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CLARK COUNTY
WASHINGTON

CLARK COUNTY

**BUILDABLE
LANDS
REPORT**

FINAL

August 2002

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Judie Stanton, Chair
Betty Sue Morris
Craig Pridemore

County Administrator

Bill Barron

Department of Community Development

Richard Carson, Director
Patrick Lee, Long Range Planning Manager
Oliver Orjiako, Senior Planner
Phil Wuest – Planner III
Jose Alvarez – Planner I

Community Development would like to
thank:

Department of Assessment and GIS

Ken Pearrow
Dan Bauer
Andrew Neuman
Deborah Whitcomb

EXECUTIVE SUMMARY

This report is the first step in meeting the requirements of RCW 36.70A.215, The Growth Management Act Review and Evaluation Program. In it, Clark County reports on residential and employment densities achieved since adoption of the 1994 Comprehensive Plan. Data was compiled by Clark County and its cities. 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 January 1, 1995 through June 30, 2000. 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 acres developed are shown as net acreage while commercial and industrial land are shown as gross 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 (1995-2000) Clark County overall achieved a split of 72% single family development and 28% multi-family development. Within the Vancouver city limits the split is 50/50 between single family and multi-family. The individual Urban Growth Area's observed an overall density of 6 dwelling units per acre.
- Residential development within the urban area of Clark County consumed 3,286 acres with a density of 6 dwelling units per acre. Based on the current inventory of vacant and buildable land there are 4,719 acres of net buildable acres. At 6 dwelling units per acre and 2.33 persons per household this land area will accommodate 65, 122 persons. Combined with the capacity in the rural area there is sufficient capacity to accommodate the projected 2012 population.
- The review and evaluation has indicated that commercial and industrial development for the county during the period consumed 1600 acres of land. Commercial uses consumed 465 acres and industrial uses consumed 1,162 acres. Based on the current inventory of vacant and buildable land there are 1,131 net buildable commercial acres and 3,960 net buildable industrial acres.
- The county is reviewing its sewer policy in the urban area and potentially amending it to require sewer in the urban area that would likely increase density in the unincorporated portions of the urban area. Review of development indicates that 9% of all development occurred on land with some environmental constraint component. Five percent of all development occurred on land that is greater than 50% critical, land that was excluded from the vacant buildable lands inventory. There were 2,481 building permits issued in the rural area on 11,900 acres. Given the underlying zoning the total vacant and development potential in the rural area is approximately 13,577 lots. Assuming 2.6 persons per household, there is potential for additional rural capacity of 35,300 persons.
- The preliminary analysis of current land inventory indicates there is sufficient land within the existing UGA to accommodate the 2012 population.
- The evaluation report demonstrates that the county falls short of the target on the 60/40 split between single family and multi-family development. There is concern in the community that the target was

set too high and would need to be revised based on local conditions and the observed development. The employment density was difficult to estimate because of the proprietary nature of employment data. However, employment density observed in commercial and industrial is 22 and 10 employees per acre, respectively. This far exceeds the comprehensive plan assumptions of 12 employees per acre in the commercial sector and 9 in the industrial.

Table of Contents

Introduction.....	1
Process.....	2
Methodology.....	2
Baseline Assumptions.....	2
Gross and Net Acres.....	3
Population and Employment.....	4
Single Family Development	6
Critical Lands.....	20
Multi-family Development.....	8
Residential Housing Split.....	10
Commercial Development & Employment Density.....	11
Employment Density Methodology.....	12
Building Permits by Jurisdiction.....	13
Site Plan Review.....	21
Identify Reasonable Measures.....	24
Buildable Lands Needs Analysis.....	28
Buildable Lands Capacity Analysis.....	31
Appendix A.....	33

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. There are three sections that 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."

PROCESS

Clark County, in consultation with each city, has been working for the last 18 months 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.

METHODOLOGY

Data was compiled by Clark County and its cities. The primary sources of data were new commercial, industrial and residential building permits, subdivisions and short plats, and site plan reviews that have been issued or reviewed from January 1, 1995 through June 30, 2000. 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.

Site plan reviews submitted to the County were analyzed to evaluate infrastructure assumptions in commercial, industrial and multi-family development. Data collected includes site acreage, building coverage, landscaped area, units for multi-family development and parking spaces provided. Short plats and subdivisions were analyzed to gauge density and infrastructure assumptions for residential development.

Baseline Assumptions of Clark County 20 Year Comprehensive Growth Management Plan

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 Geographic Information System (GIS) as the primary data source.

The 1994 vacant buildable lands analysis supplements input from the cities on the topographical constraints of their land supply. The 1994 Comprehensive Plan provides the baseline for the current evaluation. The assumptions of the plan are:

- 60/40 single family/multi-family split of new residential units
- 6 dwelling units/acre (du/acre) for single family development
- 16 du/acre for multi-family development
- 2.33 persons per household in single family development

- 1.8 persons per household in multi-family development
- 12 employees/acre for commercial development
- 9 employees/acre for industrial development
- 123,000 additional population in 2012¹

Variable residential infrastructure deductions:

- 25% deduction for parcels between 20,000 sq. ft. – 1 acre
- 30% deduction for parcels between 1- 2.5 acres
- 40% deduction for parcels 2.5 acres or larger

Commercial and Industrial Infrastructure:

- 25% deduction

Market factor:

- 25% for residential and commercial
- 50% for industrial

Gross and Net Acres

A gross acre of vacant land is defined as the total amount of land before infrastructure dedication, i.e. (public right-of-way, private streets, public utility easements, open space tracts, or parks) but after critical areas have been deducted. A net buildable vacant acre is an acre of buildable vacant land after dedication for infrastructure.

In this report, residential acres developed are shown as net acreage while commercial and industrial land are shown as gross 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.

¹ 1992 is base year for the 20 year planning horizon.

Population and Employment

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 2012 is 416,071. Since 1995, the County's population has increased by 56,000 persons.

Table 1. 1994-2000 Annual Population Estimates for Clark County & City UGAs

UGA	1994	1995	1996	1997	1998	1999	2000	Adopted 2012 Population Allocation	Assumed Annual Growth Rate 1995-2012	Annualized Growth Rate 1995-2000
Battle Ground	5,892	6,379	7,883	8,991	9,324	9,699	10,046	15,610	5.56%	9.30%
Camas	8,250	8,951	9,765	10,830	11,447	11,823	12,260	22,388	5.70%	6.82%
LaCenter	794	916	1,356	1,628	1,662	1,775	1,900	2,816	7.29%	15.65%
Ridgefield	2,092	2,187	2,286	2,404	2,459	2,492	2,602	7,488	7.34%	3.70%
Vancouver	203,864	210,445	217,797	226,047	235,298	242,031	244,912	269,841	1.57%	3.10%
Washougal	9,310	9,547	9,623	9,703	10,156	10,266	10,344	16,146	3.11%	1.77%
Yacolt	891	943	974	1015	1,042	1,093	1,118	1,448	2.73%	3.85%
Total UGA	231,093	239,368	249,684	260,618	271,388	279,179	283,182	335,737	2.10%	3.45%
Rural Area	49,707	51,632	53,816	56,182	56,612	57,821	61,818	79,689	2.66%	3.70%
County Total	280,800	291,000	303,500	316,800	328,000	337,000	345,000	416,071	2.21%	3.49%

Source: Clark County Assessment and GIS

Observations

Between 1995 and 2000:

- The county has experienced an annualized growth rate of 3.5% since 1995, exceeding the assumed 2.2% annualized growth rate.
- The annualized growth rate for each jurisdiction in the county has exceeded the assumed 2012 growth rate except for Ridgefield and Washougal UGA's.
- La Center and Battle Ground UGA's have experienced the highest rate of growth at 15.65% and 9.3%, respectively.
- Since 1994, Vancouver's UGA population has increased by over 40,000 persons.

The GMA does not mandate a source that must be considered in planning for future employment. The Washington State Employment Securities Department provided the employment forecast in 1994. The forecast was based on anticipated population growth, workforce participation, unemployment, and percentage of Clark County employees who commute to Oregon for work. Commercial and industrial employment assumptions are 12 jobs/acre and 9 jobs/acre, respectively. The employment forecast for the 20-year planning period is 58,100 new jobs of which 50,948 are for the UGA's.

