b>
Without Downtown	1,770	34,145	5.18
<b>Vancouver Only</b>			
Vacant and Underutilized Units	26,203		
All Not vacant classes	2,058	28,261	7.28
<b>Built only Classes</b>	<b>1,750</b>	<b>27,953</b>	<b>6.26</b>
Without Downtown	1,384	25,871	5.35
<b>Entire UGA minus Vancouver</b>			
Vacant and Underutilized Units	8,274		
All Not vacant classes	560	8,834	6.34
<b>Built only Classes</b>	<b>352</b>	<b>8,626</b>	<b>4.08</b>

## Results of Analysis

The percentage of **new homes built** as infill is in the range of 5.61 - 7.28 percent. The rate of infill is significantly higher in the City of Vancouver (6.26 vs. 4.08 percent). Downtown Vancouver redevelopment is responsible for nearly 1% of Vancouver infill during this period. The existing assumption of 5% is certainly within the ballpark, though it has been 5.6% during this period. The **All Not Vacant** number is the upper end of the infill. This number overstates the number of infill houses, due to the parcel line adjustment project. Further refinement of this might be possible if necessary.

In 1994, VBLM assumptions indicated 28,272 total units would be built of which 18,229 would be Vancouver built during this period: January 1 1996 and December 31, 2005. This study found 34,477 and 26,203 units were actually built in this period.

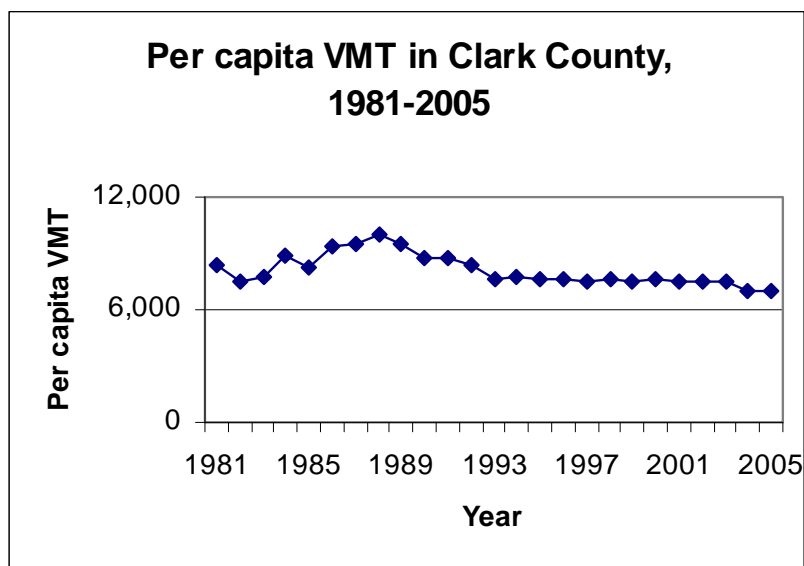
## Optional Information; Travel Trends - Vehicle Miles

CTED offers an optional tracking method beyond legislative requirements to provide a more comprehensive picture of growth and development. For this report, we are looking at the question, how has transportation efficiency changed (e.g. vehicle miles traveled).

Over the past twenty-four years, vehicle miles traveled (VMT) on all Clark County roads has increased approximately 67 percent, and population has grown roughly 100 percent. However, the per-person (capita) vehicle miles traveled in chart 4 below shows a negative trend line indicating a decrease. In 1981, a person annually traveled 8,391 vehicle miles. In 1988, this number peaked at 9,972 and shrunk to 7,019 vehicle miles traveled per person in 2005.

It is important to note that the population numbers include people who do not drive (age 0-14) and people who are less likely to drive (age 65+). According to Clark County's 2005 Population and Economic Handbook, 35% of the total population was in age groups 0-14 and 65+ in 1980 and in 2004, this number changed to 32.6% in 2004. Even though these two age groups are included in the population, they do not appear to influence the declining per capita VMT. If Clark County continues to grow at this rate, we may continue to see a similar trend in annual vehicle miles traveled. However, this chart does not reflect 2024 per capita VMT projections.

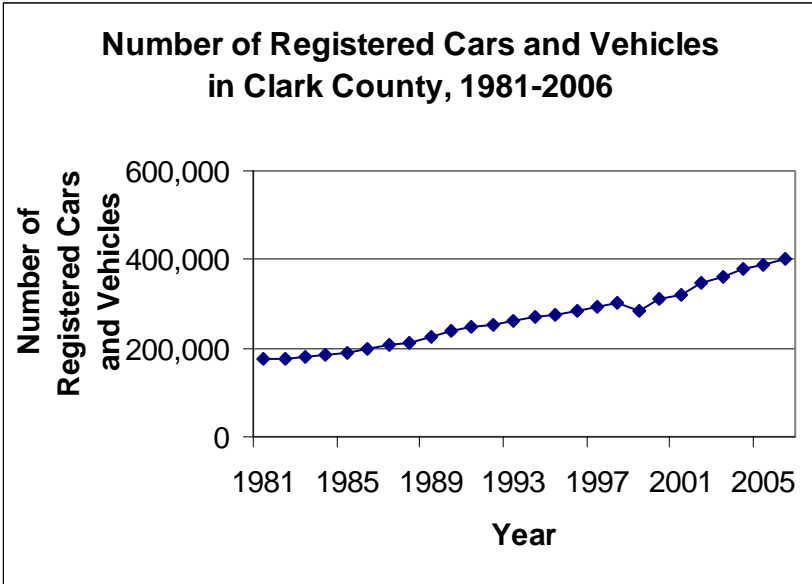
Chart 4



Source: Regional Transportation Council, 2007. VMT data is compiled by WSDOT (Olympia HQ, Data Section) and is derived from Highway Performance Monitoring System (HPMS) sample data. Clark County Community Planning

Since 1981, the number of registered cars and vehicles in Clark County has increased roughly 113% (see chart 5 below). Despite the increase of cars and vehicles, travel on a per- person (capita) basis has generally decreased. This data suggests that people appear to drive fewer miles per day in order to reach employment, shopping, recreational, social and other travel destinations.

