Land Use Appendix

Table of Contents

Current Conditions

The dimensions and nature of current land uses, including information on vacant land for various uses, existing development constraints, and social and economic factors that exist today, are all factors that must be understood before a community charts it future course. The following subsections provide an overview of these key conditions.

Current Land Use: 2015

2014 Buildable Lands Summary

The City of Bremerton covers 30 square miles (19,000 acres). There are 5,000 acres in residential designations, 1,000 acres are commercial, 4,000 acres are industrial, and 7,000 acres are public lands.

Population at the end of 2012 was 39,650 according to Washington Office of Financial Management (OFM) estimates. Quick calculation reveals that overall residential density is approximately five persons per acre. According to the *Buildable Lands Analysis,* recent development has been at that density at approximately 5.07 persons per acre (*Kitsap County Buildable Lands Report, 2014*).

It is additionally estimated that there are approximately 225 acres of commercial land that is available in 2012 for future development.

It should be noted that significant portions of each category of land is vacant or underutilized. The Buildable Lands Analysis estimated that there were approximately 1,482 net acres of vacant or underutilized residential land in the city in 2012. These lands were designated in both single family and multi-family categories.

While estimates of vacant industrial properties are more difficult to develop, it is clear that there are significant vacant industrial lands, at least, within the current City. For example, over 2,500 acres of vacant industrial land is located in the western portions of the City alone (Puget Sound Industrial Center – Bremerton).

Development Constraints

Environmentally Sensitive Areas

Bremerton has adopted a Critical Areas Ordinance that defines, addresses and regulates aquifer recharge areas, fish and wildlife habitat conservation areas, flood hazard areas, geologically hazardous areas, wetlands, and stream corridors. This ordinance is intended to ensure that the City's remaining critical areas are preserved and protected and that new development in and adjacent to these areas will be carefully managed to avoid further degradation. While viewed as development constraints, these regulations will ultimately enhance new development and reduce long-term problems. The regulations influence will be felt least in the already developed portions of Bremerton. The greatest opportunities for impact will be on larger sites in less-urbanized West Bremerton locations. Even there, development can be planned and adjusted to shift densities away from sensitive areas without losing development potential.

Watershed Lands: Bremerton's primary source of water is a carefully managed surface system along the Union River Watershed. Over time the City has acquired approximately 3,100 acres of land to protect that water resource and will continue to strengthen it. These lands are currently planned and zoned for watershed use and not available for other types of development.

Utility Owned Lands: Adjacent to the City watershed in southwest Bremerton are approximately 5,000 acres of mostly forested lands owned by the City's Utility. Some of the non-watershed lands are used for recreation (Gold Mountain Golf Course) and some are needed for the composting and disposal of bio-solids from the City's sewage treatment plant. This practice serves the dual purpose of disposing of the waste product while enhancing tree growth and wood production.

Shorelines: Bremerton has over 20 miles of lake and marine shoreline, including Kitsap Lake, Dyes and Sinclair Inlets, and the Port Washington Narrows. These are important natural, scenic, aesthetic and recreational resources. Although most shoreline parcels have already been developed, the overall impact of this program on development will be minimal. We do expect additional infill and redevelopment along our shorelines. The provisions of the Shoreline Master Program will help ensure that those activities will enhance with no net loss of environmental functions, rather than damage, our shoreline environment.

Steep Slopes and Hillsides: Bremerton has very little flat land. It was built on hilly terrain surrounded by waterways and, in some locations, steep marine bluffs and hillsides. Again, since most of the urban area has already been developed, these constraints are not expected to seriously affect new or infill development. Most areas have street access and utilities and, since the hills and slopes provide excellent and highly desirable view sites, they tend to be considered valuable resources rather than development obstacles.

Existing Development Patterns: Existing structures and development patterns may be the greatest development constraint. Bremerton's housing stock consists of many small older homes (median age of homes in Bremerton are 65 years). Many of the lots are large enough to place an accessory dwelling unit on them, are large enough to further subdivide, or are suitable for redevelopment. However, the presence of existing structures on the potential redevelopment site, or deteriorating structures nearby tends to raise the cost of development, affect financing, and/or reduce the desirability of the site to potential buyers or tenants. Bremerton will continue to support the improvement of the overall condition of structures and properties throughout the City.