Table 2 **Clark County Workforce**

	1995 – 1999 Number Increase	1995 – 1999 Percent Increase	Average Annual Increase
Population	46,000	15.8%	4.0%
Total Labor Force	27,300	18.1%	4.5%
Employment	26,400	18.2%	4.6%
Unemployment	900	14.8%	3.7%

Source: Clark County Long Range Planning

Observations

- From 1995 to 1999 Clark County added 27,300 to its total labor force, an average annual increase of 4.5%, for the same time period population growth was 4%.

Single Family Residential Development Activity (1995-2000)

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. The data collected was new single family building permits issued between January 1, 1995 and June 30, 2000. The parcel serial number from each building permit was linked to a GIS coverage to identify (1) parcels within city and urban growth area boundaries, (2) acreage and (3) critical area.

Table 3 below shows the number of single family building permits issued between January 1, 1995 and June 30, 2000. Charts 1 and 2 below show the density of development by UGA and the number of acres permitted for single family development, respectively. **Please refer to pages 13 -19 for an annual breakdown of each jurisdiction's building permits.**

Table 3. Single Family Building Permits from 1995-2000

		Single Family Development		
		Units	Acres	Du's/Acre
Battle Ground				
	City	1,285	230.05	5.6
	Total UGA	1,311	262.09	5.0
Camas				
	City	1,304	370.78	3.5
	Total UGA	1,316	374.12	3.5
La Center				
	City	289	61.60	4.7
	Total UGA	296	101.85	2.9
Ridgefield				
	City	86	36.77	2.3
	Total UGA	93	142.34	0.7
Vancouver				
	City	4,414	697.12	6.3
	Total UGA	10,726	1,950.93	5.5
Washougal				
	City	332	81.07	4.1
	Total UGA	344	117.32	2.9
Yacolt				
	City	42	12.12	3.5
	Total UGA	42	12.12	3.5
Total Cities		7,752	1,489.51	5.2
Total UGAs		14,128	2,960.77	4.8
Rural Area		2,481	11,899.48	0.2
Clark County Total		16,609	14,860.25	1.1

Source: Clark County, Community Development, Building Department, Cities of Camas, La Center, Ridgefield, Vancouver, and Washougal
Notes: Acreage for single family development is in net acres.

Chart 1. 1995-2000 Total Density of New Single Family Development

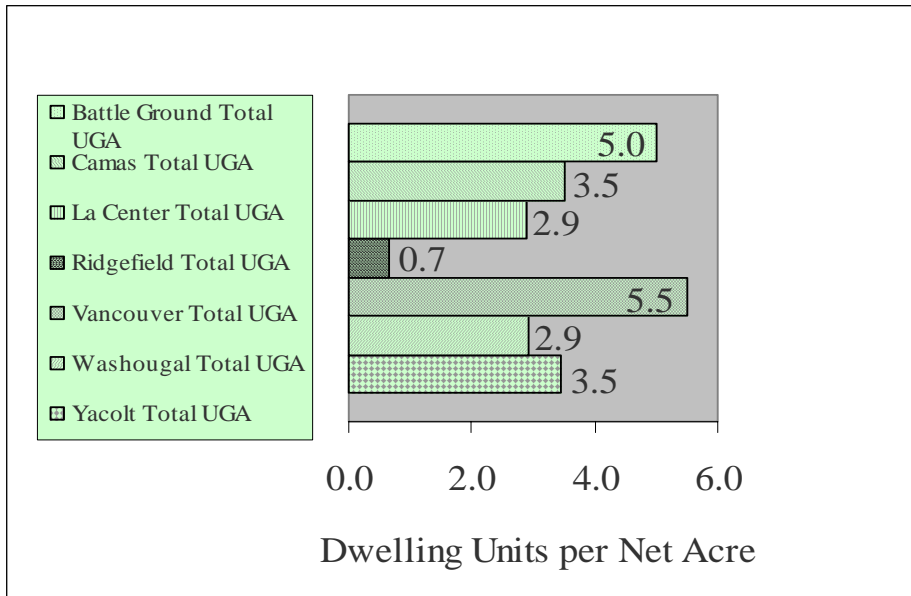
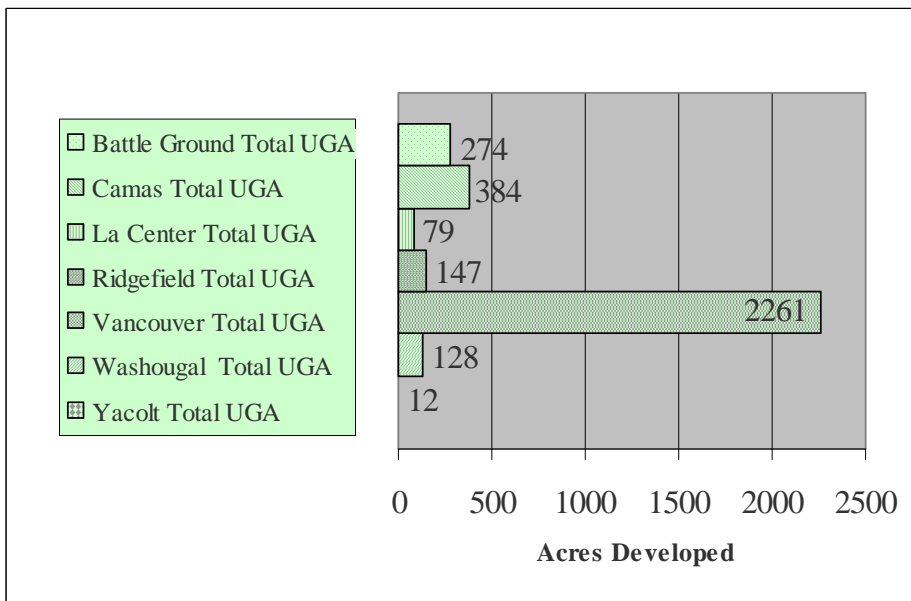


Chart 2. Residential Acres Developed between 1995-2000



Observations

Between 1995 and 2000:

- Overall, the UGA's observed a density of 4.77 units/net acre.
- The City of Vancouver has observed a density of 6.3 units/net acre when the unincorporated UGA is added the density drops to 5.5 units/net acre.
- Based on building permits, Clark County has developed on a total of 14,860 acres of single family residential land in both the urban and rural areas.

- Single family development has occurred on 11,899 acres of rural land, which is 80% of all single-family land that was developed.
- 2,961 acres of single family residential land has been developed on in all of the Urban Growth Areas, which is 20% of all single-family residential land developed.
- The density in the rural area of .21 dwelling units per acre is equivalent to an average lot size of 5 acres.

Multi-family Development Activity (1995-2000)

The Clark County Comprehensive Plan has a countywide goal of achieving a 60/40 split for new single-family and multi-family residential development to increase the range of housing type and affordability of housing within the UGAs. Multi-family² building permits issued from January 1, 1995 through June 30, 2000 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.

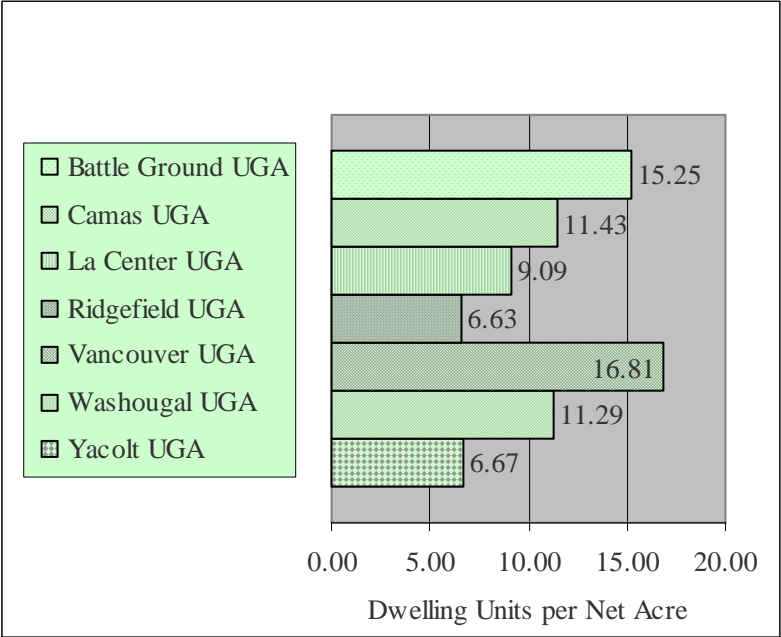
Table 4. 1995-2000 Multi-Family Building Permits

Battle Ground		Multi-Family Development		
		Units	Acres	Units/Acre
	City	174	11.1	15.68
	Total UGA	177	11.61	15.25
Camas				
	City	114	9.97	11.43
	Total UGA	114	9.97	11.43
La Center				
	City	7	0.77	9.09
	Total UGA	7	0.77	9.09
Ridgefield				
	City	32	4.83	6.63
	Total UGA	32	4.83	6.63
Vancouver				
	City	4,374	231.93	18.86
	Total UGA	5,218	310.47	16.81
Washougal *				
	City	126	11.16	11.29
	Total UGA	126	11.16	11.29
Yacolt				
	City	2	0.3	6.67
	Total UGA	2	0.3	6.67
Total Cities		4,829	270.06	17.88
Total UGAs		5,676	349.11	16.26

Source: Clark County, Community Development, Building Division, Cities of Camas, LaCenter, Ridgefield, Vancouver, and Washougal
 *Note: Residential building permits from the City of Washougal are incomplete, these numbers may change when the complete data set is analyzed.