**Chart 5**



Source: Regional Transportation Council, 2007. Registered cars and vehicles data is from Washington State Department of Licensing.

Upon reviewing VMT data, this report can answer the question, of how transportation efficiency has changed. The data reviewed for this report appears to show a decline in per capita VMT. Since 2000, the data also appears to indicate transportation efficiency has improved in Clark County.

## Assessment of Reasonable Measures

Clark County and the incorporated cities within the county have completed review under RCW 36.70A.215 which includes comparisons between development that has occurred and the original planning assumptions and targets. **In 1994**, the following actions were identified as necessary revisions to local development regulations. These revisions were to be incorporated into the update process and adopted in an ordinance or resolution to ensure compliance with the GMA. These measures reflect changes in regulation that would gradually allow for higher density development within the planning horizon.

### City of Battle Ground

- Review the ratio of zoned land to density goals to assure the plan is implementing current countywide density goals and housing type mix.
- Develop a mixed-use ordinance and examine minimum densities in certain districts as tools to achieve density goals.
- Examine annexation criteria and coordinated annexation and sub-area planning to assure efficient, compatible use of newly annexed lands.

### City of Camas

- Designate and zone 75% of the residential land for single-family detached and 25% for multi-family and other. The zoning districts would provide a range of densities such that the average density for all new residential development yields 6 dwelling units per acre.
- Adopt minimum/maximum lot size provisions for single family zoning districts.
- Adopt minimum density requirements for multi-family residential zoning districts.
- Adopt provisions for mixed-use development.
- Adopt a variety of development standards (particularly road standards) that promote more efficient use of land while maintaining a quality level of service.
- Rezone large lot districts (e.g. 15,000 and 20,000 sq. ft. lots) to smaller lot districts.
- Revise Planned Unit Development (PUD) Ordinance in 1995 allowing a 20% density bonus.

### City of Washougal

- Require minimum lot sizes.
- Adopted a mixed-use ordinance that allows 16 units per acre for residential use. Also allowed in commercial zone - Adopted 2000.
- Allow for accessory apartments in all residential zone districts. Adopted in 2001.
- Revised Planned Unit Development (PUD) Ordinance in 1995 allowing a 20% density bonus and density transfer to protect critical lands.

- Developed downtown revitalization plan with proposed increased residential densities with commercial uses on first floors and residences above at 16 units to the acre.

### **City of Vancouver**

- Adopt infill ordinance in the Vancouver urban growth area, including city limits, in cooperation with the county.
- Revise planned unit development and mixed-use standards.

### **City of Ridgefield**

- Increase minimum density in low-density residential zones from 3 units per buildable acre.
- Remove density limitation of 3 units per acre on constrained lands.
- Increase percentage of land in medium density residential zones.
- Review Planned Unit Development (PUD) ordinance and add development incentives, if needed.

### **La Center**

- Reduce lot size requirements for multi-family development.
- Make street frontage improvements consistent between single family and multi-family zones.
- Allow manufactured homes on lots smaller than 5 acres.
- Create opportunities for manufactured home parks with design standards.
- Develop PUD, cluster housing and/or townhouse development opportunities.

### **Clark County**

- Adopt in-fill ordinance in unincorporated areas of the county.
- Revise sewer development regulations in urban growth areas.

Since 1994, the following actions were taken by local jurisdictions. Identified below are revisions to local development regulations. Those identified in bold type are reasonable measures that jurisdictions have adopted since 2002.

### **City of Battle Ground**

- **The City of Battle Ground Comprehensive Plan, 2004, Chapter 3: Land Use Element, reviewed the ratio of zoned land to density goals, assuring the plan is implementing current countywide density goals and housing type mix.**
- **Battle Ground has developed a mixed-use ordinance, Ord. 04-024 § 20 (part), 2004. Their updated 2006 development code, Title 17, Chapter 17.101.040 and 2004 Comprehensive Plan, examine minimum densities in certain districts as tools to achieve density goals.**
- **Battle Ground Comprehensive Plan, 2004, contains a growth management element that addresses annexation and sub-area planning in four growth management goals, listed below.**

#### **Growth Management Goal 1: The City will seek a sustainable rate of growth**

##### Objectives

**GM01.1** The City will coordinate its growth projections and growth goals with other jurisdictions.

**GM01.2** The City will balance its growth with other City goals.

**GM01.3** The City will strive to grow at a rate that maintains its small town character.

**GM01.4** The City will work to provide adequate urban services concurrently with development.

**GM01.5** The City will encourage efficient growth within the existing city limits before pursuing additional annexations.

**GM01.6** The City will coordinate with Battle Ground School District during annexation processes to maintain District service standards

**Growth Management Goal 2: Future growth is to occur primarily to the west and south of the current city limits and in all directions consistent with the 50-year vision.**

Objectives

**GMO2.1** The City will primarily focus future planning efforts to the south and west of the current city limits.

**GMO2.2** The City will focus secondary planning efforts for future growth to the north and east.

**Growth Management Goal 3: The City will encourage the efficient and sustainable expansion of the City through the Urban Growth Areas.**

Objectives

**GMO3.1** The City will seek to achieve desirable growth patterns through annexations.

**GMO3.2** The City will seek to achieve a jobs/housing balance through annexations.

**Growth Management Goal 4: The City will work with the County and other jurisdictions in determining growth policies for the Area of Influence.**

Objectives

**GMO4.1** The City will seek to preserve the Area of Influence for future urban growth patterns anticipated by the Vision.