Market and Competitive Factors: Although Bremerton has a sufficient supply of zoned land area to accommodate the additional residents projected by this Plan, a number of market factors stand in our path. Among the obvious are regional or national economic conditions, availability of financing for new construction and home-ownership, weak "curb appeal" of available sites, availability of business-related financing, strength of the job market, etc. Some constraints are more directly related to the Land Use Element, including:

Willingness to Convert: Many of Bremerton's oversized lots and other vacant infill sites are being enjoyed by their owners for yard areas, additional off-street parking or RV storage, to protect views, etc. These yards are valuable and not readily given up by many resident home-owners. However, investors may be more financially-inclined and willing to maximize the development potential of these properties. So, while the City encourages home-ownership, it also encourages property investment, new ideas, infill, redevelopment and neighborhood improvement. The conversion process is slow and favors vacant lots over underutilized lots. Bremerton has many more of the latter.

Competition and Development Pressures: Bremerton has an extensive public infrastructure, zoning, an efficient permitting process, development incentives, all the conveniences and services of a central city, and a land use inventory that shows where the development opportunities are. We are in position and ready to grow.

There are reasons why Bremerton is not yet growing as intended. The city is surrounded by rapidly growing urban development in unincorporated areas that also have urban services. Kitsap County is one of the fastest growing counties in Washington and development pressures are great. However, development is often easier and less expensive when done on the urban fringe or in rural areas where public sewer and water systems aren't required and road and other standards are considerably lower than in urban areas. Those areas are also more likely to have larger vacant parcels available, less expensive land, and occasionally urban services to further stimulate growth.

Socio-Economic Considerations

The "profile" presented in the Housing Element of this Comprehensive Plan explains the social and economic diversity that is characteristic of the Bremerton community. This diverse landscape shapes the Land Use Element.

Health and the Built Environment

Provided by Kitsap Public Health District for consideration for all Land Use decisions.

"Healthy community design is about planning and designing communities [in ways that] make it easier for people to live healthy lives. Healthy community design encourages mixed land uses to bring people closer to the places where they live, work, worship, and play. Doing so reduces dependence on cars and provides affordable housing, good bicycle and pedestrian infrastructure, space for social gathering, and access to transit, parks, and healthy foods." Centers for Disease Control and Prevention

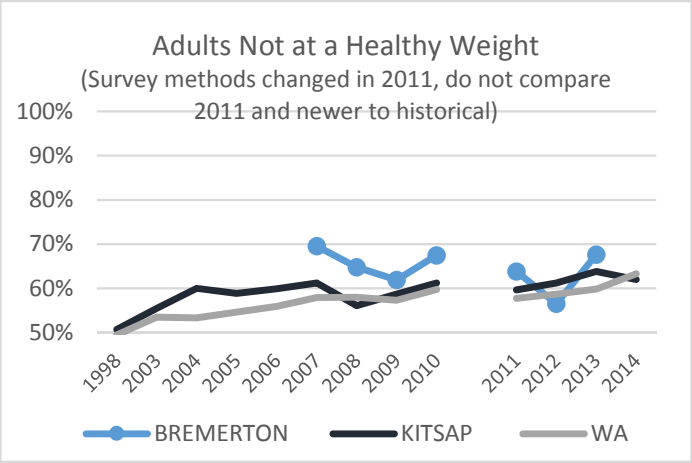
Chronic disease is the leading cause of death and disability in Kitsap County and the U.S. According to the Centers for Disease Control and Prevention, almost 1 in 2 adults in the U.S. has at least one chronic disease. Approximately 75% of U.S. health care spending is used to treat patients with chronic diseases.

Many risk factors, such as not enough physical activity, poor nutrition, and smoking, can lead to risk conditions such as obesity, high cholesterol, and high blood pressure that can result in in chronic diseases like heart disease, stroke, diabetes, etc.