² Property Type Identification (PTI) codes were used to identify single family and multi-family.

Chart 3. 1995-2000 New Multi-Family Density by UGA



Observations

Between 1995 and 2000:

- The UGAs overall achieved a multi-family density of 16.26 du/acre.
- The City of Vancouver achieved a multi-family density of 18.86 du/acre.

Clark County Housing Split

The 1994 Comprehensive Plan calls for a single family/multi-family housing split of new units to be 60/40 in order to provide a range of housing types. The table below shows single family/multi-family split from 1995 to 2000 for each of the Urban Growth Areas.

Table 5 1995-2000 Single Family / Multi-Family Split

Battle Ground	Single Family			Multi-Family			Total		
	Units	% SF	Acres	Units	% MF	Acres	Units	Acres	Units/Acre
City	1,285	88.1%	230.05	174	11.9%	11.10	1,459	241	6.05
Total UGA	1,311	88.1%	262.09	177	11.9%	11.61	1,488	274	5.44
Camas									
City	1,304	92.0%	370.78	114	8.0%	9.97	1,418	381	3.72
Total UGA	1,316	92.0%	374.12	114	8.0%	9.97	1,430	384	3.72
La Center									
City	286	97.6%	63.48	7	2.4%	0.77	293	64	4.56
Total UGA	296	97.7%	78.38	7	2.3%	0.77	303	79	3.83
Ridgefield									
City	86	72.9%	36.77	32	27.1%	4.83	118	42	2.84
Total UGA	93	74.4%	142.34	32	25.6%	4.83	125	147	0.85
Vancouver									
City	4,414	50.2%	697.12	4,374	49.8%	231.93	8,788	929	9.46
Total UGA	10,726	67.3%	1950.90	5,218	32.7%	310.47	15,944	2261	7.05
Washougal									
City	332	72.5%	81.07	126	27.5%	11.16	458	92	4.97
Total UGA	344	80.5%	117.32	126	19.5%	11.16	470	128	3.66
Yacolt									
City	42	95.5%	12.12	2	4.5%	0.30	44	12	3.54
Total UGA	42	95.5%	12.10	2	4.5%	0.30	44	12	3.55
Total Cities	7,749	61.6%	1,491	4,829	38.4%	270.06	12,578	1,761	7.14
Total UGAs	14,128	71.3%	2,937	5,676	28.7%	349.11	19,804	3,286	6.03
Rural Area	2,481	100.0%	11,899	NA	NA	NA	2,481	11,899	0.21
County Total	16,609		14,837				22,285	15,186	1.47

Source: Clark County, Community Development, Building Division, Cities of Camas, LaCenter, Ridgefield, Vancouver, and Washougal
Notes: Acreage for single family development is in net acres.

Observations

Between 1995 and 2000:

- The County overall achieved a split of 72% single family and 28% multi-family.
- The Vancouver UGA had a 67%/33% single family/multi-family split since 1994.
- Within the City of Vancouver a 50/50 split between single family and multi-family was observed.
- The UGAs have observed an overall density of 6 dwelling units per acre.

Commercial Development and Employment Density

Commercial building permits issued from January 1, 1995 through June 30, 2000 were collected. 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 7 below reflects commercial building permits sorted by comprehensive plan designation for industrial uses. Those permits are not included in table 6.

Table 6 Commercial Building Permits by UGA and Comp Plan Designation

UGA	# of Permits Issued	Total Acres	Critical Acres	% Critical
Battle Ground	28	30.29	20.05	66%
Camas	13	26.91	17.14	64%
La Center	2	1.90	0.11	6%
Ridgefield	1	1.61	1.61	100%
Vancouver	178	389.13	72.36	19%
Washougal	5	2.62	2.18	83%
Yacolt	0	0.00	0.00	0%
Total UGA	227	452.46	113.45	25%
Rural	9	12.71	7.88	62%
County Total	236	465.17	121.33	26%

Note: Acreage for commercial development is in gross acres.
Based on building permits issued in commercial areas by comp plan designation.

Table 7. Building Permits by UGA and Industrial Comp Plan Designation

Industrial Building Permits by UGA and Comp Plan Designation				
UGA	# of Permits Issued	Total Acres	Parcels w/Critical Acreage	% Critical
Battle Ground	4	8.78	7.66	87%
Camas	14	333.90	150.06	45%
La Center	0	0.00	0.00	0%
Ridgefield	4	36.18	30.85	85%
Vancouver	103	717.67	244.30	34%
Washougal	5	55.02	42.12	77%
Yacolt	0	0.00	0.00	0.00
Total UGA	130	1151.55	474.99	41%
Rural	1	10.80	7.36	68%
County Total	131	1162.35	482.35	41%

Note: Acreage for industrial development is in gross acres.
Based on building permits issued in industrial areas by comp plan designation.

Observations

- Based on commercial building permits issued development occurred on 465 acres of commercially designated land and 1,162 acres of industrial designated land.

Employment Density Methodology

This information is for employment based on new construction permits from 1995 to June 30, 2000. The building permit information was matched to parcels and employment locations to obtain acres and employment. A total of 399 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 8. Commercial and Industrial Employment Density

Land Use Designation		Urban Growth Area								
		Battle Ground	Camas	County	LaCenter	Ridgefield	Vancouver	Washougal	Yacolt	Grand Total
Commercial	Employees	694	893	368	272	167	33,350	367	22	36,133
	Acres	53.3	41.3	58.2	4.3	110.0	1,345.3	26.3	2.3	1,641.0
	Employees per Acre	13.0	21.6	6.3	63.3	1.5	24.8	14.0	9.5	22.0
Industrial	Employees	213	3,048	91		276	19,671	1,286		24,585
	Acres	21.6	346.8	47.7		107.1	1,745.1	206.1		2,474.5
	Employees per Acre	9.9	8.8	1.9		2.6	11.3	6.2		9.9

Source: Clark County Department of Assessment and GIS

Note that the employees per acre reported in Table 8 are employees per gross acre. The planning assumptions applied in 1994 were based on employees per net acre. The result is that the observed densities are in fact much greater than the 1994 planning assumptions.

Observations

- Employees per gross acre for commercial are 22 employees per acre and industrial is 10 employees per gross acre.

Table 9. Battle Ground Annual Residential Development 1995-2000

Single Family	1995			1996			1997			1998			1999			2000			Total 1995-2000		
	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	168	26.48	6.34	322	59.14	5.44	351	63.05	5.57	199	38.6	5.16	125	23.13	5.40	120	19.65	6.11	1285	230.1	5.59
Uninc. UGA	8	9.89	0.81	11	8.01	1.37	4	5.73	0.70	2	6.36	0.31	1	2.05	0.49	0	0	0.00	26	32.04	0.81
Total UGA	176	36.37	4.84	333	67.15	4.96	355	68.78	5.16	201	44.96	4.47	126	25.18	5.00	120	19.65	6.11	1311	262.1	5.00
Multi-Family																					
City of Battle Ground	93	6.79	13.70	16	0.66	24.24	62	3.4	18.24	2	0.17	11.76	1	0.08	12.50	0		0.00	174	11.1	15.68
Uninc. UGA	1	0.28	3.57				2	0.23	8.70						0				3	0.51	5.88
Total UGA	94	7.07	13.30	16	0.66	24.24	64	3.63	17.63	2	0.17	11.76	1	0.08	12.50	0		0.00	177	11.61	15.25

Source: Clark County Department of Community Development, Long Range Planning

- City of Battle Ground’s single family density was 5.6 du/acre; Multi-family density was 15.7 du/acre.
- Unincorporated Battle Ground UGA’s single family density was .81 du/acre, multi-family density was 5.88 du/acre.