**City of Camas**

- **The City of Camas designated and zoned, consistent with the 2004 Comprehensive Plan, 75% of land for single-family residential with a range of densities such that the average density for new development can yield 6 dwelling units per acre. 75/25 Split and 6 units per acre, identified through Ordinance 236; 1/26/04, and implemented through Ord. 2362, 1/26/04 and Ord. 2363, 1/26/04.**
- **Minimum lot sizes in residential districts, identified through Ord. 2361;1/26/04, and implemented through Ord. 2363, 1/26/07. This includes minimum lot sizes in both single-family and multi-family zoning districts.**
- **In 2006, Camas established minimum and maximum lot sizes for multifamily zoning districts.**
- **Mixed Use - identified through Ord. 2361 1/26/04, and implemented through Ord. 2838,**

11/11/04

- **The City of Camas adopted developments standards under Title 17. 19. The following revisions to this title have occurred: Ord. 2375, 07/12/04; Ord. 2409, 6/13/05; Ord. 2411, 7/11/05; Ord. 2422, 10/17/05, Ord. 2443, 4/17/06.**
- **Great public discussion through Comp. Plan update hearings and addressed through Ordinance 2361, 1/26/04 and Ord. 2370 3/08/004.**
- **The Planned Residential Development section of code was revised 1/26/04 through Ord. 2364 and includes provisions whereby the City may allow for increasing density up to 20% based on design and layout.**

#### **La Center**

- **In 2006, La Center adopted new dimensional standards for multiple-family developments that address lot size requirements. La Center Municipal Code Title 17 ZONING, Chapter 17.25.060, Dimensional standards/multiple-family developments.**
- **January 2007, La Center confirmed that street frontage improvements are consistent between single- and multi-family zones.**
- **December 2004, the City of La Center adopted a modified version of the state model code allowing manufactured homes in all residential zoning districts. La Center Municipal Code Title 17 ZONING, Chapter 17.25.100, Manufactured Homes.**
- **December 2004, the City of La Center adopted new code language allowing for manufactured home parks with design standards. La Center Municipal Code Title 17 ZONING, Chapter 17.85.050, Manufactured home parks and subdivisions.**
- **In 2006, La Center discontinued their PUD Ordinance. Cluster housing and/or townhouse development opportunities are apparent in the 2006 dimensional standards for multiple-family developments. La Center Municipal Code Title 17 ZONING, Chapter 17.25.060, Dimensional standards/multiple-family developments.**



## **City of Ridgefield**

- **Residential Ordinance for newly created lots approved through the subdivision process amended in September 2005 (Ordinance 18.210.050) to allow a range of density in low-density residential zones from 3 to 8 units per buildable acre.**
- **The City of Ridgefield has proposed increasing their medium density residential zones in the Comprehensive Growth Management Plan Preferred Urban Growth Area Map: October 24, 2006.**

## **City of Vancouver**

- **In 2003, City Council adopted an infill ordinance in the Vancouver urban growth area including city limits, in cooperation with the county.**
- **The City of Vancouver revised the planned unit development and mixed-use standards in 2004 and 2005, respectively.**

## **City of Washougal**

- **In 1995, the city council adopted minimum lot sizes, and revised the Planned Unit Development (PUD) Ordinance, allowing a 20% density bonus and density transfer to protect critical lands.**
- **In 2000, the city council adopted a mixed-use ordinance that allows 16 units per acre for residential use.**
- **In 2001, the city council adopted residential zone districts that allow for accessory apartments in all residential zone districts.**
- **The City of Washougal revised their PUD ordinance allowing a density bonus and density transfer to protect critical lands. Title 18: Chapter 18.64.030, Dimensional and improvement requirements; (Ord. 1496 § 1, 2004; Ord. 1475 § 1, 2004; Ord. 1465 § 1, 2003; Ord. 1454 § 1, 2003; Ord. 1233 § 1 (Exh. A), 1997), and Chapter 18.38, Woodburn Hill Subarea Development; (Ord. 1520 § 1, 2005; Ord. 1421 § 1, 2001; Ord. 1253 § 1, 1997)**
- **The City of Washougal Municipal Code Title 18, Chapter 18.32 COMMERCIAL DISTRICTS (CV, CC, CH)\* (Ord. 1503 § 1, 2005; Ord. 1496 § 1, 2004; Ord. 1473 § 1, 2004; Ord. 1437 § 1, 2002; Ord. 1398 § 1 (Exh. A), 2000), and Chapter 18.35 TOWN CENTER DISTRICTS (Ord.**

**1547 § 3 (Exh. A), 2006) implement a downtown revitalization plan with proposed increased residential densities with commercial uses on first floors and residences above, at 16 units per acre.**

### **Clark County**

- **Adopted Ordinance 2005-04-12 that amends Chapter 40.260.110, Residential Infill. Adopted mixed-use ordinance (Amended: Ord. 2004-12-12; Ord. 2005-04-12; Ord. 2006-04-18).**
- **Revised sewer development regulations in urban growth areas; Ordinance #2003-02-16. Clark County revised Short plat reviews (9 lots): subject to urban areas. Ordinance #2006-05-01.**

In summary, several of the cities have addressed their reasonable measures by adopting local development regulations. However, these changes in regulations may not immediately reflect higher density development within the time reviewed (2000-2006). The market and economy might regulate development and density, which may delay development with higher densities. These adopted measures will likely be reflected in the next buildable lands evaluation report. If cities do not increase their densities, then county-wide planning policies will need to be amended possibly before the next Buildable Lands Report is completed.

## **Buildable Land Needs & Capacity Analysis**

In 1992, Clark County began the Vacant Lands analysis to determine the potential capacity of urban growth areas to accommodate projected growth for the next 20 years to the year 2012. County staff met with interested parties from the development and environmental community to collectively examine criteria to be used to compute the supply of land available for development within each urban growth boundary. From the process, a methodology was developed using Clark County's Department of Geographic Information System (GIS) as the primary data source.

The evaluation component of the RCW 36.70A.215 Review and Evaluation Program, at a minimum, shall: "Determine whether there is sufficient suitable land to accommodate the countywide 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."

The amount of land needed to accommodate projected growth through the 2024 planning horizon is the subject of this section. The amount of buildable land needed will be instrumental in the update of the comprehensive plan and provide a framework for addressing the land supply needs of a new 20-year planning horizon.

The two tables below indicate the amount of residential land needed to accommodate the projected 2024 population based on (1) the 2007 Comprehensive Growth Management Plan baseline assumptions; (2) the densities observed since 2000; and (3) new general density guidance selected by the Board of County Commissioners for updating the comprehensive plan. Each table provides the 2004 population (end of year), the remaining population for planning horizon 2024, and the residential units and acres needed. The new density guideline is included here for comparison purposes.