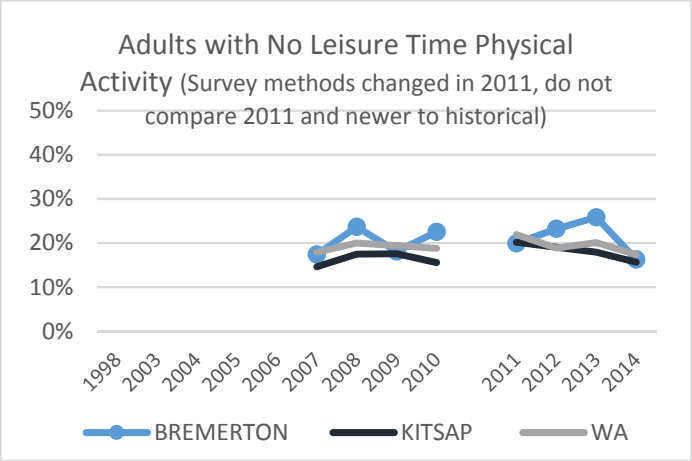
Residents of Bremerton need access to healthy food retail, places in which to safely exercise, and ways of getting around and accessing services without their cars. It is critical that we recognize the changes that need to be made to our environments, both natural and man-made, in order to improve the health and wellbeing of our community. This health resource guide focuses on the importance of healthy food access and active living, and the relationship between these attributes and chronic disease prevention.

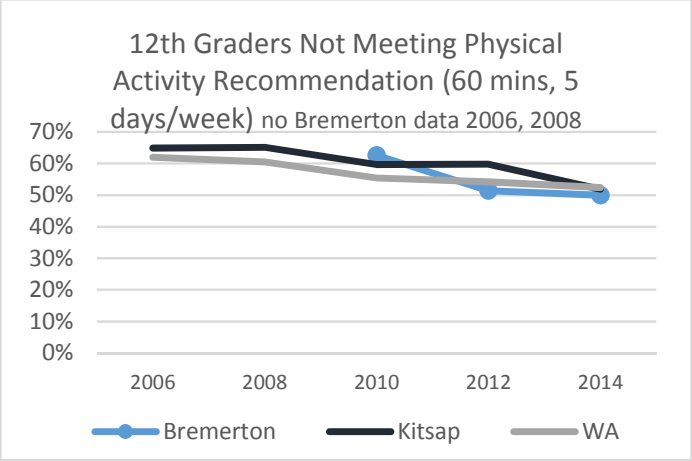
Currently we are seeing an increase in overweight and obese adults, with almost two thirds of Bremerton residents overweight or obese (See Health Figure I). Furthermore, over 20% of adults get no leisure time activity and over 50% of 12th graders are not achieving the recommended daily physical activity recommendations (See Health Figure II.). In Bremerton 70 percent of Bremerton adults eat less than the recommended 5 fruits and vegetables per day (See Health Figures III a. and III b.). Additionally, 43 percent of adults in Bremerton have been told by a medical professional that they have high cholesterol (see Health Figure IV.) and 36 percent have been informed that they have high blood pressure.