Table 10. Battle Ground Annual Commercial and Industrial Development 1995-2000

	1995		1996		1997		1998		1999		2000		1995-2000 Total	
	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres
Commercial														
City of Battle Ground	2	3.46	3	1.91	1	1.66	3	0.85	4	1.59	15	20.82	28	30.29
Uninc. Battle Ground	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Battle Ground UGA	2	3.46	3	1.91	1	1.66	3	0.85	4	1.59	15	20.82	28	30.29
Industrial														
City of Battle Ground	0	0	1	4.72	0	0	0	0	1	1.78	2	2.28	4	8.78
Uninc. Battle Ground	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Battle Ground UGA	0	0	1	4.72	0	0	0	0	1	1.78	2	2.28	4	8.78

Source: Clark County Department of Community Development, Long Range Planning

Table 11. Camas Annual Residential Development 1995-2000

Single Family	1995			1996			1997			1998			1999			2000			Total 1995-2000		
	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	236	63.76	3.70	321	76.04	4.22	296	69.82	4.24	180	60.42	2.98	171	77.77	2.20	100	22.97	4.35	1304	370.78	3.52
Uninc. Camas UGA	1	0.38	2.63	1	0.21	4.76	0	0	0.00	1	0.72	1.39	0	0	0.00	9	2.04	4.41	12	3.35	3.58
Total Camas UGA	237	64.13	3.70	322	76.25	4.22	296	69.82	4.24	181	61.14	2.96	171	77.77	2.20	109	25.01	4.36	1316	374.12	3.52
Multi-Family																					
City of Camas	21	1.83	11.48	18	0.95	18.95	28	1.6	17.5	22	3.83	5.74	18	1.22	14.75	7	0.54	12.96	114	9.97	11.43
Uninc. Camas UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Camas UGA	21	1.83	11.48	18	0.95	18.95	28	1.60	17.50	22	3.83	5.74	18	1.22	14.75	7	0.54	12.96	114	9.97	11.43

Source: Clark County Long Range Planning

- City of Camas single family density is 3.52; multi-family density is 11.48.
- Unincorporated Camas UGA has a single family density of 3.58.

Table 12. Camas Annual Commercial and Industrial Development 1995-2000

Commercial	1995		1996		1997		1998		1999		2000		1995-2000 Total	
	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres
City of Camas	4	3.09	0	0	4	14.85	4	8.5	1	0.47	0	0	13	26.91
Uninc. Camas	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Camas UGA	4	3.09	0	0	4	14.85	4	8.5	1	0.47	0	0	13	26.91
Industrial														
City of Camas	2	12.14	1	116.07	4	42.11	3	154.39	3	6.31	1	2.85	14	333.87
Uninc. Camas	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Camas UGA	2	12.14	1	116.07	4	42.11	3	154.39	3	6.31	1	2.85	14	333.87

Source: Clark County Long Range Planning

Table 13. La Center Annual Residential Development 1995-2000

Single Family	1995			1996			1997			1998			1999			2000			1995-2000		
	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	63	12.4	5.08	59	13	4.54	69	13.9	4.96	47	10.05	4.68	24	6.3	3.81	27	5.95	4.54	289	61.6	4.69
Uninc. UGA	0	0	0	0	0	0	0	0	0	0	0	0	1	5.4	0.19	6	34.8	0.17	7	40.2	0.17
Total UGA	63	12.4	5.08	59	13	4.54	69	13.9	4.96	47	10.05	4.68	25	11.7	2.14	33	40.8	0.81	296	101.85	2.91
Multi-Family																					
City of La Center	3	0.34	8.82	0	0	0.00	4	0.43	9.30	0	0	0.00	0	0	0	0	0	0	7	0.77	9.09
Uninc. La Center UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total UGA	3	0.34	8.82	0	0	0.00	4	0.43	9.30	0	0	0.00	0	0	0	0	0	0	7	0.77	9.09

Source: Clark County Department of Community Development, Long Range Planning

- City of La Center single family density is 4.69 dwelling units per acre; multi-family density is 9.09 dwelling units per acre.
- Unincorporated La Center UGA has a single family density of .17 dwelling units per acre.

Table 14. La Center Annual Commercial and Industrial Development 1995-2000

Commercial	1995		1996		1997		1998		1999		2000		1995-2000 Total	
	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres
City of La Center	0	0	1	0.11	1	1.79	0	0	0	0	0	0	2	1.9
Uninc. UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
La Center UGA	0	0	1	0.11	1	1.79	0	0	0	0	0	0	2	1.9
Industrial														
City of La Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uninc. UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Clark County Department of Community Development, Long Range Planning

Table 15. Ridgefield Annual Residential Development

	1995			1996			1997			1998			1999			2000			1995-2000			
	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	
Single Family																						
City of Ridgefield	45	17.6	2.56	9	3.26	2.76	9	2.25	4.00	14	4.53	3.09	2	6.61	0.30	7	2.52	2.78	86	36.77	2.34	
Uninc. UGA	1	13.59	0.07	1	2.35		3	84.17	0.04	1	2.46	0.41	1	3	0.33				7	105.57	0.07	
Total UGA	46	31.19	1.47	10	5.61	1.78	12	86.42	0.14	15	6.99	2.15	3	9.61	0.31	7	2.52	2.78	93	142.34	0.65	
Multi-Family																						
City of Ridgefield	32	4.83	6.63	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	32	4.83	6.63	
Uninc. UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0.00	0	0	0.00	
Total UGA	32	4.83	6.63	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	32	4.83	6.63	

Source: Clark County Department of Community Development, Long Range Planning

- City of Ridgefield single family density is 2.34 dwelling units per acre; multi-family is 6.63 dwelling units per acre.
- Unincorporated Ridgefield UGA has a single-family density of .07 dwelling units per acre.

Table 16. Ridgefield Annual Commercial and Industrial Development

	1995		1996		1997		1998		1999		2000		1995-2000 Total	
	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres
Commercial														
City of Ridgefield	0	0	0	0	0	0	1	1.61	0	0	0	0	1	1.61
Uninc. UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ridgefield UGA	0	0	0	0	0	0	1	1.61	0	0	0	0	1	1.61
Industrial														
City of Ridgefield	1	23.71	0	0	2	11.11	0	0	1	1.36	0	0	4	36.18
Uninc. UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total UGA	1	23.71	0	0	2	11.11	0	0	1	1.36	0	0	4	36.18

Source: Clark County Department of Community Development, Long Range Planning

Table 17. Vancouver Annual Residential Development

Single Family	1995			1996			1997			1998			1999			2000			Total 1995-2000		
	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	904	151.92	5.95	865	141.92	6.09	566	85.03	6.66	800	123.39	6.48	795	116.66	6.81	484	78.2	6.19	4414	697.12	6.33
Uninc. UGA	952	212.34	4.48	1185	269.26	4.4	1157	245.49	4.71	1299	223.29	5.82	1174	206.15	5.69	545	97.28	5.60	6312	1253.81	5.03
Total UGA	1856	364.26	5.10	2050	411.18	4.99	1723	330.52	5.21	2099	346.68	6.05	1969	322.81	6.10	1029	175.48	5.86	10726	1950.93	5.50
Multi-Family																					
City of Vancouver	893	43.89	20.35	576	15.46	37.26	952	63.75	14.93	805	46.1	17.46	701	35.86	19.55	447	26.87	16.64	4374	231.93	18.86
Uninc. UGA	86	7.77	11.07	328	27.83	11.79	83	14.09	5.89	219	19.69	11.12	128	9.16	13.97				844	78.54	10.75
Total UGA	979	51.66	18.95	904	43.29	20.88	1035	77.84	13.30	1024	65.79	15.56	829	45.02	18.41				5218	310.47	16.81

Source: Clark County Department of Community Development, Long Range Planning

- City of Vancouver single family density is 6.33 dwelling units per acre; multi-family is 18.86 dwelling units per acre.
- Unincorporated Vancouver UGA’s single family density is 5.03 dwelling units per acre; multi-family is 10.75 dwelling units per acre.

