

# APPENDIX A



Land Capacity Analysis Methods  
Unincorporated Kitsap County  
City of Bainbridge Island  
City of Bremerton  
City of Poulsbo



## Kitsap County Residential Land Capacity Analysis

Land Capacity is an estimate of the amount of development that land can accommodate given land use regulations and local development conditions or circumstances. The Land Capacity Analysis (LCA) was developed as a means to help us understand where future development might occur and whether our zoning allow for the development capacity need to accommodate the projected household and job growth.

### Urban Land Capacity Analysis

The Urban Land Capacity Analysis is developed through a series of steps of analysis to derive the development capacity estimates utilizing Kitsap County’s Geographic Information System (GIS). This report explains some of the processes used to determine the land supply capacity.

#### DEFINE PARCEL DATASET

In order to create the feature that will be used for analysis information the information from the Kitsap County Assessor attribute table is joined to the Parcel polygon feature.

**Join attributes from table GIS.RP\_ACCTS\_PARCELS based on join field RP\_ACCT\_ID**

Parcel information that will be used for LCA from the attribute table contains the following data:

Field Name	Name	Description
RP_ACCT_ID	Real Property Account Identification Number	Real Property Account Identification Number
ACCT_NO	Assessor Account Number	Assessor Account Number
TAX_STATUS	Taxable Status	Taxable or Senior Citizen Exempt
LIS_ACRES	Land Information System Acres	Acres listed in Assessor records
POLY_ACRES	Polygon Acres	Calculated acres created by polygon shape
ZONE_CODE	Zone Code	Zoning abbreviation assigned to the parcel
PROP_CLASS	Property Class Code	Assigned code for current property use
PUB_OWNED	Public Owned	Y or N
NUM_DWELL	Number of Dwelling Units	Number of Dwelling Units
NUM_COMM	Number of Commercial Buildings	Number of Commercial Buildings
NUM_OTHER	Number of other buildings	Non-dwelling
YEAR_BUILT	Year Built	Year the assessed structure was built
BLDG_VALUE	Building Value	Assessed Value of the building
LAND_VALUE	Land Value	Assessed Value of the land
TOTAL_VALUE	Total Value	Total assessed value of the building and land



### ASSESSOR PROPERTY CLASS CODE

The Kitsap County Assessor property class codes are used to represent the current land use of real property. Real property includes land, improvements to land, structures, and certain equipment affixed to structures. For the purpose of LCA, this information is used in establishing current and future housing and development capacity.

The property class codes are shown in the following table. The column for LCA is used to determine the current land category as it applies to the analysis. The column for the Results for LCA is used to describe the first analysis of the parcel data. Some Assessor property class codes will determine whether a parcel will be removed from further analysis, or whether a parcel will need further analysis. For the purpose of residential land analysis, all existing commercial/industrial developments that exist in residential zones will be considered developed. The Commercial LCA Query will only apply to commercial/industrial developments that exist in the commercial/industrial zones.

#### RESIDENTIAL

Class Code	Description	Category for LCA	Results for LCA
111	Single Family residence	Residential	<i>Residential LCA Query</i>
118	Mobile Home - leased land	Residential	<i>Residential LCA Query</i>
119	Mobile Home - real property	Residential	<i>Residential LCA Query</i>
180	Other residential	Residential	<i>Residential LCA Query</i>
183	Sheds/Garage	Residential	<i>Residential LCA Query</i>
198	Cabin	Residential	<i>Residential LCA Query</i>
160	Hotel/Motel	Residential	Developed
161	Bed and Breakfast Lodging	Residential	Developed
170	Institutional Lodging	Residential	Developed

#### MULTI-FAMILY

Class Code	Description	Category for LCA	Results for LCA
121	Duplex	Multi - Family	Developed
122	Triplex	Multi - Family	Developed
123	Four units	Multi - Family	Developed
131	5-9 units	Multi - Family	Developed
132	10-14 units	Multi - Family	Developed
133	15-19 units	Multi - Family	Developed
134	20-29 units	Multi - Family	Developed
135	30-39 units	Multi - Family	Developed
136	40-49 units	Multi - Family	Developed
137	50+ units	Multi - Family	Developed
138	Retirements apartments	Multi - Family	Developed
141	Condominium	Multi - Family	Developed
150	Mobile Home park	Multi - Family	Developed



**MANUFACTURING**

<b>Class Code</b>	<b>Description</b>	<b>Category for LCA</b>	<b>Results for LCA</b>
210	Food Product manufacturing	Industrial	<i>Commercial LCA query</i>
230	Apparel/Fabric manufacturing	Industrial	<i>Commercial LCA query</i>
240	Wood Product manufacturing	Industrial	<i>Commercial LCA query</i>
250	Furniture & Fixtures manufacturing	Industrial	<i>Commercial LCA query</i>
270	Printing & Publishing	Industrial	<i>Commercial LCA query</i>
320	Clay & Glass products	Industrial	<i>Commercial LCA query</i>
340	Fabricated Metal products	Industrial	<i>Commercial LCA query</i>
390	Miscellaneous manufacturing	Industrial	<i>Commercial LCA query</i>

**TRANSPORTATION, COMMUNICATION AND UTILITIES**

<b>Class Code</b>	<b>Description</b>	<b>Category for LCA</b>	<b>Results for LCA</b>
410	Railroads	Utilities/Transportation	Exempt
420	Motor Vehicle Transport	Utilities/Transportation	Exempt
430	Aircraft Transport	Utilities/Transportation	Exempt
440	Marine Transport	Utilities/Transportation	Exempt
459	Totally esmt encumbered	Utilities/Transportation	Exempt
460	Parking	Utilities/Transportation	Exempt
470	Communications	Utilities/Transportation	Exempt
480	Utilities	Utilities/Transportation	Exempt
483	Water Systems	Utilities/Transportation	Exempt
486	Stormwater retention	Utilities/Transportation	Exempt
489	State-assessed Utilities	Utilities/Transportation	Exempt
490	Other Utilities	Utilities/Transportation	Exempt



**TRADE**

<b>Class Code</b>	<b>Description</b>	<b>Category for LCA</b>	<b>Results for LCA</b>
500	Condominium, Retail/Office/Marine	Commercial	Exempt
510	Wholesale Trade	Commercial	<i>Commercial LCA query</i>
520	Retail - Building Material	Commercial	<i>Commercial LCA query</i>
530	Retail - General	Commercial	<i>Commercial LCA query</i>
540	Retail - Food	Commercial	<i>Commercial LCA query</i>
541	Convenience Stores with gas pumps	Commercial	<i>Commercial LCA query</i>
543	Convenience Stores without gas pumps	Commercial	<i>Commercial LCA query</i>
545	Chain type grocery	Commercial	<i>Commercial LCA query</i>
550	Retail - Automotive	Commercial	<i>Commercial LCA query</i>
551	Manufactured Housing Sales Lot	Commercial	<i>Commercial LCA query</i>
559	Auto Wrecking Yard	Commercial	<i>Commercial LCA query</i>
560	Retail - Apparel	Commercial	<i>Commercial LCA query</i>
570	Retail - Home Furnishing	Commercial	<i>Commercial LCA query</i>
580	Retail - Eating	Commercial	<i>Commercial LCA query</i>
580	Restaurants	Commercial	<i>Commercial LCA query</i>
581	Fast Food	Commercial	<i>Commercial LCA query</i>
582	Tavern	Commercial	<i>Commercial LCA query</i>
590	Other Retail Trade	Commercial	<i>Commercial LCA query</i>
591	Neighborhood Center	Commercial	<i>Commercial LCA query</i>
592	Community Center	Commercial	<i>Commercial LCA query</i>
593	Regional Center	Commercial	<i>Commercial LCA query</i>

**SERVICES**

<b>Class Code</b>	<b>Description</b>	<b>Category for LCA</b>	<b>Results for LCA</b>
610	Finance, insurance, etc.	Commercial	<i>Commercial LCA query</i>
611	Banks	Commercial	<i>Commercial LCA query</i>
620	Personal services	Commercial	<i>Commercial LCA query</i>
624	Cemeteries	Cemetery	Exempt
630	Business services	Commercial	<i>Commercial LCA query</i>
637	General warehouse	Industrial	<i>Commercial LCA query</i>
638	Mini-warehouse	Industrial	<i>Commercial LCA query</i>
640	Repair services	Commercial	<i>Commercial LCA query</i>
641	Service Station	Commercial	<i>Commercial LCA query</i>
650	Professional service	Commercial	<i>Commercial LCA query</i>
651	Medical/Dental office	Commercial	<i>Commercial LCA query</i>
653	Hospitals	Hospital	Exempt
656	Convalescent center	Institutional	Exempt
660	Construction service	Commercial	<i>Commercial LCA query</i>
670	Governmental service	Government	Governmental Service
680	Educational service	School	Governmental Service
690	Miscellaneous service	Commercial	<i>Commercial LCA query</i>
691	Church	Church	Exempt