Health Figure I

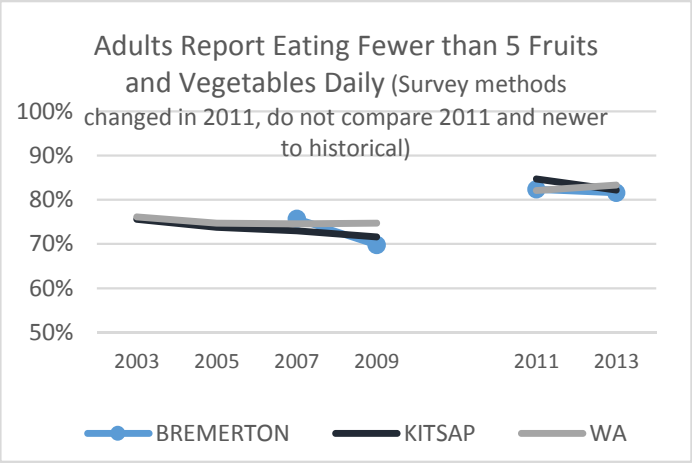


Health Figure II

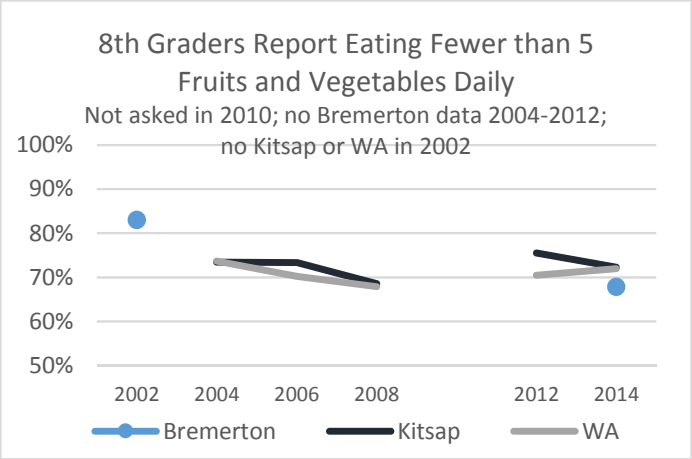




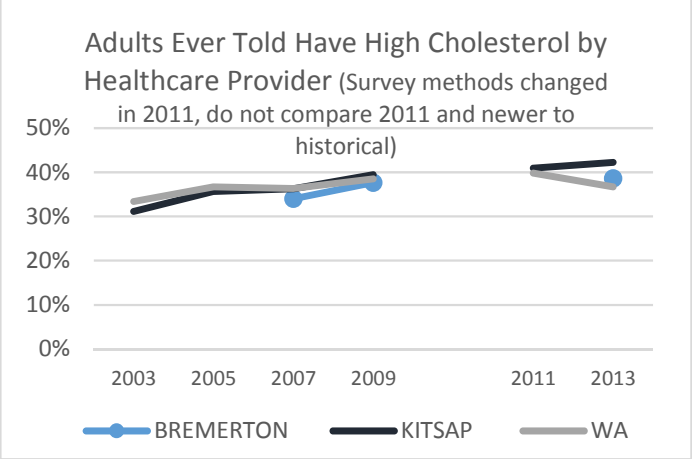
Health Figure III a



Health Figure III b



Health Figure IV



In this section, the aim is to show the connections between access to healthy food and physical activity and our community's long-term health, and provide correlation between this important topic and the Comprehensive Plan which will create a strong start to helping all residents of Kitsap achieve fuller, healthier lives.

Active Living

Two main sources of physical activity in our day to day lives are *active transportation* and *active recreation*.

Active transportation is the use of walking, biking or public transport instead of using a private car or other personal motorized means. Active transportation can be the part of a trip during which one is walking to a bus stop or from a car to a home or office.

Active recreation (for our purposes) refers to outdoor recreational activities, such as organized sports, playground activities, or exercise for the purpose of being active and not for the purpose of getting from one place to another.

Physical activity is a known determinant of health. It is understood that if an individual participates in physical activity on a regular basis (150 minutes of moderate activity per week for adults and at least 60 minutes daily for children) that it will reduce an individual's risk of respiratory illnesses, cardiovascular conditions, obesity and diabetes.

Increasing access to opportunities to be physically active for all residents and incorporating inviting design and accessible facilities has shown to result in more people routinely exercising. By implementing policies in our Comprehensive Plan that promote the improvement of biking and pedestrian facilities, public transportation, proximity to services, and open spaces and parks, we increase the likelihood that physical activity in our communities will increase. An increase in physical activity through active living will improve our community's overall health and ultimately lead to less chronic disease and a more vibrant city.

The Impact of Policy on Active Living

There are many opportunities within a long term plan to set policy that will support bicycling and walking as potential forms of daily transportation and recreation. Good transportation is vital for access to activities and essential services that are needed to fully participate in our society. In automobile dependent communities those who do not have the ability to drive or have access to autos can be at a great economic and social disadvantage. Many experts note that approximately 30% of all-age populations do not drive for various reasons. Communities without adequate quality and quantity of transportation, including facilities for bicycling and walking, place residents at a distinct disadvantage when trying to access jobs, school, medical services or other daily needs. (ALTA)

Land Use

Within the Land Use and Transportation chapters of this Comprehensive Plan Update, there are implications for health in policies regarding how many people live in certain places, how connected people are, how many services are provided in each unit of land, and the ease with which people can travel from one type of land use (*residential*) to another (*commercial*).