The assumptions for each table are provided below.

### **2007 Baseline Assumptions for residential land:**

- No more than 75% of any product type of detached/attached housing
- 2.59 persons per household
- No minimum for the town of Yacolt

**Table 28**  
**2024 Residential Land Need Based on 2007 Comprehensive Plan Baseline Assumptions**

	2004 Population	Remaining Population for planning horizon 2024	Residential units needed	Assumed units per net acre	Residential acres needed	Deficit	Surplus	2007 Vacant and Buildable Land Inventory in net acres
UGA								
	15,152	24,247	9,362	8	1,216		2	1,218
<b>Camas</b>	18,205	18,268	7,053	7	993		0	993
<b>LaCenter</b>	2,363	5,719	2,208	5	433		4	437
<b>Ridgefield</b>	2,651	21,228	8,196	7	1,205		1	1,206
<b>Three Creeks</b>		39,893	15,403	8	1,925		226	2,151
<b>Vancouver</b>	277,242	45,499	17,567	8	2,196		79	2,275
<b>Washougal</b>	11,248	9,176	3,543	7	537	-1		536
<b>Yacolt</b>	1,262	423	163		-			41
<b>Rural</b>	63,444	16,445	-		-			-
<b>Total</b>	391,567	180,898	69,845	8.2	8,506		310	8,857
<b>Urban Growth Target</b>		173,372	66,939	7.2	9,297			
<b>Plus 10% market factor</b>		17,337	6,694	7.2	930			
<b>Land Capacity Target</b>		190,709	73,633	7.2	10,227	<b>-1,370</b>		<b>8,857</b>

Source: Clark County Community Planning. Note: Land needs are based on the VLM2007V model using net acres.

**Table 29**  
**2024 Residential Land Need Based on Observed Density**

	2004 Population	Remaining Population for planning horizon 2024	Residential units needed	Observed units per net acre	Residential acres needed	Deficit	Surplus	2007 Vacant and Buildable Land Inventory in net acres
UGA								
<b>Battle Ground</b>	15,152	24,247	9,362	4.36	2,147	-929		1,218
<b>Camas</b>	18,205	18,268	7,053	4.77	1,479	-486		993
<b>LaCenter</b>	2,363	5,719	2,208	4.03	548	-111		437
<b>Ridgefield</b>	2,651	21,228	8,196	3.98	2,059	-853		1,206
<b>Three Creeks</b>	-	39,893	15,403	-	-	-	-	-
<b>Vancouver</b>	277,242	45,499	17,567	6.93	2,535		1,891	4,426
<b>Washougal</b>	11,248	9,176	3,543	4.21	842	-306		536
<b>Yacolt</b>	1,262	423	163	3.68	44	-4		41
<b>Rural</b>	63,444		-		-			-
<b>Total</b>	391,567	173,372	66,939		<b>9,654</b>	<b>-797</b>		<b>8,857</b>

Source: Clark County Community Planning. Note: Land needs are based on the VLM2007 V model using net acres.

In conclusion, based on observed density and the Comprehensive Growth Management Plan BOCC Land Use Map, August 14, 2007 the UGAs show a deficit of 797 acres. If density continued to develop at the observed densities, then this deficit might become true by 2024. However, Battle Ground, Camas, La Center, Ridgefield, Vancouver, Washougal and Clark County have adopted local development regulations and revitalization of downtown areas that may reflect higher density development within the planning horizon. The market and economy might regulate development and density possibly delaying UGAs seeing on the ground development with higher densities. For exact development regulations, please see the assessment of reasonable measures section.

### **Commercial and Industrial Needs Analysis**

The 2007 Comprehensive Plan assumed an employment density of 20 jobs/acre for commercial development and 9 jobs/acre for industrial development. The employment forecast for the updated 20-year planning period is 138,312 new jobs by 2024. Since 2004, 4,200 new jobs have been added countywide which leaves 134,112 jobs yet to be allocated. The 2007 Comprehensive Plan update assumes a split of 62%/29%/9.0% for commercial, industrial and public sector employment (no land was allocated for public sector employment). The numbers of commercial and industrial jobs that remain to be allocated by 2024 are 83,149 (62%) and 38,892 (29%) respectively. With the Board of Clark County Commissioner's overrides and estimated public sector jobs, the total remaining jobs to be allocated by 2024 are 134,412.

Based on the 2007 Comprehensive Plan assumptions of 20 jobs/acre for commercial development and 9 jobs/acre for industrial development 4,376 acres are needed for commercial employment and 3,213 acres are needed for industrial employment.

## **Capacity Analysis**

The tables below provide the vacant and buildable lands per urban growth area in the residential, commercial and industrial areas based on the August 14, 2007 plan map vacant lands model numbers. Countywide there are 8,856 net buildable residential acres with a capacity of 190,709 residents; 4,376 net buildable commercial acres with an employment capacity of 86,471 and 3,213 net buildable industrial acres with an employment capacity of 28,916. Potential jobs not captured by the vlm increase the number of total jobs by 16,775, and the public sector jobs add 6,600, thus increasing the total job capacity from 115,387 to 138,743. This job capacity number exceeds the urban growth target of 138,312 by 431 jobs.