Table 18. Vancouver Annual Commercial and Industrial Development

Commercial	1995		1996		1997		1998		1999		2000		1995-2000 Total	
	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres
City of Vancouver	11	9.93	13	55.71	17	25.99	11	15.79	18	33.72	9	28.52	79	169.66
Uninc. Vancouver	10	23.26	16	20.83	12	11.31	7	21.84	16	20.01	38	122.22	99	219.47
Total UGA	21	33.19	29	76.54	29	37.3	18	37.63	34	53.73	47	150.74	178	389.13
Industrial														
City of Vancouver	6	18.48	8	45.76	9	34.04	9	253.97	7	50.77	6	76.03	45	479.05
Uninc. Vancouver	6	9.7	12	33.56	10	70.44	12	47.7	10	26.55	8	50.67	58	238.62
Total UGA	12	28.18	20	79.32	19	104.48	21	301.67	17	77.32	14	126.7	103	717.67

Source: Clark County Department of Community Development, Long Range Planning

Table 19. Washougal Annual Residential Development

	1995			1996			1997			1998			1999			2000			Total 1995-2000			
	Units	Acre	Units/Acre	Units	Acre	Units/Acre	Units	Acre	Units/Acre	Units	Acre	Units/Acre	Units	Acre	Units/Acre	Units	Acre	Units/Acre	Units	Acre	Units/Acre	
Single Family																						
City of Washougal	23	5.73	4.01	50	13.24	3.78	63	13.72	4.59	67	18.86	3.55	102	22.89	4.46	27	6.63	4.07	332	81.07	4.10	
Uninc. UGA	3	17.1	0.18	1	1.01	0.99	1	1.23	0.81	3	10.49	0.29	2	2.96	0.68	2	3.46	0.58	12	36.25	0.33	
Total UGA	26	22.83	1.14	51	14.25	3.58	64	14.95	4.28	70	29.35	2.39	104	25.85	4.02	29	10.09	2.87	344	117.32	2.93	
Multi-Family																						
City of Washougal	22	2	11.00	22	2.11	10.43	50	4.78	10.46	24	1	24	8	1.27	6.30				126	11.16	11.29	
Uninc. UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total UGA	22	2	11.00	22	2.11	10.43	50	4.78	10.46	24	1	24	8	1.27	6.30				126	11.16	11.29	

Source: Clark County Department of Community Development, Long Range Planning

Table 20. Washougal Commercial and Industrial Development

	1995		1996		1997		1998		1999		2000		1995-2000 Total	
	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres
Commercial														
City of Washougal	0	0	0	0	2	0.83	1	0.2	0	0	1	1.59	4	2.62
Uninc. UGA	0	0	0	0	0	0	0	0	1	15.09	0	0	1	15.09
Total UGA	0	0	0	0	2	0.83	1	0.2	1	15.09	1	1.59	5	17.71
Industrial														
City of Washougal	0	0	0	0	1	7.38	3	35.22	0	0	1	12.42	5	55.02
Uninc. UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total UGA	0	0	0	0	1	7.38	3	35.22	0	0	1	12.42	5	55.02

Source: Clark County Department of Community Development, Long Range Planning

Table 21.

Yacolt Annual Residential Development

	1995			1996			1997			1998			1999			2000			1995-2000			
	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	
Single Family																						
City of Yacolt	8	2.2	3.64	9	2.87	3.14	8	2.31	3.46	13	3.41	3.81	2	0.8	2.50	2	0.51	3.92	42	12.1	3.47	
Uninc.UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0.00	0	0	0.00	
Total UGA	8	2.2	3.64	9	2.87	3.14	8	2.31	3.46	13	3.41	3.81	2	0.8	2.50	2	0.51	3.92	42	12.1	3.47	
Multi- Family																						
City of Yacolt	0	0	0.00	2	0.3	6.67	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	2	0.3	6.67	
Uninc.UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0.00	0	0	0.00	
Total UGA	0	0	0.00	2	0.3	6.67	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	2	0.3	6.67	

Source: Clark County Department of Community Development, Long Range Planning

- City of Yacolt single family residential density is 3.47 dwelling units per acre; multi-family is 6.67 dwelling units per acre.

Table 22.

Yacolt Annual Commercial and Industrial Development

	1995		1996		1997		1998		1999		2000		1995-2000 Total	
	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres	Permits Issued	Acres
Commercial														
City of Yacolt	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uninc.UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industrial														
City of Yacolt	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uninc.UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total UGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Clark County Department of Community Development, Long Range Planning

Evaluation of Activity on Critical Lands

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. The critical land coverage was updated in the GIS Vacant Buildable Land model in December 2000 to be consistent with new state regulations issued by the Department of Natural Resources (DNR) and Local Habitat Ordinances. The new model will treat both kinds of critical areas as one, using the following assumption: If a parcel exceeds 50% critical it is not included in the vacant buildable land inventory. A parcel less than 50% critical is considered vacant or underutilized. A parcel that meets any of the following criteria is considered critical:

- 100 year floodplain or flood fringe
- high quality wetlands with 300 foot buffer
- slopes greater than 25 percent
- active or historically unstable slopes
- 200 foot shoreline buffers
- hydric soils with 50 foot buffer
- Habitat areas with 100 foot buffer
- Species area with 300 foot buffer
- Stream buffers by the Washington State Department of Natural Resource classification:
 - Class 1 & 2: 250 feet
 - Class 3: 200 feet
 - Class 4 & 5: 150 feet

Table 23. 1995-2000 Development on Critical Lands

UGA	All Single Family Development		Development on parcels with identified critical and % of all development on parcels with some critical			Development on parcels with > 50% critical land and % of all development on parcels with > 50% critical			Acres of Critical on parcels with > 50% Critical	Avg. Percent of Critical on developed parcels with critical > 50%
	Number	Acres	Number	Acres	% of Units	Number	Acres	% of Units		
Battle Ground	1,311	269.0	230	57.69	18%	109	31.41	8%	26.9	85.6%
Camas	1,316	374.1	272	122.97	21%	138	87.67	10%	76.37	87.1%
La Center	296	101.9	68	53.29	23%	41	37.02	14%	31.19	84.3%
Ridgefield	93	142.3	33	126.2	35%	21	28.04	23%	23.26	83.0%
Vancouver	10,726	1,950.9	563	237.38	5%	265	209.53	2%	121.07	57.8%
Washougal	344	117.3	137	38.62	40%	112	29.68	33%	28.29	95.3%
Yacolt	42	12.1	0	0	0%	0	0	0%	0	0.0%
Total UGA	14,128	2,967.7	1,303	636.15	9%	686	423.35	5%	307.08	73%

Source: Clark County Community Development, Department of Assessment and GIS

Observations

Between 1995 and 2000:

- 686 units were developed on parcels with greater than 50% critical land.
- 9 % of the number of developments occurred on parcels with some critical land.
- 5 % of the number of developments occurred on parcels with greater than 50% critical land.
- Washougal has seen 33% of its single family development occur on parcels with greater than 50% critical land area.

Site Plan Review

Site Plan Reviews (SPRs) submitted to Clark County for Multi-family, Commercial and Industrial developments from January 1, 1995 through June 30, 2000 were sampled to identify the percent of land devoted to infrastructure. There were a total of 444 SPRs collected during the study period. The majority of those were tenant improvements, public facilities (including schools), cell towers, and churches, which were all excluded. A sample of 100 SPR's was used consisting of only those site plans submitted to Clark County and not the individual jurisdictions.

In 1994, the planning assumption for infrastructure on commercial and industrial land was 25% and included only on-site infrastructure (public right-of-way, utility easements, etc.). For the purposes of this study infrastructure is defined as the difference between site acreage and building footprint. This definition implies that infrastructure includes land for parking. We expect that including parking as infrastructure will increase the percent of land needed to accommodate infrastructure. The results below indicate a significantly higher percentage of infrastructure than the 1994 planning assumptions.

Table 24. Summary of Site Plans Reviewed

	Commercial		Multi-Family		Industrial	
Sample Size	N=40		N=6		N=26	
	Required	Observed	Required	Observed	Required	Observed
Building Coverage	NA	13%	50% Max.	22%	50% Max.	13%
Landscape	15% Min.	15.60%	20% Min.		*20% Min.	18%
Minimum Lot Area	NA	Mean = 2.9 acres Median = 1.5 acres	4000 sq. ft.	Mean = 5.8 acres Median = 4.6 acres	**10000sq. Ft.	Mean = 4.41 acres Median = 4.6 acres
Density Min. & Max.	NA	NA	R-12, R-18, R-22, R-30, R-43. Min. density 8, 12, 15,18, 20	Mean = 9.34	NA	NA
Parking Ratio***	1	1.4	1	1.17	1	1.4
Infrastructure****		Mean = 71%		Mean = 42%		Mean = 55%

* Additional Landscape requirements may apply, particularly adjoining residential uses or zones.