**CULTURAL, ENTERTAINMENT AND RECREATION**

Class Code	Description	Category for LCA	Results for LCA
710	Cultural activities	Parks/Recreation	Exempt
720	Public assembly	Parks/Recreation	Exempt
730	Amusement	Parks/Recreation	Exempt
740	Recreational	Parks/Recreation	Exempt
744	Marina	Parks/Recreation	Exempt
750	Resort/Group Camp	Parks/Recreation	Exempt
760	Parks	Parks/Recreation	Exempt
790	Other Recreation	Parks/Recreation	Exempt

**RESOURCE PRODUCTION AND EXTRACTION**

Class Code	Description	Category for LCA	Results for LCA
810	Agriculture (not open space)		<i>Residential LCA Query</i>
820	Agriculture related		<i>Residential LCA Query</i>
822	Veterinarian service		<i>Commercial LCA query</i>
830	Open Space Agriculture (RCW 84.34)	Current Use/Common Area	Exempt
840	Fishing & Related service	Current Use/Common Area	Exempt
850	Mining & Related service	Current Use/Common Area	Exempt
880	Designated Forest Land (RCW 84.34)	Current Use/Common Area	Exempt
890	Resource Production		<i>Rural Lands query</i>

**UNDEVELOPED LAND AND WATER AREAS**

Class Code	Description	Category for LCA	Results for LCA
910	Undeveloped Land	Vacant Land	Vacant Land
911	Common Area	Current Use/Common Area	Exempt
920	Non-Commercial Forest	Vacant Land	Vacant Land
930	Water area	Water	Exempt
939	Tidelands	Tidelands	Exempt
940	Current Use Open Space (RCW 84.34)	Current Use/Common Area	Exempt
950	Current Use Timber (RCW 84.34)	Current Use/Common Area	Exempt
990	Other Undeveloped land	Vacant Land	Vacant Land



### EXEMPT PARCELS

These parcels are not considered for redevelopment by their current property class code and are described in the table as “Exempt”. These parcels include:

- Utility parcels
- Transportation parcels
- Marinas
- Cemeteries
- Hospitals (including institutional facilities)
- Governmental Services
- Schools
- Churches
- Cultural, Entertainment and Parks/Recreation
- Tidelands and water area
- Current Use exempt parcels (RCW 84.34)
- Commercial/Industrial use on residential zoned parcel

**SELECT FROM GIS.PARCEL\_POLY WHERE [PROP\_CLASS] >= '210' AND [ULCA\_RESULTS] IS NULL**  
**FIELD CALCULATION IN ULCA\_RESULTS: "EXEMPT"**

### MULTI-FAMILY

Parcels that have multi-family residential structures are also not considered for redevelopment potential as most multi-family structures have already utilized its maximum density for its zone and existing trends during the planning period do not support these structures being replaced with high density development.

**SELECT FROM GIS.PARCEL\_POLY WHERE ([PROP\_CLASS] >= '121' OR [PROP\_CLASS] <= '170') AND ULCA\_RESULTS IS NULL**  
**FIELD CALCULATION IN ULCA\_RESULTS: "MULTI-FAMILY"**

### VACANT LAND

Parcels that are currently undeveloped land based on their current property class code are classified in the results for LCA as “Vacant Land”. There is no minimum lot size exclusion applied to vacant lands.

**SELECT FROM GIS.PARCEL\_POLY WHERE ([PROP\_CLASS] = '910' OR [PROP\_CLASS] = '990') AND ULCA\_RESULTS IS NULL**  
**FIELD CALCULATION IN ULCA\_RESULTS: "VACANT LAND"**

### PARCELS LESS THAN .50 ACRES

For the purpose of this analysis, all potential underutilized parcels that are less than .50 acres are removed from the underutilized land supply.

**SELECT FROM GIS.PARCEL\_POLY WHERE [POLY\_ACRES] <= .50**  
**FIELD CALCULATIONS IN ULCA\_RESULTS: "LESS THAN .50AC"**

### SHORELINE PARCELS LESS THAN 1.00 ACRES

This step removes all underutilized shoreline parcels that are less than 1.00 acre. This allows the exclusion of smaller underutilized shoreline parcels since the County’s residential developed shorelines are almost exclusively platted and the potential for redevelopment (where density increase was potential) was negated by the high land and improvement values.

**SELECT FROM GIS.PARCEL\_POLY WHERE [GEO] = '3' AND [POLY\_ACRES] <= 1.00**  
**FIELD CALCULATION IN ULCA\_RESULTS: "SHORELINE <1.00AC"**



### CALCULATE MEDIAN HOME VALUE

Median homes values along with the size of parcel assists in determining which existing residential parcels are likely to redevelop. Factoring in a home value seeks to differentiate between all underutilized lands and those lands with the most potential to redevelop during the planning period.

MEDIAN HOME VALUE IS ONLY CALCULATED USING SINGLE FAMILY RESIDENCES THAT ARE ZONED RESIDENTIAL. MOBILE HOME VALUES ARE NOT INCLUDED IN THIS METHOD.

UNINCORPORATED URBAN GROWTH AREA	MEDIAN HOME VALUE	DENSITY >= 2.5X – 4X VALUE (/2)	DENSITY >= 4X – 5X VALUE (=)	DENSITY >= 5X – 10X VALUE (X1.5)
Port Orchard UGA	\$120,875	\$60,437	\$120,875	\$181,312
Bremerton East UGA	\$128,322	\$64,161	\$128,322	\$192,483
Bremerton West UGA	\$109,094	\$54,547	\$109,094	\$163,641
Central Kitsap UGA	\$143,497	\$71,748	\$143,497	\$215,245
Silverdale UGA	\$159,712	\$79,856	\$159,712	\$239,568
Kingston UGA	\$156,261	\$78,130	\$156,261	\$234,391
Gorst UGA	\$80,738	\$40,369	\$80,738	\$121,107

### CALCULATE DENSITY BY ZONE

Density is calculated by utilizing the dwelling units per acres by zone. The following chart shows each calculation used for each urban zone. The calculation then excludes any existing dwelling unit on the parcel. The purpose is to establish whether a parcel has the necessary 'zoning size' to accommodate at least one addition unit.

ZONING	DWELLING UNITS PER ACRES	DWELLING UNITS PER ACRE DENSITY	CALCULATION
URBAN LOW RESIDENTIAL	5 – 9 DU/AC	6 DU/AC	.16
URBAN MEDIUM RESIDENTIAL	10 – 19 DU/AC	12 DU/AC	0.08
URBAN HIGH RESIDENTIAL	19 – 30 DU/AC	21.75 DU/AC	0.05
URBAN RESTRICTED	1 – 5 DU/AC	2.5 DU/AC	0.40
URBAN CLUSTER RESIDENTIAL	5 – 9 DU/AC	7.6 DU/AC	0.13
MIXED USE	10 – 30 DU/AC	15 DU/AC	0.06
ILLAHEE GREENBELT ZONE	1 – 4 DU/AC	2 DU/AC	0.50
URBAN VILLAGE CENTER	Up to 18 DU/AC	12 DU/AC	0.08
SENIOR LIVING HOMESTEAD	5 – 9 DU/AC	6 DU/AC	.16



## REDEVELOPMENT POTENTIAL

This method utilizes the calculated zoning density and compares the density with the median home value.

Redevelopment potential is assumed to not exist if the parcel is less than 2.5X (times) the zoning density.

```
SELECT FROM GIS.PARCEL_POLY WHERE [DENSITY] <= 2.5  
ULCA_RESULTS = 'LESS THAN 2.5X'
```

Redevelopment potential is assumed to not exist if the parcel is 2.5–4X zoning density and the building value is greater than ½ of the median value.

```
SELECT FROM GIS.PARCEL_POLY WHERE [DENSITY] > 2.5 AND [DENSITY] <= 4.00 AND [BLDG_VALUE] > "1/2 MEDIAN VALUE"  
ULCA_RESULTS = 'DENSITY 2.5-4X'
```

Redevelopment potential is assumed to not exist if the parcel is 4–5X zoning density and the building value is greater than the median value.

```
SELECT FROM GIS.PARCEL_POLY WHERE [DENSITY] > 4.00 AND [DENSITY] <= 5.00 AND [BLDG_VALUE] > "MEDIAN VALUE"  
ULCA_RESULTS = 'DENSITY 4-5X'
```

Redevelopment potential is assumed to not exist if the parcel is 5–10X zoning density and the building value is greater than 1.5x the median value.

```
SELECT FROM GIS.PARCEL_POLY WHERE [DENSITY] > 5.00 AND [DENSITY] <= 10.00 AND [BLDG_VALUE] > "1.5x MEDIAN VALUE"  
ULCA_RESULTS = 'DENSITY 5-10X'
```

Redevelopment potential is assumed if the parcel is greater 10X zoning density regardless of the building value.

```
SELECT FROM GIS.PARCEL_POLY WHERE [DENSITY] > 10  
ULCA_RESULTS = 'UNDERUTILIZED'
```

## PLATTED LOTS (-)

All platted lots are identified and their acres are removed from the vacant and underutilized land supply prior to the critical areas reduction. Platted lots are identified by Assessor tax account number with the following query:

```
SELECT FROM GIS.PARCEL_POLY WHERE [ACCT_NO] >= '37**_***_***_****'
```



## CRITICAL AREAS

A mosaic is created for use in determining critical areas boundaries, including buffers and required setbacks. The currently adopted Critical Areas Ordinance is used to determine critical area coverage and development limitations. Once identified, a mosaic feature is created and then intersected over the existing vacant and underutilized land supply. This intersect allows identification of the critical area for each parcel and the identified area is then reduced by the LCA reduction factors.