**Table 30**  
**Residential Capacity Analysis, 2007**

	<b>Gross Acres</b>	<b>Net Acres</b>	<b>Households</b>	<b>Total Capacity</b>	<b>Population Total Capacity</b>	<b>Average Density DUs / Net Acre</b>
<b>Battle Ground</b>						
City	866.0	373.5	3,406	3,406	8,822	9.1
UGA	1,937.6	844.0	5,956	5,956	15,426	7.1
Total	2,803.6	1,217.5	9,362	9,362	24,247	7.7
<b>Camas</b>					0	
City	1,193.9	527.6	3,001	3,846	9,961	7.3
UGA	1,043.7	465.8	4,052	4,052	10,495	8.7
Total	2,237.6	993.4	7,053	7,898	20,456	8.0
<b>La Center</b>					0	
City	110.2	51.6	206	206	535	4.0
UGA	893.1	385.7	2,002	1,916	4,962	5.0
Total	1,003.3	437.3	2,208	2,122	5,497	4.9
<b>Ridgefield</b>					0	
City	1,326.7	594.7	3,841	3,841	9,948	6.5
UGA	1,450.1	611.3	4,355	4,355	11,279	7.1
Total	2,776.8	1,206.0	8,196	8,196	21,228	6.8
<b>Three Creeks</b>					0	
City	0.0	0.0	0	0	0	0.0
UGA	4,763.7	2,150.5	15,403	15,553	40,282	7.2
Total	4,763.7	2,150.5	15,403	15,553	40,282	7.2
<b>Vancouver</b>					0	
City	1,570.3	757.5	6,635	11,931	30,901	15.8
UGA	3,162.3	1,517.2	10,932	11,082	28,702	7.3
Total	4,732.6	2,274.7	17,567	23,013	59,604	10.1
<b>Washougal</b>					0	
City	665.2	287.6	1,648	1,793	4,644	6.2
UGA	552.8	247.9	1,895	1,895	4,908	7.6
Total	1,218.0	535.5	3,543	3,688	9,552	6.9
<b>Yacolt</b>					0	
City	63.2	35.7	143	143	370	4.0
UGA	9.6	5.1	21	21	53	4.0
Total	72.8	40.8	163	163	423	4.0
					0	
<b>Urban Total</b>	<b>19,608.4</b>	<b>8,855.7</b>	<b>63,495</b>	<b>69,995</b>	<b>181,288</b>	<b>7.9</b>
<i>Urban Growth Target</i>				<b>66,939</b>	<b>173,372</b>	
<i>Plus 10% market factor</i>				<b>6,694</b>	<b>17,337</b>	
<i>Land Capacity Target</i>				<b>73,633</b>	<b>190,709</b>	

Source: Clark County Community Planning Issue Paper #1 – August 14, 2007 Map (Vacant Lands Model Numbers).  
Note: Residential market factor is included in the land capacity target.

**Table 31  
Commercial and Industrial Capacity Analysis**

<b>Employment</b>									
	<b>Commercial</b>				<b>Industrial</b>				
	<b>Gross Acres</b>	<b>Net Acres</b>	<b>Jobs</b>		<b>Gross Acres</b>	<b>Net Acres</b>	<b>Jobs</b>	<b>Potential Jobs*</b>	<b>Total Jobs</b>
<b>Battle Ground</b>									
City	530.8	343.4	6,868		185.2	73.9	665	0	7,533
UGA	406.6	263.8	5,277		47.5	24.8	223	0	5,500
<b>Total</b>	<b>937.4</b>	<b>607.2</b>	<b>12,145</b>		<b>232.7</b>	<b>98.7</b>	<b>888</b>	<b>0</b>	<b>13,033</b>
<b>Camas</b>									
City	734.4	489.8	9,796		164.2	69.5	625	-30	10,391
UGA	611.1	397.9	7,958		0.0	0.0	0	0	7,958
<b>Total</b>	<b>1,345.5</b>	<b>887.7</b>	<b>17,754</b>		<b>167.5</b>	<b>71.9</b>	<b>647</b>	<b>-30</b>	<b>18,371</b>
<b>La Center</b>									
City	7.9	5.2	105		0.0	0.0	0	70	175
UGA	90.9	65.2	1,304		513.3	297.2	2,675	0	3,979
<b>Total</b>	<b>98.8</b>	<b>70.4</b>	<b>1,409</b>		<b>513.3</b>	<b>297.2</b>	<b>2,675</b>	<b>70</b>	<b>4,154</b>
<b>Ridgefield</b>									
City	891.3	589.6	11,791		604.4	353.3	3,180	0	14,971
UGA	131.1	86.6	1,732		1.6	0.6	5	0	1,737
<b>Total</b>	<b>1,022.4</b>	<b>676.2</b>	<b>13,523</b>		<b>606.0</b>	<b>353.9</b>	<b>3,185</b>	<b>0</b>	<b>16,708</b>
<b>Three Creeks</b>									
City	0.0	0.0	0		0.0	0.0	0	2,180	2,180
UGA	1,049.5	713.1	14,261		307.8	179.5	1,616	-200	15,677
<b>Total</b>	<b>1,049.5</b>	<b>713.1</b>	<b>14,261</b>		<b>307.8</b>	<b>179.5</b>	<b>1,616</b>	<b>1,980</b>	<b>17,857</b>
<b>Vancouver</b>									
City	534.7	387.7	7,754		2,434.9	1,181.9	10,637	13,386	31,777
UGA	1,368.7	938.2	18,764		1,709.7	924.4	8,320	0	27,084
<b>Total</b>	<b>1,903.4</b>	<b>1,325.9</b>	<b>26,518</b>		<b>4,144.6</b>	<b>2,106.3</b>	<b>18,957</b>	<b>13,386</b>	<b>58,861</b>
<b>Washougal</b>									
City	190.3	79.2	713		231.6	96.8	871	1,349	2,933
UGA	26.7	10.0	90		5.5	2.1	19	0	109
<b>Total</b>	<b>217.0</b>	<b>89.2</b>	<b>803</b>		<b>237.1</b>	<b>98.9</b>	<b>890</b>	<b>1,349</b>	<b>3,042</b>
<b>Yacolt</b>									
City	0.0	0.0	0		0.0	0.0	0	0	0
UGA	9.7	6.5	59		9.7	6.5	59	0	118
<b>Total</b>	<b>9.7</b>	<b>6.5</b>	<b>59</b>		<b>9.7</b>	<b>6.5</b>	<b>59</b>	<b>0</b>	<b>118</b>
<b>Urban Jobs</b>	<b>6,583.7</b>	<b>4,376.2</b>	<b>86,471</b>		<b>6,219</b>	<b>3,213</b>	<b>28,916</b>	<b>16,755</b>	<b>132,143</b>
<b>Public sector</b>	<b>(excluding public sector overrides)</b>								<b>6,600</b>
<b>Total</b>									<b>138,743</b>
<b>Urban Growth Target</b>									<b>138,312</b>

Source: Clark County Community Planning Issue Paper #1 – August 14, 2007 Map (Vacant Lands Model Numbers).  
\*Not captured by VBLM



### **Assumptions used in capacity analysis for Residential :**

- Vacant and underutilized residential land:
  - ❖ 10 percent vacant never to develop
  - ❖ 30 percent underutilized never to convert
- 5 % development factor on critical land.