When addressing land use policies there are a variety of ways in which planning policies impact residents' access to active living, most of which address three main issues; *connectivity, mixed use*, and *density*.

Connectivity is the extent that roads and streets are connected, allowing for direct travel between them.

Mixed use is the ratio of residential and commercial use within a set land unit. For instance, a mall is considered *commercial* whereas a shop, or row of shops, with apartments above would be considered *mixed use*. Combining the uses of land helps diminish the distance an individual needs to travel between where they live, work, and access good and services. This type of use makes it more likely that people will walk, bike or use transit options to get where they need to go, supporting a more active and healthier lifestyle.

Density is **t**he number of units (families or individuals) living on a portion of land, usually an acre. Density in this Comprehensive Plan is categorized into Low Density Residential (LDR) Medium Density Residential (MDR) and Multifamily Residential (MR).

When there are higher densities of people and mixed use of residential and commercial destinations there are often shorter distances to travel, making it more likely that individuals will make trips from one place to another by biking or walking. Furthermore, when there are safe and accessible active transportation options, there is an increase in opportunity for physical activity to be incorporated into someone's regular routine.

Transportation has a significant impact on our health and well-being. Most transportation systems in our region do not facilitate or support biking and walking and tend to focus on the movement of vehicles, not people. By increasing residents' opportunities to be physically active while transporting themselves between work, home and daily activities, we provide a platform for an increase in physical activity that decreases the likelihood of chronic disease prevalence in these communities.

Access to transit is often associated with active transportation due to the distance between residence, or business and the transit hub. The more an individual takes public transportation the more physically active they are as a result of the need to walk or bike between transit and destination. Additionally, transit provides connections to the broader community and increases the opportunity to access destinations throughout the larger region. When homes, business and other destinations are located near transit, there is less reliance on motorized vehicles for transportation, and a greater opportunity for active transportation modes to be used[1].

[1] Gresham, Appendix 49: Health through the Built Environment.

Three main barriers to active transportation are: long distances between origins and destinations, a lack of facilities within relatively easy access, and traffic safety concerns. The ways in which we try to combat these barriers in transportation policy are to ensure that non-motorized access and safety is incorporated into jurisdictions' transportation plans, encourage and support the integration of bike lanes and pedestrian paths in as many areas as possible and to ensure that non-motorized transportation means are accessible to all residents.

The presence of parks in close proximity to all residents increases the likelihood of physical activity and good health. Parks, natural areas, and recreation facilities provide individuals and communities with personal, social, economic, and environmental benefits that contribute to a higher quality of life[2]. Parks provide for physical activity, connections to greenspaces, quiet places for reflection, and an enhanced sense of community derived through public spaces and community events. Parks also provide connections within and between neighborhoods and act as community gathering spaces. Many parks provide community gardening space, providing individuals the opportunity to grow their own food.[3]. Additionally, studies show that residents who live within walking distance of a park are 25% more likely to achieve recommended minimum weekly levels of exercise.[4] By implementing policies that support the availability of parks we ensure that as development continues in Bremerton that new and existing parks, trails and open spaces are equitably accessible allowing for higher rates of activity for all.

Healthy Food Access

The food we consume, and how accessible it is, has direct effect on our community's health. The more local, fresh produce an individual eats, and the less fast food one consumes, the better their health. When a community has healthy food access, reports show lower diet-related diseases and obesity.[5]

There are multiple factors that contribute to the accessibility of healthy local food, and they include the *production*, *distribution*, and *retail availability* of such food. By supporting our local food system we work to encourage and increase the ability that our community has to provide healthy local food for all residents.

Production is the process by which raw food ingredients, such as nuts, vegetables and grains, are transformed into prepared food products, such as peanut butter, soups and bread.