** Business Park minimum is 6000 sq. ft.

***Parking Ratio is the ratio of parking spaces provided over parking spaces required.

**** For the purposes of this sample study infrastructure is defined as Site area minus building coverage and landscaping.

Observations

- The observed infrastructure for commercial (71%) and industrial (55%) exceeds the 25% planning assumption. (Note: The gross employment densities reported in Table 24 are not impacted by the percent of a parcel used for infrastructure)
- The study sample reveals the number of parking spaces provided exceeds the parking spaces required by 40% for both commercial and industrial uses.
- The observed infrastructure percentage can be largely attributed to the inclusion of parking in our definition of infrastructure.

Table 25. Summary of 1994 Comprehensive Plan Assumptions and Observations

	1994 Plan Assumptions	1995-2000 Observations
Population	The population projected for Clark County for 2012 is 416,071.	Clark County's 2000 population is at 345,000. The County's observed annualized rate of growth between 1995 and 2000 is 3.5 %. If the growth rate continues the County will reach the 2012 projected population prior to 2012.
Residential Density	The 1994 plan assumed a 60/40 housing split of single family/multi-family housing types with a density of 6 units per net acre for single family and 16 units per net acre for multi-family.	Clark County's Urban growth areas single family/multi-family split is at 72/28. Overall, Single family density in the UGA's was 4.8 units per net acre and multi-family was 15.8 units per net acre.
Persons per household	Persons per single family household was projected to be 2.33 and 1.8 for multi-family households.	The observed person per household is 2.6 for single family and 1.9 for multi-family.
Employment Density	Employment density was assumed to be 9 jobs/acre for industrial development and 12 jobs/acre for commercial development.	Employment Density is 10 jobs per gross acre for industrial development and 22 jobs per acre for commercial development.
Infrastructure-Residential	Residential infrastructure was assumed to be 25% for parcels between 20,000 sq. ft. and 1 acre; 30% for parcels between 1 and 2.5 acres; and 40% for parcels 2.5 acres or larger.	Residential infrastructure was reported in the July 2000 Plan Monitoring Report. The data indicate the average percentage dedicated to infrastructure is 27.5%, well within the assumptions outlined in the adopted comprehensive plan. The tier of parcel sizes in the 1994 assumptions provides a challenge in making like comparisons
Infrastructure-Commercial and Industrial	Commercial and Industrial infrastructure was assumed to be 25%.	The observed infrastructure for commercial and industrial is 71% and 55%, respectively. *

* Infrastructure for commercial and industrial is based on site plan reviews submitted to Clark County and not the cities within the county. The site plan review study used a definition of infrastructure that is inclusive of parking.

Table 26. Density of Lots Vested Prior to 1995

Unincorporated Vancouver UGA			
	# of Permits	Acres	Density: Units/ Acre
Lots =< 7400 sq. ft.	4308	615.8	7.1
Vested Prior to 1995	1285	464.9	2.8
Lots > 7400 sq. ft.	719	167.3	4.3
Total 1995-2000	6312	1253.8	5.0

Review of Development Experienced Between 1995 and 2000 and Plan Goal

The report provides information on growth experienced between 1995 and 2000 in the county and each of its cities, including; (a) single-family and multi-family development ; (b) density (units per acre) at which both single –family and multi-family development was 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 Vancouver, have not met the plan’s goal of 6 units per acre for single-family development and 16 units per acre for multi-family development. Further examination of density indicates that development of areas without urban services may be negatively influencing overall urban density. These factors include development proposals that vested under pre-GMA ordinances, little or no development in urban holding areas (land inside urban growth areas that require urban densities when it develops or are annexed), development on substandard legal lots of record, and other practices.

The county did meet the plan target of 16 dwelling units per acre for multi-family. However, the county fell short of the plan target for housing split of 60 percent single –family and 40 percent multi-family. The actual development trend is 72 percent single family and 28 percent multi-family. The result is much better for the Vancouver urban growth area which had a housing split of 66 percent single family and 33 percent multi-family.

Employment density revealed there are 22 employees per gross acre for commercial development and 10 employees per gross acre for industrial development. This is far greater than the planning assumptions of 12 employees per net acre for commercial and 9 employees for industrial.

There is also indication that development is occurring on critical lands. Preliminary data reveal that 9 percent of single family development occurred on parcels with some critical land and 5 percent of single family development occurred on parcels with greater than 50 percent critical land.

The data on the building permits issued in the unincorporated Vancouver UGA indicates that the plan density target of 6 dwelling units per acre for single family development was not met. From January 1995 to June 2000, a total of 6, 312 building permits were issued in the unincorporated portion of the Vancouver urban growth area. Approximately 4000 of these permits were on lots less than or equal to .17 acres or 7,400 sq. ft. These lot sizes equate to

approximately 6 dwelling units per acre. The remaining 2312 building permits were on lots greater than 7,400 square feet.

Of the 2,312 building permits 1,283 were found to be subdivisions that were vested prior to adoption of the County’s Comprehensive Plan. The density of those building permits is 2.8 units per acre. The density of the 719 remaining building permits issued was 4.3 dwelling units per acre. There were 208 building permits issued in the R1-10 zone that allows a density range of 2.9 to 4.4 dwelling units per acre. There were 212 building permits issued in the R1-7.5 zone that allows a density range of 4.1 to 5.8 dwelling units per acre. There were 278 building permits issued in the R1-6 zone that allows a density range of 5.1 to 7.3 dwelling units per acre. The actual density for the building permits issued in the R1-10 and R1-7.5 zones were within the ranges for each zone 4.0 and 4.6, respectively. However, the density for the building permits issued in the R1-6 zone fell below the allowed range at 4.4 dwelling units per acre. There are several possible explanations: (1) a pre-existing lot can be issued a building permit even though it doesn’t meet the zone requirements. (2) density calculations for a subdivision are based on lot size averages for each subdivision, when building permits are analyzed independent of the subdivision and combined with non-subdivision building permits, it’s possible to under or over estimate the average density.

Table 27. Analysis of Lots in Unincorporated Area by Zoning

Analysis of Lots >7400 Sq. Ft. by Zoning					
Zoning	# of Permits	Acres	Density: Units/ Acre	Min Density	Max. Density
R 1-5	5	2.6	1.9	6.2	8.7
R1-6	278	62.9	4.4	5.1	7.3
R1-7.5	212	45.7	4.6	4.1	5.8
R 1-10	208	52.1	4.0	2.9	4.4
R 18	5	1.9	2.6	12	18
ML	11	2.1	5.4	na	na
Total	719	167.2	4.3		

A review of development activity in the unincorporated Battle Ground, Camas, Ridgefield, Washougal, and La Center urban growth areas reveals that growth has not occurred significantly on land outside city limits. While some growth has been permitted on large lots which skewed overall density, a majority of land in the unincorporated areas outside these cities are in urban holdings which prevent premature development unless urban services are provided or requires annexation prior to development. With the exception of the Vancouver UGA, the urban areas outside of the other smaller cities do not have sewer provisions. Without sewer facilities development cannot occur at urban levels in which case, lot sizes would have to double to accommodate development on septic systems. Approximately 40 of the 60 building permits issued in the other unincorporated urban growth areas are on lot sizes that are between a half an acre and 5 acres.

The county met the plan target of 16 dwelling units per acre for multi-family. However, the county fell short of the plan target for housing split of 60 percent single family and 40 percent multi-family. The actual development trend is 72 percent single family and 28 percent multi-family. The result is much better for the Vancouver urban growth area which had a housing split of 67 percent single family and 33 percent multi-family. Further review of the housing split

indicates that multi-family development is not yet occurring in north county UGAs of Battle Ground, La Center and Ridgefield, where public facilities such as mass transit are inadequate, and may require an examination of the plan target.

Employment density revealed there are 22 employees per acre for commercial development and 10 employees per acre for industrial development. This is far greater than the planning assumptions of 12 employees per acre of commercial and 9 employees for industrial.

The observed persons per household are 2.6 for single family and 1.9 for multi-family. The plan assumption is 2.33 for single family and 1.8 for multi-family. It appears that household size and employment density should be revised as a result of the review and evaluation program. A larger than expected persons per household ratio could be one of the factors contributing to the scenario of higher than expected population growth accommodated on less acreage and at a lower density than planned for in 1994.