Please refer to page 8 for additional residential land assumptions

### **Assumptions used in capacity analysis for Commercial:**

- 20 employees per acre for commercial.
- 25% acreage deduction for infrastructure.

### **Assumptions used in capacity analysis for Industrial :**

- 9 employees per acre for industrial.
- 25% acreage deduction for infrastructure.
- Excludes tax-exempt (except port).

### **Summary**

- Based on the August 14, 2007 plan map inventory of vacant and buildable land there are 8,857 net buildable acres. At a potential of 7.5 dwelling units per acre and 2.59 persons per household, this land area will accommodate 173,372 persons. This includes all the City of Vancouver (Vancouver Central City Vision Plan submitted overrides or 11,787) and small lots estimates and with the ten percent rural population allocation (19,262) the total comes to 200,5000 new people. Because the Board direction is for a 10 percent residential market factor determining the size of urban growth areas, that would bring the urban land capacity target to 190,709. Therefore, the August 14, 2007 plan map is short by approximately 9,421 people. With implementation of the cities reasonable measures and other planned development there may be sufficient capacity to accommodate the projected 2024 population.
- Based on the current inventory of vacant and buildable land, there are 4,376 net buildable commercial acres and 3,213 net buildable industrial acres. Thus, there is potential job capacity of 138,743.
- Given the underlying zoning, the total vacant and development potential in the rural area is approximately 7,387 lots. Assuming 2.59 persons per household, there is capacity to add 19,132 persons in the rural areas.

## Appendix A

The data collected for this report is available online at [www.clark.wa.gov/longrangeplan/review/plan-monitoring.html](http://www.clark.wa.gov/longrangeplan/review/plan-monitoring.html) or via CD-Rom from the Department of Community Development.

# CLARK COUNTY BUILDABLE LANDS

## Data Collection and Monitoring Procedures

### INTRODUCTION

The following guidelines and methods provide Clark County and its seven cities with a procedure to meet the data collection, monitoring and evaluation requirements of Senate Bill 6094: Buildable Lands legislation. This procedure guideline is intended to provide jurisdictions with flexibility while maintaining basic consistency of format and product.

The guidelines are organized into six sections: background, purpose, procedures and format for data collection, roles and responsibilities, product due dates and format for data transmittal, and assumptions/methods for processing data

### I. BACKGROUND

The Growth Management Act of 1990, required Clark County and its cities to designate urban growth areas of sufficient size to accommodate their 20-year population projections. To accomplish this task, Clark County, in conjunction with its cities, developed assumptions used to calculate a baseline land supply and development demand for vacant and underutilized land within each UGA.

In 1997, Senate Bill 6094 made amendments to GMA creating the Buildable Lands Program. This program requires Clark County and its cities to monitor development since the adoption of the comprehensive plan to determine if jurisdictions are achieving densities sufficient to meet anticipated population growth. Monitoring requires the annual collection of residential, commercial and industrial development activities through five year periods and the testing of assumptions used to establish land capacity within urban growth boundaries. The goal is to determine the amount and capacity of land needed to accommodate anticipated growth, and to identify steps to be taken to accommodate growth other than increasing the urban growth boundary should the results indicate an inadequate land supply. The legislation places the responsibility of meeting these requirements on the county, with the cooperation of cities within the county.

## II. PURPOSE

The Buildable Lands/Development Analysis is part of a process to determine if development within the individual urban growth areas is occurring consistent with their adopted comprehensive plans and countywide planning policies. The process also allows for testing assumptions used by the county and its cities in the Vacant Lands Analysis for calculating land needed for establishing urban growth boundaries and achieving growth objectives.

## III. PROCEDURES FOR DATA COLLECTION

### 1. Residential/Multi-family Development

Purpose: To test the split of residential and multi-family development (no more than 75% of one housing type assumption) developed early in the growth management process. This assumption was used to calculate the residential land supply needed within each urban growth area to accommodate the future population projection provided by the Washington State Office of Financial management. It also represents the largest land use category taken into consideration for developing the urban growth boundaries. This is the only assumption used in the Vacant Lands Analysis process to refine the urban growth boundaries that varies from one UGA to another.

To test the residential/multi-family split for each UGA, permit activity information will be collected by the cities, except Vancouver and Yacolt. The following tables suggest a format for residential permit activity.

### Monthly Permit Activity (Suggested Format)

Table 1. Permit data								
Jurisdiction	Permit No	Address	Parcel No	Permit Type (SF, MF, MH, ADU )	Number of Residential Units	Property Owner	Non-Residential Bldg SqFt	Issue Date

#### Issues:

- *What data should be used to recognize annual residential permit activity.*
  - *Not all residential permits with an approved status are built*
- *Tracking permits for Accessory Dwelling Units*
- *Tracking permits for duplex units - How these are handled by each UGA.*
- *Tracking permits for single family attached units (Condominiums)*
- *Tracking permits for mobile homes outside parks should be included in single family*
- *Tracking permits for mobile homes inside parks.*

**2. Residential Land Division and Development Activity**

Purpose: Track residential density of land developed in single family and multi-family land use zones from the beginning of 1995 through 1999, and each year thereafter. These data will help determine if UGAs are meeting the tiered density assumptions for single family development.