The following is the geo processing functions used to create the mosaic:

- Buffer
- Clip
- Intersect
- Merge
- Dissolve

The LCA assumes a 75% reduction for ‘critical areas’ and a 50% reduction for ‘Areas of Moderate Geologic Hazard’ (formerly ‘Areas of Concern’). The buffers and critical areas description are shown in the table:

STREAMS					
TYPE	TYPE DESCRIPTION	BUFFER WIDTH	MINIMUM BUILDING SETBACK	% of reduction	COMMENT
DNR Watercourses	<p><b>S</b></p> <p>All waters, within their bankfull width, as inventoried as “shoreline of the state” under chapter 90.58 RCW</p> <p><i>(Segments of Big Beef Creek, Curley Creek, Chico Creek, Burley Creek, Union River, Blackjack Creek and Tahuya River)</i></p>	200 feet	15 feet beyond buffer	75%	WCHYDRO contains watercourses represented as arcs or lines. These occur alone as single arc watercourses representing streams, ditches, or pipelines, or as centerlines through water body polygons such as double-banked streams, lakes, impoundments, reservoirs, wet areas, or glaciers.
	<p><b>F</b></p> <p>Segments of natural waters other than Type S Waters, which are within the bankfull widths of defined channels and periodically inundated areas of their associated wetlands or within lakes, ponds or impoundments having a surface area of 0.5 acre or greater at seasonal low water and which in any case contain fish habitat</p>	150 feet	15 feet beyond buffer		
	<p><b>NP</b></p> <p>Segments of natural waters within the bankfull width of defined channels that are perennial</p>	50 feet	15 feet beyond buffer		



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	<p>nonfish habitat streams. Perennial streams are flowing waters that do not go dry any time of the year of normal rainfall</p>				
	<p><b>NS</b>            Segments of natural waters within the bankfull width of defined channels that are not Type S, F or Np Waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of the year of normal rainfall.</p>	<p>50 feet</p>	<p>15 feet beyond buffer</p>		



WETLANDS					
TYPE	TYPE DESCRIPTION	BUFFER WIDTH	MINIMUM BUILDING SETBACK	% of reduction	COMMENT
Wetlands	<p><b>Category I</b></p> <p>Wetlands are those regulated wetlands that include but are not limited to rare, unique wetland types that are more sensitive to disturbance than most wetlands and that contain ecological attributes that are impossible to replace within a human lifetime. Category I wetlands score 70 points or more out of 100 on the wetlands ratings systems. Category I wetlands have a base buffer width of 200 feet.</p>	75 FEET		75%	<p>Wetlands are mapped in the GIS database but are not classified by type. Therefore, an average 75' wetland buffer is used based on recommendations from the Kitsap County DCD wetland biologist for NWI wetlands that are not classified in the database. This is based on review of delineated wetlands identified on preliminary plats from 1998-2004 where most unclassified wetlands were determined to be Type 2 (100 foot buffer) and Type 3 (50 foot buffer) wetlands</p>
	<p><b>Category II</b></p> <p>Wetlands are those regulated wetlands that score between 51-69 points out of 100 on the wetlands ratings system. Category II wetlands have a base buffer width of 100 feet.</p>				
	<p><b>Category III</b></p> <p>Wetlands are those regulated wetlands that score between 30-50 points on the wetlands ratings system. Activities affecting isolated, non-mosaic Category III wetlands that are less than 2,500 square feet may be allowed provided that the wetlands report identifies the specific wetland function affected or at risk, and the proposed mitigation to replace the wetland function, on a per function basis. Category III wetlands have a base buffer width of 50 feet.</p>				
	<p><b>Category IV</b></p> <p>Wetlands are those regulated wetlands that score less than 30 points out of 100 on the wetlands ratings system. Activities affecting isolated, non-mosaic Category IV wetlands that are less than 7,500 square feet may be allowed provided that the wetlands report identifies the specific wetland function affected or at risk, and the proposed mitigation to replace the wetland function, on a per function basis. Category IV wetlands have a base buffer width of 30 feet.</p>				



SALTWATER SHORELINES AND LAKES					
TYPE	TYPE DESCRIPTION	BUFFER WIDTH	MINIMUM BUILDING SETBACK	% of reduction	COMMENT
Waterbody	<b>Bay, Estuary, Ocean or Sea</b> (Water Body cartographic feature code: 116)			75%	WBHYDRO contains watercourses represented as arcs or lines. These occur alone as single arc watercourses representing streams, ditches, or pipelines, or as centerlines through water body polygons such as double-banked streams, lakes, impoundments, reservoirs, wet areas, or glaciers.
	<b>Lake, Pond, Reservoir, Gravel pit or quarry filled with water</b> (Water Body cartographic feature code: 421, 101, 402)				
	<b>Marsh, wet area, swamp or bog</b> (Water Body cartographic feature code: 111)				
HYDRIC SOILS					
TYPE	TYPE DESCRIPTION	BUFFER WIDTH	MINIMUM BUILDING SETBACK	% of reduction	COMMENT
Department of Natural Resources Soil Survey	<b>Soil Description:</b> <ul style="list-style-type: none"> <li>• Bellingham silty clay loam</li> <li>• McKenna gravelly loam</li> <li>• Mukilteo peat</li> <li>• Norma fine sandy loam</li> <li>• Semiahmoo muck</li> <li>• Shalcar muck</li> <li>• Shelton-McKenna complex                             <ul style="list-style-type: none"> <li>○ 0-10 percent slope</li> </ul> </li> <li>• Tacoma silt loam</li> </ul>		S	75%	Potential Wetlands



GEOHAZARDS					
TYPE	TYPE DESCRIPTION	BUFFER WIDTH	MINIMUM BUILDING SETBACK	% of reduction	COMMENT
Geohazard	<p><b>Areas of High Geologic Hazard</b></p> <p>a) Areas with slopes greater than thirty percent and mapped by the Coastal Zone Atlas or Quaternary Geology and Stratigraphy of Kitsap County as "Unstable" (U), "Unstable Old Land Slides" (UOS) or "Unstable Recent Slides" (URS).</p> <p>B) Areas deemed by a Geologist to meet the criteria.</p>			75%	The GEOHAZARDS feature class is a union of the DNR & Natural Resource Conservation Service's (SCS) 1980 Soil Survey for Kitsap County and the soil STABILITY classification from the 1979 "Quaternary Geology and Stratigraphy of Kitsap County" thesis work by Jerald Deeter.
	<p><b>Areas of Moderate Geologic Hazard</b></p> <p>(a) Areas designated U, UOS, or URS in the Coastal Zone Atlas or Quaternary Geology and Stratigraphy of Kitsap County, with slopes less than thirty percent; or areas found by a qualified geologist to meet the criteria for U, URS, and UOS with slopes less than thirty percent; or (b) Slopes identified as "Intermediate" (I) in the Coastal Zone Atlas or Quaternary Geology and Stratigraphy of Kitsap County, or areas found by a qualified geologist to meet the criteria of I; or (c) Slopes fifteen percent or greater, not classified as I, U, UOS, or URS, with soils classified by the Natural Resources Conservation Service as "highly erodible" or "potentially highly erodible;" or (d) Slopes of fifteen percent or greater with springs or groundwater seepage not identified in Items 1 and 2, above; or (e) Seismic areas subject to liquefaction from earthquakes (seismic hazard areas) such as hydric soils as identified by the Natural Resources Conservation Service, and areas that have been filled to make a site more suitable. Seismic areas may include former wetlands which have been covered with fill.</p>			50%	



### **FUTURE ROADS/RIGHTS-OF-WAY NEEDS**

Once the reductions are taken for the critical areas the net totals for the remaining land supply for vacant and underutilized lands are reduced by 20% for future roads and rights-of-ways that will be needed to accommodate new development in the Urban Growth Areas.

### **FUTURE PUBLIC FACILITIES**

The remaining vacant and underutilized land supply is reduced by 20% to account for future public facilities and other non-residential land uses that will be needed to serve new developments in the Urban Growth Areas.

### **UNAVAILABLE LANDS**

The remaining vacant lands supply is reduced by 5% and underutilized land supply is reduced by 15%. This reduction of unavailable lands account for parcels that are considered buildable, but that are likely unavailable for further development based on landowner intent.

### **PLATTED LOTS (-)**

25% of the 100% underutilized platted lot acres that were previously removed from the land supply are added back into the underutilized land supply. This 25% will account for some additional development capacity, including capacity for accessory dwelling units (ADU's). Of the 100% vacant platted lot acres that were removed from the lands supply, 100% of the total lot counts are added back to the dwelling unit capacity. This will account for 1 dwelling unit for each vacant platted lot.

### **NET DEVELOPABLE ACRES BY ZONE**

The net acre sums for each Urban Growth area by zone after all the above reductions have been applied.

### **DWELLING UNIT CAPACITY**

The net developable acres for each Urban Growth area are multiplied by the dwelling units per acre. The existing dwelling units are removed from the calculation on the underutilized land supply.