Reasonable Measures: Action Items

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. The following actions have been identified as revisions to local development regulations 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 - 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.

Buildable Lands Inventory and Needs Analysis

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 2012 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 three tables below indicate the amount of residential land needed to accommodate the projected 2012 population based on (1) the 1994 Comprehensive Growth Management Plan baseline assumptions; (2) the densities observed since 1995; and (3) new general density guidance selected by the Board of County Commissioners for updating the comprehensive plan. Each table provides the 2000 population, the population that needs to be accommodated by 2012, the single family and multi-family units and acres needed. The new density guideline is included here for comparison purposes.

The assumptions for each table are provided below.

1994 Baseline Assumptions for residential land:

60/40 single family-multifamily split

2.33 persons per household for single family

1.8 persons per household for multifamily

6 dwelling units per acre for single family

16 dwelling units per acre for multifamily

Table 28. 2012 Land Need Based on 1994 Comprehensive Plan Baseline Assumptions

	2000 Population	Remaining Population to be allocated by 2012	SF units needed	MF units needed	SF acres needed	MF acres needed	Total Residential Acres Needed	2000 Vacant and Buildable Land Inventory in Acres
UGA								
Battle Ground	10,046	5,566	1,577	1,051	262.8	65.7	328.5	564
Camas	12,260	9,490	2,688	1,792	448.1	112.0	560.1	403
La Center	1,900	844	239	159	39.8	10.0	49.8	119
Ridgefield	2,602	3,810	1,079	720	179.9	45.0	224.9	399
Vancouver	244,912	29,152	8,258	5,506	1,376.4	344.1	1,720.5	3,036
Washougal	10,344	7,608	2,155	1,437	359.2	89.8	449.0	484
Yacolt	1,118	313	89	59	14.8	3.7	18.5	4
Total	283,182	56,783	16,086	10,724	2,681.0	670.2	3,351.2	5,009

Source: Clark County Department of Community Development

Observations based on 1995-2000 Residential Growth:

Observed single family /multi-family split for each jurisdiction. (see pg. 19)

2.6 persons per household for single family

1.9 persons per household for multi-family.

Observed single family (see pg. 6) and multi-family (see pg. 17) density for each jurisdiction.

Table 29. 2012 Land Need Based on Observed Density

UGA	2000 Population	Remaining Population to be allocated by 2012	SF units needed	MF units needed	SF acres needed	MF acres needed	Total Residential Acres Needed	2000 Vacant and Buildable Land Inventory in Acres
Battle Ground	10,046	5,566	1,577	1,051	262.8	65.7	328.5	564
Camas	12,260	9,490	2,688	1,792	448.1	112.0	560.1	403
La Center	1,900	844	239	159	39.8	10.0	49.8	119
Ridgefield	2,602	3,810	1,079	720	179.9	45.0	224.9	399
Vancouver	244,912	29,152	8,258	5,506	1,376.4	344.1	1,720.5	3,036
Washougal	10,344	7,608	2,155	1,437	359.2	89.8	449.0	484
Yacolt	1,118	313	89	59	14.8	3.7	18.5	4
Total	283,182	56,783	16,086	10,724	2,681.0	670.2	3,351.2	5,009

Source: ClarkCounty Department of Community Development

* The extremely low density in the Ridgefield UGA accounts for 35% of the acres needed yet the population to be allocated in the Ridgefield UGA is only 7% of the county total. The City of Ridgefield has approved subdivisions at higher densities, but due to lack of sewer, building permits have not been issued.

Assumptions based on new density guidelines:

Housing split of 75% single family and 25% multi-family.

Persons per household of 2.6 for single family and 1.9 multi-family.

Overall density of:

4 units per acre for La Center.

6 units per acre for Battle Ground, Camas, Ridgefield and Washougal.

8 units per acre for Vancouver.

Table 30. 2012 Land Need Based on New Density Guidelines

UGA	2000 Population	2012 Population to be allocated	SF units needed	MF units needed	SF Acres needed	MF Acres needed	Total Residential Acres Needed	2000 Vacant and Buildable Land Inventory in Acres
Battle Ground	10,046	5,566	1,721	574			382.5	564
Camas	12,260	9,490	2,935	978			652.2	403
La Center	1,900	844	261	87			87.0	119
Ridgefield	2,602	3,810	1,178	393			261.9	399
Vancouver	244,912	29,152	7,539	5,026			1,570.7	3,036
Washougal	10,344	7,608	2,353	784			522.9	484
Yacolt	1,118	313	97	32			32.3	4
Totals	283,182	56,783	17,562	5,854			3,509.5	5,009

Source: Clark County Department of Community Development

Observations

- Based on the 1994 planning assumptions the amount of land needed to accommodate the projected 2012 population is 3,351 acres.
- Based on the observed growth and density since 1995 the land needed to accommodate the projected 2012 population is 6,414 acres.
- Based on the new policy direction the amount of land needed to accommodate the projected 2012 population is 3,968 acres.

Commercial and Industrial Needs Analysis

The 1994 Comprehensive Plan assumed an employment density of 12 jobs/acre for commercial development and 9 jobs/acre for industrial development. The employment forecast for the 20-year planning period is 58,100 new jobs by 2012. Since 1994 13,000 new jobs have been added countywide which leaves 45,100 jobs yet to be allocated. The 1994 Comprehensive Plan assumes a split of 47/38/15 for commercial, industrial and public sector employment (no land was allocated for public sector employment). The number of commercial and industrial jobs that remain to be allocated by 2012 are 27,060 and 10,373 respectively.

Based on the 1994 Comprehensive Plan assumptions of 12 jobs/acre for commercial development and 9 jobs/acre for industrial development 2,255 acres are needed for commercial employment and 1,153 acres are needed for industrial employment. There is commercial and industrial land available to accommodate growth to 2012 based on the 2000 Vacant and Buildable Lands Inventory.

Based on the 1995-2000 observed employment density of 22 jobs/acre for commercial development and 10 jobs/acre for industrial development, 1,230 acres are needed for commercial employment and 1,037 acres are needed for industrial employment.

The exact amount of additional land needed to accommodate growth for the next 20-year planning horizon will be estimated as part of the 10-year plan update. The demand will be based on the current capacity within each of the UGA's. Any adjustment that needs to be made, if any, may include, but is not limited to, adding acreage to UGA's to accommodate anticipated growth.

Buildable Lands Capacity Analysis

The table below provides the vacant and buildable lands per urban growth area in the residential, commercial and industrial areas based on the year 2000 Vacant Buildable Lands Model. Based on the assumptions below the data indicate that countywide there are 5,010 net buildable residential acres with a capacity of 96,425 residents; 1,169 net buildable commercial acres with an employment capacity of 14,026 and 3,889 net buildable industrial acres with an employment capacity of 29,320.