**Residential Land Division (Suggested Format)**

Table 2. Residential Land Division																	
Year	City/County	City UGA	Final Plat No.	Subd. Book/Page	Parcel(s) Serial No.	Comp Plan	LU Zone	Gross Acre	# Lots	Acre of environ. constr.		Acre for infra. (roads, stmwater, etc)		Acreage for other (Parks, open space, etc)		Total Gross (net acre)	Net Density  lots/net ac
										Ac	Type	Ac	Type	Ac	Type		

Only those constraints and any buffers that limit or reduce the development potential of a parcel should be deducted to arrive at density per net acre. Acreage should be rounded to the tenth acre. e.g. 8.9 acres  
 (Note: The county needs to collect SF and MF permit data on land under the county’s jurisdiction both within each UGA and outside UGAs which will require slightly different format than what will be used by cities collecting data within their city limits only. Shaded columns apply to city data collection.)

**Multi-family Development (Suggested Format)**

Table 3. Multi-family Development																	
Year	City/County	City UGA	Final Plat No.	Status	Parcel(s) Serial No.	Comp Plan Des.	LU Zone	Gross Acre	# of Units	Acre of environ. constr.		Acre for infra. (roads, stmwater, etc)		Acreage for other (Parks, open space)		Net Acres	Net Density  units/net ac
										Ac	Type	Ac	Type	Ac	Type		

Only those constraints and any buffers that limit or reduce the development potential of a parcel should be deducted to arrive at density per net acre. Acreage should be rounded to the tenth acre. e.g. 8.9 acres

### 3. Commercial and Industrial Employment

Purpose: Track employment growth related to commercial and industrial development. This data will assist in determining if each UGA is meeting the development assumption of 20 employees per net commercial acre and 9 employees per net industrial acre for meeting their future employment capacity needs.

#### Commercial and Industrial Development (Suggested format)

Table 4. Commercial and Industrial Development										
Year	Project Name	Phased Proj? Yes/No	% site Dev (Phased Projects)	Names of Other Businesses in the Project	Occupancy Permit Date	Type of business activity (NAICS classificati	Address	Comp Plan Desig.	Land Use Zone	Parcel(s) Serial No.

Each jurisdictions will need to provide the above information. This option allows for a parcel level/development specific analysis.

Information provided by the cities from the above table will be linked to the following table for further analysis by assessor parcel id. An interim table/analysis will identify employees for each project based on parcels developed and employment data from state 202 records.

Table 5. Commercial and Industrial Development																
Year	City/ County	City UGA	Proj Name	Assessor Parcel id(s)	Comp Plan Des.	LU Zone	Gross Acre	Bldg Sq Ft.	Empl at parcel(s)	Acre of environ. Constr.		Acre for infra. (roads, stmwater, etc)		Acreage for other (Parks, open space)	Net acreage	Net empl Density
										Ac	Type	Ac	Type			

Only those constraints and any buffers that limit or reduce the development potential of a parcel should be deducted to arrive at density per net acre. Acreage should be rounded to the tenth acre. e.g. 8.9 acres

#### Issues

- Tracking employment changes to a parcel over time due to the addition of shifts, additions of buildings, demolition of buildings, etc.

#### **IV. Roles and Responsibilities**

- Cities electing to do their own analysis will collect all data from each table consistent with the procedures outlined in these guidelines and conduct an analysis based on procedures currently being developed and modeled after the draft guidelines prepared by the Growth Management Program, Local Government Division.
- Cities electing to have the county conduct the Buildable Lands Analysis will provide the information requested in the shaded columns from each table.
- The county will collect information for land under its jurisdiction, both outside and within each UGA.
- The county will conduct the Buildable Lands Analysis for cities electing to have the county act on their behalf.

#### **V. City product due dates and format for data transmittal**

By June 30<sup>th</sup> of each year, each city shall submit to Clark County the following information using a **suitable format**:

1. Annual report of residential permit activity. (Table 1)
2. Annual report of residential land divisions (Table 2)
3. Annual report of multi-family development (Table 3)
4. Annual report of commercial and industrial development (Table 4)

The county will use the information transmitted to conduct an analysis of actual development density that has occurred since the adoption of the comprehensive plans by UGA with development assumptions used to create their land use base.

## **Appendix B**

# **CLARK COUNTY VACANT AND BUILDABLE LANDS MODEL**

## **INTRODUCTION**

In 1992, Clark County began the vacant land analysis to determine the potential capacity of urban growth areas to accommodate projected growth for the next 20 years to the year 2012. County staff met with interested parties from the development and environmental community to collectively examine criteria to be used to compute the supply of land available for development within each urban growth boundary. The criteria developed were divided into two main categories: Vacant Buildable Land Criteria, and Land Utilization and Development Assumptions.

From this process, a methodology was developed using Clark County's Geographic Information System (GIS) as the primary data source. In addition, data from the Office of Financial Management (OFM) provided population figures and the Washington State Employment Security Department provided employment projections and acreage figures for commercial and industrial land supply and demand.

Monitoring development capacity within the urban growth boundaries provides an early warning when the capacity to accommodate future growth becomes critically short. Clark County is currently updating its vacant buildable lands to address issues relating to land consumption and availability.

## **METHODOLOGY FOR VACANT AND UNDERUTILIZED VACANT LAND CRITERIA**

This report accounts for all land within the urban growth boundaries for each UGA. The following steps were established for developing a reproducible process for future analysis of determining the supply of vacant and underutilized acreage for residential, commercial and industrial land. Some of the steps apply to all land use categories while other steps apply to a specific use.

### **Methodology amendments**

As part of refining the vacant lands methodology, several land use categories identified in the original process and appearing on the map legends have been eliminated. For one reason or another, their designation is no longer considered crucial to the process. These categories include:

- All pending plats
- Home Builders exclusions
- Planning exclusions

## Resource lands

These categories will show on current maps as built, vacant, underutilized, or exempt, or as vacant or underutilized with critical lands.

**Steps A1 through A2 apply to all vacant and underutilized land use categories as appropriate.**

*Step A1 Calculate the total number of acres within each UGA.*

Using a traditional approach to the calculation of land supply, the process begins by looking at the total overall acreage including vacant, developed and constrained lands. This process allows for changes to property that, as updated or new information is incorporated into the database, properties will be given the appropriate designation based on criteria assumptions.