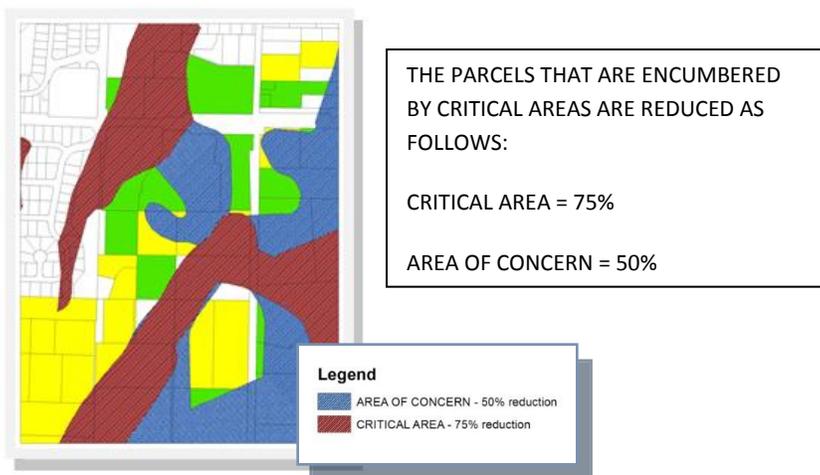
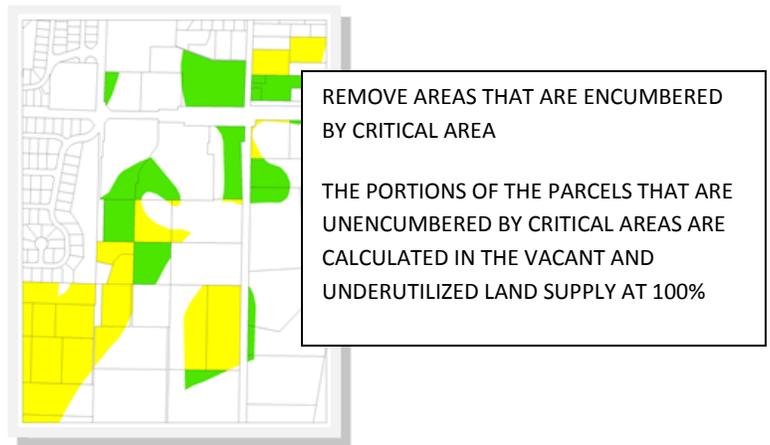
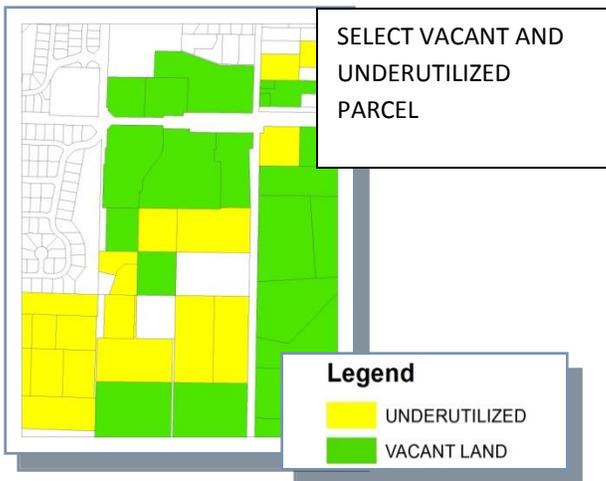
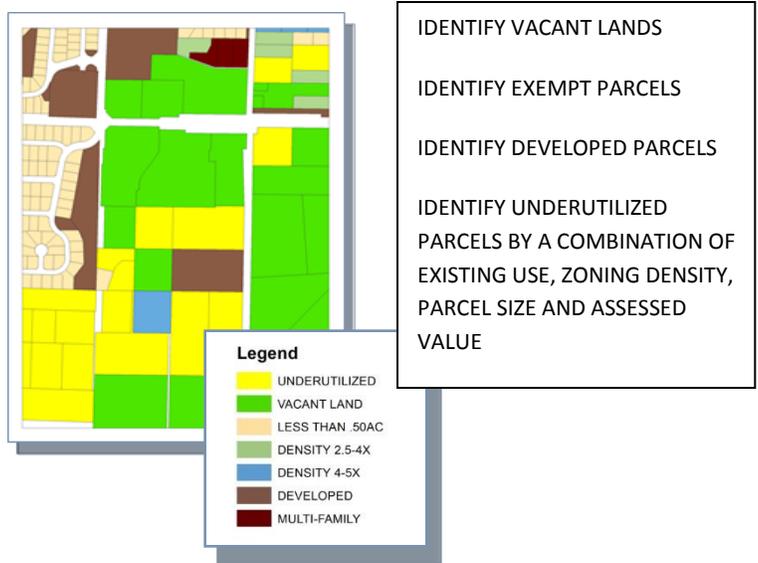
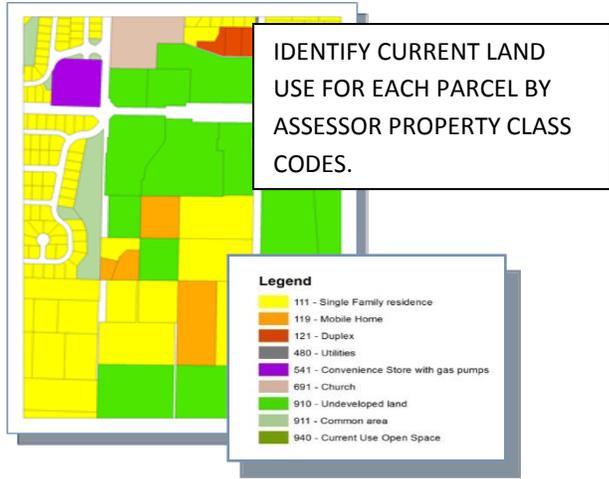
The dwelling units per acre are calculated based on the achieved densities. This calculation will determine the total new housing unit capacity in each zone.

<b>ZONING</b>	<b>ALLOWED UNITS PER ACRES</b>	<b>DWELLING UNIT CAPACITY USED FOR CALCULATION</b>
Urban Restricted (UR)	1-5 dwelling units per acre	2.5 dwelling units per acre
Illahee Greenbelt Zone (IGZ)	1-4 dwelling units per acre	2 dwelling units per acre
Urban Low Residential (UL)	5-9 dwelling units per acre	6 dwelling units per acre
Senior Living Homestead (SLH)	5-9 dwelling units per acre	6 dwelling units per acre
Urban Cluster Residential (UCR)	5-9 dwelling units per acre	7.6 dwelling units per acre
Urban Medium Residential (UM)	10-18 dwelling units per acre	12 dwelling units per acre
Urban High Residential (UH)	19-30 dwelling units per acre	21.75 dwelling units per acre
Mixed Use (MU)	10-30 dwelling units per acre	15 dwelling units per acre



### POPULATION CAPACITY

This is the final step for the urban land capacity analysis. Total population capacity for each zone and UGA is derived by multiplying the dwelling unit capacity by the average household size for applicable single-family and multi-family zones.





## Kitsap County Land Capacity Analysis – GIS Methodology

UNDERUTILIZED LANDS	URBAN LOW <i>6.0 DU/AC</i>	SENIOR LIVING HOMESTEAD <i>6.0 DU/AC</i>	URBAN MEDIUM <i>12 DU/AC</i>	URBAN HIGH <i>21.75 DU/AC</i>	URBAN RESTRICTED <i>2.5 DU/AC</i>	URBAN CLUSTER <i>7.6 DU/AC</i>	ILLAHEE GREENBELT <i>2 DU/AC</i>	URBAN VILLAGE CENTER <i>12 DU/AC</i>	MIXED USE <i>15 DU/AC</i>	GRAND TOTAL
<b>Gross Residential Acres (Developed Parcels only)</b>										
Total Gross Acres	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multi - Family Dwelling (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parcels < 0.50 Acres (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Public/Current Use/Utilities (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shoreline Parcel < 1.00 Acre (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Redevelopable Acres</b>										
<i>Median Value \$000,000</i>										
Density < 2.5 (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Density >= 2.5 - < 4.00 Value > (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Density >= 4.0 - < 5.00 Value > (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Density >= 5.0 - < 10.00 Value > (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Remove 100% of Platted lots (acres)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>
<b>Critical Areas</b>										
Total Redevelopable Acres	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unencumbered Acres	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acres within Critical Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Critical Areas reduction 75% (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acres within Area of Concern	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area of Concern reduction 50% (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Roads/Right-of-Way (Future)</b>										
20% (-)	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Public Facility (Future)</b>										
20% (-)	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Unavailable Lands</b>										
15% (-)	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Commercial Split</b>										
50% (-)	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>



Platted Lots								50% (-)	50% (-)	
Underutilized Platted Lots 25% (+)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Platted Lot existing dwelling unit (count)	0	0	0	0	0	0	0	0	0	0
Dwelling Unit count (-75%)	0	0	0	0	0	0	0	0	0	0
<b>Existing Dwelling Units</b>										
Existing Dwelling Units (non platted lots) (-)	0	0	0	0	0	0	0	0	0	0
Total Dwelling Units (-)	0	0	0	0	0	0	0	0	0	0
<b>TOTALS</b>										
<b>Net Developable Acres</b>	<b>0.00</b>									
	6.0 DU/AC	6.0 DU/AC	12 DU/AC	21.75 DU/AC	2.5 DU/AC	7.6 DU/AC	2 DU/AC	12 DU/AC	15 DU/AC	
<b>Dwelling Unit Capacity</b>	<b>0</b>									
	2.5 pph	1.8 pph	2.5 pph	1.8 pph	2.5 pph	2.5 pph	2.5 pph	1.8 pph	1.8 pph	
<b>Population Capacity</b>	<b>0</b>									

### Rural Land Capacity Analysis

The Land Capacity method for the unincorporated rural areas is an estimate of the amount of development that land can accommodate given land use. The Land Capacity Analysis (LCA) method for the rural areas is less complex than that of the urban capacity analysis. The rural zones promote low density residential development consistent with rural character and with limited public services. Some rural zones are relatively unconstrained by environmentally sensitive areas or other landscaping features while other rural zones are designed to protect environmental features such as significant visual, historical, natural features, wildlife corridors, steep slopes, wetlands and streams. Preservation of forest uses are also promoted in some rural zones.