Table 31. UGA Capacity Analysis 2000

Year 2000 VBL Model UGA Capacity Analysis with development or Critical and Redevelopment Factor																								
Residential	Baffle Ground			Cannons			Lo Coates			Ridgefield			Vacuumers			Washburn			Facets			Total		
	UGA	City	Total	UGA	City	Total	UGA	City	Total	UGA	City	Total	UGA	City	Total	UGA	City	Total	UGA	City	Total			
Green Acres	281	229	510	28	466	494	26	161	187	12	276	288	1657	944	2600	126	478	604	0	7	7	2040	2712	4752
Undeveloped	207	809	1016	18	290	308	96	16	112	0	343	423	2003	605	2307	148	206	345	0	0	0	3200	1826	4926
Critical exclusion	524	343	867	44	139	183	83	16	106	0	760	848	1779	528	2807	172	487	659	0	81	89	2696	3303	6000
Tax Exempt exclusion	5	36	41	3	90	93	0	5	5	0	8	8	213	258	1804	0	82	82	0	2	2	120	311	431
Total	1146	857	2003	78	672	1172	215	137	352	156	1555	1665	4706	2005	8716	438	1109	1646	0	30	30	9154	6124	15278
Green Acres less tax exempt & CRF & SR	311	339	650	28	495	523	26	161	187	12	276	288	1657	944	2600	126	474	600	0	7	7	2430	2712	5142
Undeveloped	207	809	1016	18	290	308	96	16	112	0	343	423	2003	605	2307	148	206	345	0	0	0	3200	1826	4926
Critical exclusion	524	343	867	44	139	183	83	16	106	0	760	848	1779	528	2807	172	487	659	0	81	89	2696	3303	6000
Tax Exempt exclusion	5	36	41	3	90	93	0	5	5	0	8	8	213	258	1804	0	82	82	0	2	2	120	311	431
Total	627	508	1135	48	745	796	122	117	250	92	719	813	4659	1968	6767	265	800	945	0	7	7	5751	4041	9792
Green Acres less tax exempt & CRF & SR	288	306	594	26	459	484	22	91	118	11	227	248	1743	907	2610	113	426	539	0	6	6	2196	2441	4637
Undeveloped	228	118	346	13	200	213	87	11	70	36	240	296	1864	423	2287	96	144	240	0	0	0	2305	1140	3445
Critical exclusion	487	423	910	37	812	849	90	102	192	0	577	644	3607	1290	4897	211	570	781	0	6	6	4489	2861	7350
Tax Exempt exclusion	5	36	41	3	90	93	0	5	5	0	8	8	213	258	1804	0	82	82	0	2	2	120	311	431
Total	302	362	664	23	300	323	80	83	118	42	350	399	2236	800	3036	131	354	404	0	4	4	1300	1514	2814
Green Acres less tax exempt & CRF & SR	173	909	1082	15	254	269	14	56	71	7	200	216	1001	538	1618	70	264	334	0	4	4	1300	1514	2814
Undeveloped	128	73	201	8	126	134	42	7	40	36	149	194	1398	262	1438	81	89	170	0	0	0	1420	707	2127
Critical exclusion	302	362	664	23	300	323	80	83	118	42	350	399	2236	800	3036	131	354	404	0	4	4	1300	1514	2814
Tax Exempt exclusion	5	36	41	3	90	93	0	5	5	0	8	8	213	258	1804	0	82	82	0	2	2	120	311	431
Total	427	423	850	37	812	849	90	102	192	0	577	644	3607	1290	4897	211	570	781	0	6	6	4489	2861	7350
Green Acres less tax exempt & CRF & SR	173	909	1082	15	254	269	14	56	71	7	200	216	1001	538	1618	70	264	334	0	4	4	1300	1514	2814
Undeveloped	128	73	201	8	126	134	42	7	40	36	149	194	1398	262	1438	81	89	170	0	0	0	1420	707	2127
Critical exclusion	302	362	664	23	300	323	80	83	118	42	350	399	2236	800	3036	131	354	404	0	4	4	1300	1514	2814
Tax Exempt exclusion	5	36	41	3	90	93	0	5	5	0	8	8	213	258	1804	0	82	82	0	2	2	120	311	431
Total	302	362	664	23	300	323	80	83	118	42	350	399	2236	800	3036	131	354	404	0	4	4	1300	1514	2814
Capacity in UGA's	1613	1674	3287	139	2277	2417	228	263	491	249	2147	2367	17849	8401	26250	763	2102	2865	0	16	16	21800	14708	36508
CR Development on Critical	1938	1666	3604	147	2387	2534	236	266	502	262	2343	2605	18807	8727	26634	826	2233	3059	0	16	16	22000	15668	37668
Total Capacity	3551	3340	6891	286	4664	4951	464	529	993	517	4490	4972	36656	17128	52884	1589	4335	5924	0	32	32	43800	30376	74176
Capacity as % of total net acres	6.1%	4.4%	8.4%	0.4%	6.7%	5.7%	0.6%	0.7%	1.3%	0.1%	6.0%	6.7%	48.0%	11.8%	60.7%	1.2%	5.8%	8.1%	0.0%	0.6%	0.6%	58.8%	41.2%	180.0%
Capacity with redevelopment factor applied to net capacity	4029	4029	8058	324	6118	6442	332	380	712	378	3446	3824	48848	27180	76028	2105	5701	7806	0	30	30	46800	30376	77176

Year 2000 VBL Plan UGA Capacity Analysis																								
Commercial	Baffle Ground			Cannons			Lo Coates			Ridgefield			Vacuumers			Washburn			Facets			Total		
	UGA	City	Total	UGA	City	Total	UGA	City	Total	UGA	City	Total	UGA	City	Total	UGA	City	Total	UGA	City	Total			
Green Acres	14	70	84	0	27	27	0	18	18	0	162	162	744	422	1166	0	42	42	0	0	0	760	767	1527
Undeveloped	0	4	4	0	1	1	0	0	0	0	0	0	0	35	11	46	0	0	0	0	0	35	35	39
Critical exclusion	13	128	141	0	26	26	0	9	9	0	126	126	709	327	1079	0	13	13	0	0	0	725	760	1485
Tax Exempt exclusion	1	7	8	0	18	18	0	4	4	4	24	28	99	81	161	0	14	14	0	0	0	144	158	206
Total	27	211	238	0	52	52	0	31	31	4	311	316	1500	640	1541	0	56	56	0	0	0	1232	1405	2637
Green Acres less tax exempt & CRF & SR	14	70	84	0	27	27	0	18	18	0	162	162	744	422	1166	0	42	42	0	0	0	760	767	1527
Undeveloped	0	4	4	0	1	1	0	0	0	0	0	0	0	35	11	46	0	0	0	0	0	35	35	39
Critical exclusion	13	128	141	0	26	26	0	9	9	0	126	126	709	327	1079	0	13	13	0	0	0	725	760	1485
Tax Exempt exclusion	1	7	8	0	18	18	0	4	4	4	24	28	99	81	161	0	14	14	0	0	0	144	158	206
Total	27	211	238	0	52	52	0	31	31	4	311	316	1500	640	1541	0	56	56	0	0	0	1232	1405	2637
Green Acres less tax exempt & CRF & SR	14	70	84	0	27	27	0	18	18	0	162	162	744	422	1166	0	42	42	0	0	0	760	767	1527
Undeveloped	0	4	4	0	1	1	0	0	0	0	0	0	0	35	11	46	0	0	0	0	0	35	35	39
Critical exclusion	13	128	141	0	26	26	0	9	9	0	126	126	709	327	1079	0	13	13	0	0	0	725	760	1485
Tax Exempt exclusion	1	7	8	0	18	18	0	4	4	4	24	28	99	81	161	0	14	14	0	0	0	144	158	206
Total	27	211	238	0	52	52	0	31	31	4	311	316	1500	640	1541	0	56	56	0	0	0	1232	1405	2637
Green Acres less tax exempt & CRF & SR	14	70	84	0	27	27	0	18	18	0	162	162	744	422	1166	0	42	42	0	0	0	760	767	1527
Undeveloped	0	4	4	0	1	1	0	0	0	0	0	0	0	35	11	46	0	0	0	0	0	35	35	39
Critical exclusion	13	128	141	0	26	26	0	9	9	0	126	126	709	327	1079	0	13	13	0	0	0	725	760	1485

Assumptions used in capacity analysis for Residential :

Housing split of 75% single family and 25% multi-family.

Persons per household of 2.6 for single family and 1.9 multi-family.

Overall density of:

4 units per acre for La Center and Yacolt.

6 units per acre for Battle Ground, Camas, Ridgefield and Washougal.

8 units per acre for Vancouver.

38% infrastructure deduction

10% never to convert factor

30% underutilized factor

5% development factor on critical land

5% redevelopment factor

Assumptions used in capacity analysis for Commercial:

25% infrastructure deduction

12 employees per acre for commercial

Excludes tax exempt and critical land >50%

Assumptions used in capacity analysis for Industrial :

9 employees per acre for industrial

25% infrastructure deduction

Excludes tax-exempt (except port)

Observations

- Based on the current inventory of vacant and buildable land there are 4,719 net buildable acres. At 6 dwelling units per acre and 2.33 persons per household this area will accommodate 65, 122 persons. Combined with the capacity in the rural area there is sufficient capacity to accommodate the projected 2012 population.
- Based on the current inventory of vacant and buildable land there are 1,131 net buildable commercial acres and 3,960 net buildable industrial acres.
- The preliminary analysis of current land inventory indicates there is sufficient land within the existing UGA to accommodate the 2012 population.
- Given the underlying zoning, the total vacant and development potential in the rural area is approximately 13,577 lots. Assuming 2.6 persons per household, there is capacity to add 35,300 persons in the rural areas.

The data collected for this report is available online at www.clark.wa.gov/ComDev/LongRange/Default.asp or via CD-Rom from the Department of Community Development.