*Step A2 Remove all parcels not in the land use category being analyzed.*

To calculate the total vacant and underutilized acreage for each land use designation, it is necessary to subtract all parcels that do not have the land use designation being analyzed. For example, if vacant and underutilized residential land is being analyzed, then all non-residential land is subtracted from the base total. The same process applies for the commercial and industrial analysis.

**Steps R1 through R7 apply to vacant residential acreage.**

*Step R1 Identify residential mobile homes.*

Prior to the identification of vacant residential lands, parcels with mobile homes must be identified to avoid being classified as vacant due to a building value of less than or equal to \$13,000.

*Step R2 Identify vacant residential acreage.*

Vacant residential land is identified as parcels having no structure with an assessed value of more than \$13,000.

*Step R3 Identify and classify underutilized residential acreage.*

Residential parcels that are greater than or equal to 1.0 acre in size may be classified as underutilized based on the building value per acre. Building Value per acre is determined by summing up the assessed building values for a parcel and dividing it by the number of acres. The building value per acre is determined for all residential parcels within the proposed UGA. Parcels falling in the bottom 20<sup>th</sup> percentile of all building value per acre values are considered underutilized. These parcels are held in a



separate category to which different development standards shall be applied.

***Step R4 Identify and classify mansions and condominiums.***

The mansion and condominiums parcels are defined by the following criteria. Parcels with a building value per acre above the 20<sup>th</sup> percentile are placed in the built classification. They are sub classified as mansions and condominiums.

***Step R5 Identify Critical areas.***

Critical lands include steep slopes, wetlands, floodplains, priority habitat and species buffers, hydric soils, and shoreline management areas. Vacant and Underutilized lands with any critical criteria are sub-classified as critical. A single vacant parcel might include both Vacant not critical and Vacant critical areas.

***Step R6 Identify and classify tax exempt and publicly owned parcels, or institutional.***

Tax exempt and state assessed parcel is identified based on the exempt status. Tax Exempt parcels are removed from the vacant or underutilized categories.

***Step R7 Identify and classify easements and rights-of-way.***

Easements and rights-of-way identified by the Clark County Assessor. Easements are removed from the vacant and underutilized categories.

**Steps C1 through C6 apply to the vacant commercial and industrial acreage supply analysis.**

***Step C1 Identify vacant commercial and industrial acreage.***

Vacant commercial and industrial land is identified as parcels having no structure with an assessed value greater than \$67,500.

***Step C2 Identify underutilized commercial and industrial acreage.***

Commercial and industrial land with a building value per acre less than \$50,000 is classified as underutilized.

***Step C3 Classify vacant and underutilized commercial and industrial land by acreage stratification:***

- 5,000 sq.ft to 0.99 Acres
- 1.00 – 2.49 Acres
- 2.50 – 4.99 Acres
- 5.00 – 9.99 Acres

10.00 Acres or more

*Step C4 Identify and subtract parcels that are less than 5,000 square feet in size.*

These parcels are identified as a separate exclusion category and subtracted from the vacant acreage total due to a size constraint.

*Step C5 Identify and subtract environmentally constrained parcels identified as land having any Critical areas.*

Vacant and Underutilized lands with critical lands are sub-classified as Vacant with critical and Underutilized with critical. A single vacant commercial parcel might include both critical and not-critical areas.

*Step C6 Identify and classify tax exempt and publicly owned parcels.*

Tax exempt and publicly owned parcel is identified based on the exempt status declared by the Clark County Assessor. Tax-exempt parcels are removed from the Vacant and Underutilized categories.

## **LAND UTILIZATION AND DEVELOPMENT ASSUMPTION CRITERIA**

Land utilization assumptions are used to calculate acreage demanded to meet the need of the future population growth for each land use category.

**Residential Demand - Using the net adjusted acreage calculated for residential supply, apply the following residential land utilization assumptions to arrive at the total residential acreage demanded.**

*Step RD1 Subtract land for future infrastructure needs.*

The average infrastructure requirements for residential development from 1996-2005 was 27.7%. This infrastructure deduction was applied to all residential vacant and underutilized property.

Mixed use property has both a commercial and residential component. Mixed use land use designations are evaluated using the commercial model. The portion of that property dedicated to residential use receives the commercial infrastructure deduction, 25%.

*Step RD2 Subtract a percentage of the total vacant and underutilized residential acreage.*

This step recognizes that not all land available for development and redevelopment will be developed within the next 20 years for one reason or another. For vacant residential land, it is assumed that 10% of these lands will not develop and for underutilized, it is

assumed that 30% of these lands will not develop.

**Step RD3**     *Subtract 5% for errors due to limitations in processing residential data.*

Errors are most likely due to inherent limitations in the data, primarily lag time in digitizing and processing information.

**Step RD4**     *Add a 10% market factor to vacant and underutilized residential land.*

Vacant and underutilized residential acreage is increased by 10% to prevent the artificial inflation of land prices due to a perceived shortage.

**Step RD5**     *Critical Lands Deduction*

During the period 1996-2005 it was determined that critical lands developed at half the rate of non-constrained lands. Over the course of the plan it is assumed only 50% of the critical lands will develop. It was also noted that critical lands developed into a higher percentage of parks and open space than non-critical lands.

**Commercial Demand - Using the net adjusted acreage calculated for commercial supply, apply the following commercial land utilization and development assumptions to arrive at the total commercial acreage demanded.**

**Step CD1**     *Divide the number of commercial jobs allocated to each UGA by 20.*

Commercial acreage demand is based on a ratio of 20 commercial jobs per acre for meeting future commercial employment needs.

**Step CD2**     *Increase the base commercial demand by a 25% infrastructure adjustment.*

Commercial land used for infrastructure needs is not available for providing employment.

**Industrial Demand - Using the net adjusted acreage calculated for industrial supply, apply the following industrial land utilization and development assumptions to arrive at the total industrial acreage demanded.**

**Step ID1**     *Divide the number of industrial jobs allocated to each UGA by 9.*

Industrial acreage demand is based on a ratio of 9 industrial jobs per acre for meeting future industrial employment needs.

**Step ID2**     *Increase the base industrial demand by a 25% infrastructure adjustment.*

Industrial land used for infrastructure needs is not available for providing employment.