The Land Capacity Analysis is developed through a series of steps of analysis to derive the development capacity estimates utilizing Kitsap County’s Geographic Information System (GIS).

#### EXEMPT PARCELS

As with the urban land capacity analysis, some parcels are not considered for redevelopment by their current property class code and are described in the table as “Exempt”. These parcels include:

- Utility parcels
- Transportation parcels
- Marinas
- Cemeteries
- Hospitals (including institutional facilities)
- Governmental Services
- Schools
- Churches
- Cultural, Entertainment and Parks/Recreation
- Tidelands and water area
- Current Use exempt parcels (RCW 84.34)
- Commercial/Industrial use on residential zoned parcel



**SELECT FROM GIS.PARCEL\_POLY WHERE [PROP\_CLASS] >= '210' AND [ULCA\_RESULTS] IS NULL  
FIELD CALCULATION IN ULCA\_RESULTS: "EXEMPT"**

**MULTI-FAMILY**

Parcels that have multi-family residential structures are also not considered for redevelopment potential as most multi-family structures have already utilized its maximum density for its zone and existing trends during the planning period do not support these structures being replaced with high density development.

**SELECT FROM GIS.PARCEL\_POLY WHERE ([PROP\_CLASS] >= '121' OR [PROP\_CLASS] <= '170') AND ULCA\_RESULTS IS NULL  
FIELD CALCULATION IN ULCA\_RESULTS: "MULTI-FAMILY"**

**VACANT LAND**

Parcels that are currently undeveloped land based on their current property class code are classified in the results for LCA as "Vacant Land". There is no minimum lot size exclusion applied to vacant lands. For the purpose of the rural land capacity, each parcel that is currently less the allowed minimum zone requirements will be allotted one dwelling unit.

**SELECT FROM GIS.PARCEL\_POLY WHERE ([PROP\_CLASS] = '910' OR [PROP\_CLASS] = '990') AND ULCA\_RESULTS IS NULL  
FIELD CALCULATION IN ULCA\_RESULTS: "VACANT LAND"**

**UNDERUTILIZED LAND**

Parcels in the rural zones are considered underutilized if the parcel size is large enough to accommodate any addition dwelling units based on its current zone. The table below describes the minimum acres required by zone to accommodate an additional dwelling unit. All parcels with existing commercial/industrial developments in these zones will be considered developed with no potential for accommodating any additional residential dwelling units.

ZONE	DENSITY	MINIMUM ACRES TO ACCOMMODATE ADDITIONAL UNIT (assumes 1 existing unit)
Rural Residential (RR)	1 dwelling unit per 5 acres	10 acres
Urban Reserve (URS)	1 dwelling unit per 10 acres	20 acres
Rural Protection (RP)	1 dwelling unit per 10 acres	20 acres
Rural Wooded (RW)	1 dwelling unit per 20 acres	40 acres
Forest Resource Lands (FRL)	1 dwelling unit per 40 acres	80 acres

***(RURAL RESIDENTIAL ZONING EXAMPLE)***

**SELECT FROM GIS.PARCEL\_POLY WHERE [POLY\_ACRES] >= '10.00' AND [ZONE\_CODE] = 'RR' AND ULCA\_RESULTS IS NULL  
FIELD CALCULATION IN ULCA\_RESULTS: "UNDERUTILIZED"**



## CRITICAL AREAS

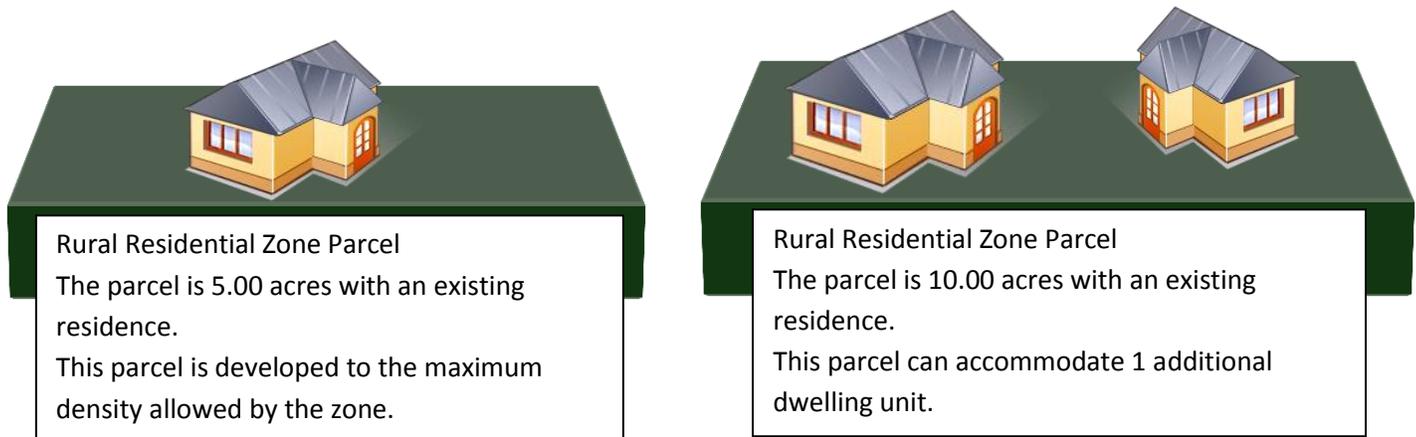
Critical areas in the rural land capacity analysis are not deducted from the land supply. Parcel development in the rural areas will allow for any additional dwelling unit as long as the parcel is large enough to accommodate the addition.

## NET DEVELOPABLE ACRES BY ZONE

The net acre sums for each rural zone.

## DWELLING UNIT CAPACITY

One dwelling unit per allowed acreage based on its current zone.



## Urban Commercial and Industrial Land Capacity Analysis

Commercial and Industrial Land Capacity analysis is somewhat similar to the residential analysis. The goal of the commercial and industrial analysis is to determine the land supply of net buildable acres then using conversions, determine employment capacity (jobs).

## PARCEL DATASET

The same dataset that is used for the residential capacity is also used for the commercial/industrial capacity.

## EXEMPT PARCELS

These parcels are not considered for redevelopment by their current property class code and are described in the table as “Exempt”. These parcels include:

- Utility parcels
- Transportation parcels
- Marinas
- Cemeteries
- Hospitals (including institutional facilities)
- Governmental Services
- Schools
- Churches
- Cultural, Entertainment and Parks/Recreation



- Tidelands and water area
- Current Use exempt parcels (RCW 84.34)

**SELECT FROM GIS.PARCEL\_POLY WHERE [PROP\_CLASS] >= '210' AND [ULCA\_RESULTS] IS NULL  
FIELD CALCULATION IN ULCA\_RESULTS: "EXEMPT"**

### MULTI-FAMILY

Parcels that have multi-family residential structures are also not considered for redevelopment potential as most multi-family structures have already utilized its maximum density for its zone and existing trends during the planning period do not support these structures being replaced with high density development.

**SELECT FROM GIS.PARCEL\_POLY WHERE ([PROP\_CLASS] >= '121' OR [PROP\_CLASS] <= '170') AND ULCA\_RESULTS IS NULL  
FIELD CALCULATION IN ULCA\_RESULTS: "MULTI-FAMILY"**

### VACANT LAND

Parcels that are currently undeveloped land based on their current property class code are classified in the results for LCA as "Vacant Land". There is no minimum lot size exclusion applied to vacant lands.

**SELECT FROM GIS.PARCEL\_POLY WHERE ([PROP\_CLASS] = '910' OR [PROP\_CLASS] = '990') AND ULCA\_RESULTS IS NULL  
FIELD CALCULATION IN ULCA\_RESULTS: "VACANT LAND"**

### UNDERUTILIZED LAND

Parcels that have single family, mobile homes or sheds/garages or cabins are considered underutilized.

**SELECT FROM GIS.PARCEL\_POLY WHERE ([PROP\_CLASS] = '111' OR [PROP\_CLASS] = '119' OR [PROP\_CLASS] = '183' OR [PROP\_CLASS] = '198') AND ULCA\_RESULTS IS NULL  
FIELD CALCULATION IN ULCA\_RESULTS: "UNDERUTILIZED"**

Developed commercial or industrial use parcels are then evaluated for potential redevelopment. This is done by examining the relationship between a parcel's improvement value and its land value. This method assumes that a commercial or industrial use parcel is considered underutilized if the land is worth more than the buildings on it. This approach assumes parcels with improvement to land value ratios greater than 0.50 are deducted from the inventory.

**SELECT FROM GIS.PARCEL\_POLY WHERE (LAND\_VALUE \*.5) >= BLDG\_VALUE) AND ULCA\_RESULTS IS NULL  
FIELD CALCULATION IN ULCA\_RESULTS: "UNDERUTILIZED"**

### PLATTED LOTS (-)

All platted lots are identified and their acres are removed from the vacant and underutilized land supply prior to the critical areas reduction. Platted lots are identified by Assessor tax account number with the following query:

**SELECT FROM GIS.PARCEL\_POLY WHERE [ACCT\_NO] >= '37\*\*.\*.\*.\*.\*'**

### PLANNED LOTS (-)

All planned lots are identified and their acres are removed from the vacant and underutilized land supply prior to the critical areas reduction. Planned lots are created by a recorded Binding site plan and require building envelopes for all existing and proposed structures for each lot and also require a parking lot plan. This gives this analysis an exact building square footage for vacant and underutilized lots and need to be removed from the land supply before any critical areas reductions are taken. There is no query or selection process for identifying this information so this is a manual process using the Kitsap County Auditor recording information on Binding Site Plan mylars.



## CRITICAL AREAS

A mosaic is created for use in determining critical areas boundaries, including buffers and required setbacks. The currently adopted Critical Areas Ordinance is used to determine critical area coverage and development limitations. Once identified, a mosaic feature is created and then intersected over the existing vacant and underutilized land supply. This intersect allows identification of the critical area for each parcel and the identified area is then reduced by the LCA reduction factors.

The following is the geo processing functions used to create the mosaic:

- Buffer
- Clip
- Intersect
- Merge
- Dissolve

The LCA assumes a 75% reduction for 'critical areas' and a 50% reduction for 'Areas of Moderate Geologic Hazard'.

## FUTURE ROADS/RIGHTS-OF-WAY NEEDS

Once the reductions are taken for the critical areas the net totals for the remaining land supply for vacant and underutilized lands are reduced by 20% for future roads and rights-of-ways that will be needed to accommodate new development in the Urban Growth Areas.

## FUTURE PUBLIC FACILITIES

The remaining vacant and underutilized land supply is reduced by 20% to account for future public facilities and other non-residential land uses that will be needed to serve new developments in the Urban Growth Areas.

## UNAVAILABLE LANDS

The remaining vacant lands supply is reduced by 20% and underutilized land supply is reduced by 25%. This reduction of unavailable lands account for parcels that are considered buildable, but that are likely unavailable for further development based on landowner intent.

UNDERUTILIZED LANDS	INDUSTRIAL	BUSINESS CENTER	BUSINESS PARK	NEIGHBORHOOD COMMERCIAL	HIGHWAY TOURIST COMMERCIAL	REGIONAL COMMERCIAL	URBAN VILLAGE CENTER	MIXED USE	GRAND TOTAL
<b>Gross Acres (Developed Parcels only)</b>							See Residential Sheet for split	See Residential Sheet for split	
Total Gross Acres	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multi - Family Dwelling (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Public/Current Use/Utilities (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Remove 100% Platted Lots</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Critical Areas</b>									
Total Redevelopable Acres	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unencumbered Acres	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acres within Critical Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Critical Areas reduction 75% (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



## Kitsap County Land Capacity Analysis – GIS Methodology

Acres within Area of Concern	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area of Concern reduction 50% (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Roads/Right-of-Way (Future)</b>									
20% (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Public Facility (Future)</b>									
20% (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Unavailable Lands</b>									
25% (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Underutilized Acres</b>									
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>VACANT LAND</b>									
	<b>INDUSTRIAL</b>	<b>BUSINESS CENTER</b>	<b>BUSINESS PARK</b>	<b>NEIGHBORHOOD COMMERCIAL</b>	<b>HIGHWAY TOURIST COMMERCIAL</b>	<b>REGIONAL COMMERCIAL</b>	<b>URBAN VILLAGE CENTER</b>	<b>MIXED USE</b>	<b>GRAND TOTAL</b>
<b>Gross Acres</b>							See Residential Sheet for split	See Residential Sheet for split	
Total Gross Acres	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Remove 100% Platted Lots</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Critical Areas</b>									
Total Redevelopable Acres	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unencumbered Acres	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acres within Critical Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Critical Areas reduction 75% (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acres within Area of Concern	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area of Concern reduction 50% (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Roads/Right-of-Way (Future)</b>									
20% (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Public Facility (Future)</b>									
20% (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Unavailable Lands</b>									
20% (-)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Vacant Acres</b>									
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



<b>Total Net Developable Acres</b>	<b>0.00</b>								

**CONVERT NET DEVELOPABLE ACRES INTO BUILDING SQUARE FOOTAGE**

The method for converting net developable acres to employment capacity is to convert acres to building square footage. This is done by multiplying net developable acres by 43,560.

**PERCENTAGE OF LOT COVERAGE**

The building square footage is then multiplied by a percentage of lot coverage to calculate the resulting building area estimates. The lot coverage for commercial zones is 32% and for industrial zones the lot coverage is 38%. This method is used for all zones except the Business Center and Mixed Use zones that exist within the Silverdale Urban Growth area. The Silverdale zones of Business Center and Mixed Use utilize a Floor Area Ratio (FAR) calculation of .25

**VACANCIES RATE ADJUSTMENT**

A vacancy rate reduction of 5% is then removed from the remaining square footage.

**EMPLOYMENT RATE – SQUARE FEET PER EMPLOYEE**

Convert the remaining square footage into employment capacity by dividing the square footage capacity by the employment density assumptions. This will result in the square footage of building required per employee. The density assumption for industrial zones is 969 square feet per employee and 500 square feet per employee for commercial zones.

**RESULTING EMPLOYMENT CAPACITY**

The results are jobs.

*City of Bainbridge Island*  
**PLANNING & COMMUNITY DEVELOPMENT**



**MEMORANDUM**

TO: Katrina Knutson  
Senior Planner

FROM: Jennifer Sutton, AICP  
Special Project Planner

DATE: June 2, 2014

RE: MOU for Variation in Land Capacity Analysis Methodology

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The City contracted with Kitsap County Department of Community Development in 2013 to complete both the commercial and residential land capacity analyses model. The City staff did not have the availability to run the model in the summer and fall of 2013. The City requested that the County make the following changes to the City’s Land Capacity Analysis, due to local circumstances. The “local circumstances” noted below are generally City zoning and subdivision standards that vary from the County’s own standards.

The residential and commercial Land Capacity Analyses for the City were modified in two ways from how the County completed the analysis for the County lands.

1. The 20% reduction for future rights-of-way should not be taken. Density, floor area ratio, and lot coverage are all calculated based upon gross lot area prior to any right-of-way dedication, for both residential and commercial (See BIMC Section 18.12.050 *Rules of Measurement*).
2. Reduce the 20% reduction for future public facilities to 15%. This is due to the fact that there are not any new schools or major expansions planned for the school district- the City stopped collecting a *School Impact Fee* in 2011. The private water systems in the City do not have any new facilities or expansion planned in their 6-year Capital Improvement Plan. The City’s own water and sewer plans are in the middle of plan updates, and only minor expansion is planned.



## DEPARTMENT OF COMMUNITY DEVELOPMENT

# MEMORANDUM

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**To:** Katrina Knutson, Senior Planner, Kitsap County DCD  
**From:** Allison Satter, Senior Planner  
**Date:** July 8, 2014  
**Re:** 2012 Urban Land Capacity Analysis (ULCA) Methodology

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This is to document the methodology the City of Bremerton has used for updating the Urban Land Capacity Analysis (ULCA) for those territories located within the City of Bremerton City Limits.

### General Approach

As an overview, the City of Bremerton relied on the structure of the ULCA methodology as outlined in the document *Kitsap County Updated Land Capacity Analysis (ULCA)*. However, there are several elements that the City of Bremerton adjusts for estimating land capacity based on conditions within City Limits that differ substantially from those under Kitsap County jurisdiction. For purposes of summarizing these differences the points where Bremerton's proposed approach deviates substantively from the County are summarized below. A step-by-step summary of Bremerton's proposed methods follows later in the memo.

*1. Underutilized Lot Sizes in Low Density Residential (LDR) Designation:* Bremerton proposes to determine 'underutilized' lots in the LDR zone differently from Kitsap County. In Bremerton a smaller lot size threshold for determining potentially underutilized lots is proposed. The County uses a lot size of 1.25 acres as a base threshold for determining potentially subdividable lots. Bremerton has an already compact urban form where many urban lots of much smaller size can (and based on recent evidence are) subdividing to add additional units. Therefore Bremerton's threshold for potentially underutilized lots is derived by taking the mid-range<sup>1</sup> minimum lot size allowed in the City's R10 (5 to 10 Unit per Acre) LDR designation (5,000 SF), and multiplying by 2.5, to arrive at a threshold underutilized minimum lot size of 12,500 SF. In other words, if a lot has 2.5 times larger the mid-range minimum lot size, it is likely to have redevelopment. This 12,500 threshold is appropriate for Bremerton, because subdivision of lots as small as 4,300 SF is encouraged in established

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<sup>1</sup> The City of Bremerton's Low Density Residential zone allows for infill density between 5 and 10 units per acre. A calculation of neighborhood average lot area determines what density (and minimum lot size) within this range is allowable. The middle minimum lot size within this range is 5,000 SF.

neighborhoods in the City, and because the City has a large number of relatively low-value single family homes that have a high probability of redevelopment. Properties that contain duplexes within the City of Bremerton are also able to subdivide, however an 18,000 SF threshold is appropriate for these site as more area is required to accommodate the density standards and parking on the site.

The majority of the City is served by City sewer, however Marine Drive is still served by private septic systems. The City is not anticipating installing sewer into this area within the foreseeable future as this would require a significant capital investment. The Kitsap County Health District requires any new lots created by a subdivision to have a minimum 12,500 SF for a lot served by a septic system with the most ideal permeable soils. As such, 0.75 acres (32,670 SF) was used as a base threshold for determining potentially subdividable lots that do not have sewer available.

The City, like the County, will use an additional building value screen to select out those lots greater than 12,500SF with high structure values that are unlikely to redevelop or subdivide. This additional property value screen is intended to capture high value waterfront homes, and other luxury homes, where property owners have made substantial investments in their single family houses and are unlikely to future subdivide. This figure was arrived at by taking the approximate median assessed value of single family home structure in Bremerton (\$108,499 in 2012) and multiplying by 2.75, to arrive at an assessed home value screen of \$298,372. If a home is assessed in 2012 with a structure value greater than \$298,372 it will not be included as an underutilized lot, regardless of lot size.

This report also includes a map showing the underutilize and vacant lots for the low density residential parcels resulting from this methodology.

*2. Underutilized Lots and Development Capacity in Center Designations:* The 2004 Bremerton Comprehensive Plan designated 6 Neighborhood Centers, 3 District Centers, 2 Employment Centers, and a Downtown Regional Center locations, which were intended to accommodate all of the City's new commercial mixed use and multifamily development, and roughly half of its population growth over the next 20 years. A map of the Centers has been added to this report. To help accommodate future growth, Bay Vista has also been assigned as a Neighborhood Center through an update Comprehensive Plan process in 2006 and 2007. These Centers are programmed for high densities and a thorough mix of commercial and residential uses. It is difficult to determine on a parcel-by-parcel basis with GIS which parcels are underutilized, since as the county notes, a parcel can only be geocoded once, and therefore it is challenging to systematically account for separate development capacities of commercial and residential on the same parcel as would occur with mixed-use development. Secondly, due to generous 'upzoning' of lands within Centers it is the case that nearly all parcels in Centers have substantially underutilized development capacities that the market is only starting to make use of at the time of this report.

Because of these factors, the City proposes using more of a 'macro' approach to estimating

development capacity in Centers. This is based on the assumption that, at the time of this report, a negligible amount of land in Centers has been developed to full capacity per the Comprehensive Plan. To further capture this analysis, lots which contain a primary structure built after the adoption of the Comprehensive Plan in December 2004, have been removed as these structures are likely to be undeveloped and meet our Comprehensive Plan. The City took the net developable area of all lands within Centers (excluding lots developed after 2005) and applied a blanket target density, which are assigned per the Comprehensive Plan and allowed by current zoning. Target densities are at different levels for the City's Neighborhood Center, District Center, Employment Center and Downtown Regional Center designations. After arriving at a maximum development capacity, substantial market reduction factors are applied to each resultant total to account for the lag time during which the market will not realize full development capacity. In centers, market reduction factors are calibrated to account for the relative market viability of the centers based on observed development trends. A full analysis was completed for establish a market reduction factor for each center in 2006, however a few centers were not included in this analysis. For this report, comparisons were made to equivalent centers to address their predicted market reduction factor. Because of their similar characteristics the same market factor was utilized for Charleston District Center's market reduction factor and Oyster Bay Neighborhood Center (due to similar proximity as a center west of downtown and comparable recent growth trends) and Downtown District Center and Harrison Employment Center (due to comparable uses presented within those designations for type of employment and residential options and similar vicinity with access to Warren/Wheaton Way and waterfront properties).

The Bay Vista site has been undergoing complete redevelopment since 2009 with the removal of the majority of structures and a complete renovation of the site. Analyzing the trends of this site and identifying that the site is likely to be redeveloped (land is vacant with infrastructure improvements installed in adjacent right-of-way for commercial development), there is a greater opportunity for more applicable review by the Floor-Area-Ratio (FAR) assumption for this Center instead of our blanket approach discussed above. The FAR was determined by the current commercial development located on the site.

### **STEP BY STEP METHODS – LOW DENSITY RESIDENTIAL (LDR)**

This summarizes the method proposed for the LDR designation. As noted above several elements are different for the City of Bremerton from the ULCA proposed for use by Kitsap County.

#### **Vacant Lands Methodology (LDR)**

Note that several steps from the County ULCA are not included, since they are not necessary in Bremerton. No water or sewer constraint factors are applied, and no land 'unavailability' factor is applied.

1. Identify all vacant LDR parcels with County Assessor Code 910.
2. Identify Critical Areas: Critical areas reductions have been deducted for the whole City limits. The critical area reductions will be based on maximum CAO buffers per the Bremerton CAO.
3. Vacant Residential Lands Needed for Future ROW: A 20% Right of Way deduction is used as consistent with Kitsap County and consistent to our buildable lands data.
4. Vacant Residential Lands Needed for Future Public and Quasi Public Facilities: A 15% facilities reduction factor is used as consistent with Kitsap County.
5. Report Remaining Net Acres: As consistent with Kitsap County.
6. Calculate Total Housing Unit and Population Holding Capacity: Apply an average build-out density of 7.5 Units / Acre (mid-range of the City's LDR designation), and average household size of 2.24 (taken from the 2010 US Census).

Within the Buildable Lands Review attached to this report, the chart on the last page identifies the Low Density Residential (LDR) capacity. To illustrate the areas that include vacant or underutilize properties, a map has been attached to this report.

### **Underutilized Lands Methodology (LDR)**

Note that several steps from the County ULCA are not included, since they are not necessary in Bremerton. Majority of the City has no water or sewer constraint factors that apply (see above analysis), and no land 'unavailability' factor is applied.

1. Identify developed underutilized parcels.
  - a. Parcels with area of 12,500 SF or greater and having one single family home, serviced by City's sewer, shall be considered underutilized. (See discussion in General Approach above).
  - b. Parcels that do not have City's sewer available (Marine Drive) with an area of 0.75 acres or greater and having one single family home shall be considered underutilized. (See discussion in General Approach above).
  - c. Parcel with an area of 18,000 SF or greater and having a duplex, serviced by City's sewer, shall be considered underutilized. (See discussion in General Approach above).
2. Identify Underutilized Parcels that are Likely to Redevelop: Screen out all parcels having home structures with 2012 Assessed value of \$298,372 or greater. (See

discussion in General Approach above).

3. Identify Critical Areas: Critical areas reductions have been deducted for the whole City limits. The critical area reductions will be based on maximum CAO buffers per the Bremerton CAO.
4. Vacant Residential Lands Needed for Future ROW: A 20% Right of Way deduction is used as consistent with Kitsap County.
5. Vacant Residential Lands Needed for Future Public and Quasi Public Facilities: A 15% facilities reduction factor is used as consistent with Kitsap County.
6. Report Remaining Net Acres: As consistent with Kitsap County.
7. Calculate Total Housing Unit and Population Holding Capacity: Apply an average build-out density of 7.5 Units / Acre (mid-range of the City's LDR designation), and average household size of 2.24 (taken from the 2010 US Census).

Attached to this report, the charts on the last page identifies the Low Density Residential (LDR) capacity. To illustrate the areas that include vacant or underutilize properties, a map has been attached to this report.

## **STEP BY STEP METHODS – CENTER DESIGNATED AREAS**

This summarizes the method proposed for estimating urban land capacity in Bremerton's neighborhood, district, employment and downtown regional center designations. As noted above in General Approach this differs from Kitsap County. Within the Buildable Lands Review attached to this report, the charts include the analysis that resulted from this methodology. Further within this report, a Centers map is attached to clearly identify the Center.

1. *Determine Base Net Land Area in Center:* Define aggregate net area of all parcels within the Centers (Neighborhood, District, Employment or Downtown Regional) by subtracting lands unlikely to be redeveloped from gross area of centers. Lands unlikely to redevelop include: right-of-way, water systems, tidelands, fully encumbered easements, common areas, and gas stations.
2. *Apply General Non-Buildable Factor:* Apply a blanket 15% reduction to account for future ROW areas, future public and quasi-public facilities, and undevelopable terrain. (Note: These factors are consolidated and reduced because Center locations generally have all infrastructure, roadways and facilities already in place.) Please see #6(c) below for additional information for this analysis to general non-buildable factor for the South Kitsap Industrial Employment Center.
3. *Critical Areas* - Critical areas reductions have been deducted for the whole City

limits. The critical area reductions will be based on maximum CAO buffers per the Bremerton CAO.

4. *Recent Development* – Parcels that included primary structures built after the Comprehensive Plan adoption (built after January 2005) have been applied as a reduction. (See discussion in General Approach above).
5. *Calculate Total Housing Unit and Population Holding Capacity:* Apply an overall housing unit density factor as consistent with the City of Bremerton Comprehensive Plan<sup>2</sup> as follows:
  - a. Neighborhood Centers:
    - i. Apply housing density factor of 20 Units / Acre to the following Neighborhood Centers:
      1. Perry Avenue Neighborhood Center
      2. Sylvan / Pine Neighborhood Center
      3. Haddon Park Neighborhood Center
      4. Oyster Bay Neighborhood Center
    - ii. Apply housing density factor of 12.5 Units / Acre to the following Neighborhood Centers:
      1. Manette Neighborhood Center
    - iii. Bay Vista will be analysis below in #7
  - b. District Centers: Apply housing density factor of 20 Units / Acre for all District Centers (Wheaton/Riddell, Charleston, and Wheaton/Sheridan) as consistent with the City of Bremerton Comprehensive Plan.
  - c. Employment Centers: Apply housing density factor of 15 Units / Acre for the Harrison Employment Center. As the South Kitsap Industrial Area (SKIA) Employment Center does not allocate for residential, no housing density factor will be calculated for SKIA.
  - d. Downtown Regional Center: Apply housing density factor of 40 Units / Acre
6. *Calculate Total Commercial Development Capacity:* Apply an overall commercial development capacity<sup>3</sup> as follows:
  - a. Neighborhood Centers: Neighborhood Center Commercial Acreage estimated at 30% of Base Net Land Areas as consistent with Bremerton Comprehensive Plan. Then apply a factor of 10,000 GSF commercial per available Commercial acre of land. Note: Commercial includes both retail

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<sup>2</sup> The housing density factors were derived from the 2004 Comprehensive Plan Housing Appendix

<sup>3</sup> The commercial acreage estimates of the percentage of Base Net Land Areas is cited in the 2004 Comprehensive Plan Land Use Appendix – LU Appendix Table 1.

and office uses.

- b. District Centers: District Center Commercial Acreage estimated at 40% of Base Net Land Area as consistent with Bremerton Comprehensive Plan. Then apply a factor of 10,000 GSF commercial space per available Commercial acre of land. Note: Commercial includes both retail and office uses. Bay Vista Neighborhood Center methodology differs and is described below in analysis #7.
- c. Employment Centers: Employment Center Commercial Acreage estimated at 40% of Base Net Land Area for Harrison Employment Center. Then apply a factor of 10,000 GSF commercial space per available Commercial acre of land. Note Commercial includes both retail and office uses.

In regards to commercial development capacity, please note that the South Kitsap Industrial Area (SKIA) Employment Center analysis was processed by the Kitsap County procedure as this area is more rural in nature and was just recently annexed from Kitsap County jurisdiction by the City of Bremerton. However, one difference from the County methodology was increase the general non-buildable factor (factors generally include infrastructure, roadways, and facilities) from 20% to 30%, as SKIA Subarea Plan requires additional improvements when developing such as vegetation preservation/retention, trails, stormwater retention, open space, etc., which will increase the non-buildable factor to such.

- d. Downtown Regional Center: DRC Commercial Acreage estimated at 100% of Base Net Land Area. This assumes that Commercial space is included as a full buildout of ground levels of buildings in the Downtown Regional Center as consistent with the Comprehensive Plan and zoning standards. Then apply a factor of 10,000 GSF commercial space per available commercial acre of land.
7. *Bay Vista Analysis:* (See discussion in General Approach above).
- a. *Calculate Total Housing Unit and Population Holding Capacity:* Bay Vista Subarea Plan allocates for 865 units within its current plan and 328 units have been built at the time of this report. The remaining amount of units, 483 units, which will be used for this report<sup>4</sup>.
  - b. *Calculate Total Commercial Development Capacity:* Estimate Bay Vista commercial Base Net Land Area. Then apply a FAR of 0.15 (15%), determined from recent development within Bay Vista, to the Base Net Land

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<sup>4</sup> The Bay Vista area underwent a Subarea Plan process in 2009 (formerly West Park). The Subarea Plan, which included Environmental Impact Statement, analyzed specific growth within Bay Vista and trends show that Bay Vista is developing at this rate.

Area.

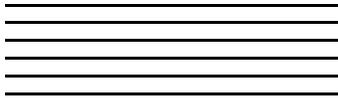
8. *Apply Market Reduction Factor:* Bremerton's methods assume that essentially all parcels within Center locations are underutilized. This is based on the fact that a negligible amount of parcels are developed to full capacity. There are however a number of existing uses in some centers. The interim period during which these uses will continue in their current configurations is accounted for by a market factor. A percentage market factor deduction<sup>5</sup> is applied to both the Residential Development Capacity and the Commercial Development Capacity totals for each Center. This factor is an estimated percentage of development capacity that can be reasonably expected within a 20 year planning horizon. Some centers have shown greater market momentum than others, and so the factors are adjusted accordingly. These factors are as consistent with the 2004 Bremerton Comprehensive Plan unless otherwise stated in the General Approach (changes were made to Wheaton/Sheridan District, Oyster Bay Neighborhood and Harrison Employment Center).
  - a. Downtown Regional Center: -50% Market Factor
  - b. Charleston District Center: -80% Market Factor
  - c. Wheaton / Riddell District Center: -50% Market Factor
  - d. Wheaton / Sheridan District Center: -70% Market Factor
  - e. Oyster Bay Neighborhood Center -80% Market Factor
  - f. Bay Vista Neighborhood Center Site: -10% Market Factor
  - g. Manette Neighborhood Center: -60% Market Factor
  - h. Perry Avenue Neighborhood Center: -80% Market Factor
  - i. Sylvan / Pine Neighborhood Center: -90% Market Factor
  - j. Haddon Park Neighborhood Center: -90% Market Factor
  - k. Harrison Employment Center: -50% Market Factor
9. *Converting square footage into Employment Capacity: Employment Density:* To convert building square footage into employment capacity is to divide square footage capacity by employment density assumptions (square footage of building required per employee). Employment density has been allocated at 3 jobs / 1,000 square feet of commercial space.

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<sup>5</sup> The market reduction factor is derived from the 2004 Comprehensive Plan Land Use Appendix - Current Conditions, Development Constraints



# PLANNING DEPARTMENT



# MEMO

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**To:** Katrina Knutson, Senior Planner  
**From:** Alyse Nelson, Associate Planner  
**Subject:** City of Poulsbo's 2014 Land Capacity Analysis Variations Memo  
**Date:** December 9, 2013

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This memo documents the City of Poulsbo's variations to the Land Capacity Analysis (LCA) methodology for the properties located within the city limits and the city's unincorporated urban growth area (UGA).

Generally, the City of Poulsbo follows the established Kitsap County land capacity methodology utilized by Kitsap County. There are several areas where the City of Poulsbo adjusted the methodology or variables to account for the City's particular local circumstances. This memo will describe the areas where the City of Poulsbo varies from the LCA methodology.

The City of Poulsbo follows the Kitsap County methodology with the following variations:

*For vacant and underutilized parcels:*

- Apply a 26.5% Critical Areas reduction factor. In 2008, the City reviewed the impact of its new Critical Areas Ordinance on land supply and determined that a 26.5% reduction factor was appropriate within the city limits and the UGA. This figure was derived based on a parcel-by-parcel GIS analysis.
- Apply the maximum density range in each of the City's residential zoning districts – 5 dwelling units/acre in the Residential Low zone, 10 dwelling units/acre in the Residential Medium zone, and 14 dwelling units/acre in the Residential High zone. The City's original Urban Growth Area was sized using the maximum density range. While there is

no way to guarantee that projects will develop at maximum density, the City's development trends have shown that net densities achieved in the Residential Low zoning district (which makes up most of the City's residential development) support utilizing the maximum density figure. The City will continue to monitor this trend – the City may see a reduction in densities in future Buildable Lands Reporting due to new code amendments such as Planned Residential Developments that make it more difficult to achieve bonus densities. For the present analysis, however, the City has determined that it is appropriate to continue applying maximum density as it did during the initial Subarea Plan that established its UGA.

- A 2.3 average household size is applied for each of Poulsbo's residential zoning districts. According to the 2010 Census, the Poulsbo average household size is 2.3 people per household. This has been applied across all the zoning districts.

*For underutilized parcels:*

- In step 1 of the LCA, Poulsbo also removes any residential parcels with approved commercial uses as “exempt” parcels not likely to redevelop during the planning period.
- In step 1 of the LCA, Poulsbo does not remove any underutilized parcel less than ½ acre. Rather, we remove parcels that are less than 2 times the minimum lot size of the residential zoning district (i.e., parcels less than 15,000 square feet in the Residential Low zone, parcels less than 8,000 square feet in the Residential Medium and Residential High zone).