Distribution is the way in which food gets transported and delivered to retail sites, such as farmers markets, food banks, grocery stores and restaurants.

Retail availability addresses the number of grocery stores, markets, stands and restaurants at which one can purchase (healthy) food. This discussion refers to "food access" as the combination of the availability and affordability of high quality, healthy food in different settings.

Healthy food availability means healthy food is physically present on store shelves, in restaurants, farmers' markets, schools and organizational food facilities. This includes the affordability of healthy food, meaning that it is priced low enough to be purchased and consumed on a regular basis by all residents. Low affordability of healthy food can result in ***food insecurity***, a situation in which individuals' ability to acquire healthy food is limited or uncertain.[6]

[2] Parks and Recreation, Trails and Natural Areas Master Plan, City of Gresham, 2009.
[3] Gresham Appendix 49: Health through the Built Environment.
[4] Frank, Lawrence et. al. "Linking Objectively Measured Physical Activity with Objectively Measured Urban Form: Findings from SMARTRAQ." American Journal of Preventive Medicine. 2005.
[5] PolicyLink, The Food Trust. *Access to Healthy Food and Why It Matters.*
http://www.policylink.org/sites/default/files/GROCERYGAP_FINAL_NOV2013.pdf
[6] Bickel et al., Guide to Measuring Household Food Security, Revised 2000. Available at http://www.fns.usda.gov/fsec/FILES/FSGuide.pdf.

Planning for local food access is a growing topic of interest both locally and around the country. As called out by the Puget Sound Regional Council's Food Blueprints, 'supporting local food is important for the local rural economy, for community food security…for reducing the distance food travels from farm to table.' Local governments can play a significant role in supporting local agriculture, promoting public health, improving access to healthy and affordable food, reducing environmental impacts, and diverting food waste from landfills.'

Transportation, a critical component of distribution, can be costly when associated with perishable food transport and often causes healthier food to be unattainable in lower income and underserved communities. The aim of food related policies in this Comprehensive Plan is to provide all Bremerton residents with the opportunity to access healthy food options through the provision of better transportation, a more supportive and financially feasible production and distribution network and healthy affordable retail. By providing equitable access for Bremerton residents through proximity to healthy food options, we can improve individual eating options and reduce their risk for obesity and diet-related disease.

Currently, the retail environment in Bremerton consists of approximately 73 fast food establishments, 3 grocery stores, and a farmers market that occurs twice a week for three hours on Thursdays and three hours on Sundays from May to October. As of 2013, there were 2.4 supermarkets or other grocery stores per 10,000 residents and 9.8 fast food or convenience stores per 10,000 residents, over four times higher than the rate of available grocery stores (See Figure V). Additionally, in Figure VI, below, the areas of Bremerton that are designated as food deserts can be seen for low-income populations.

Health Figure V.

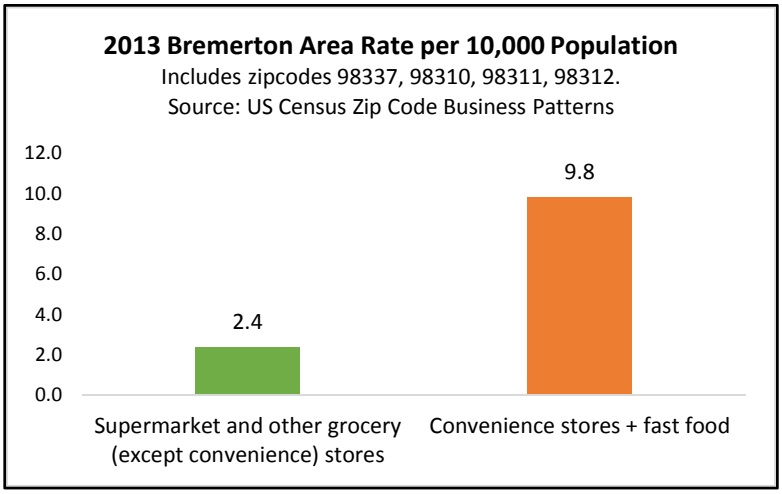


Figure VI

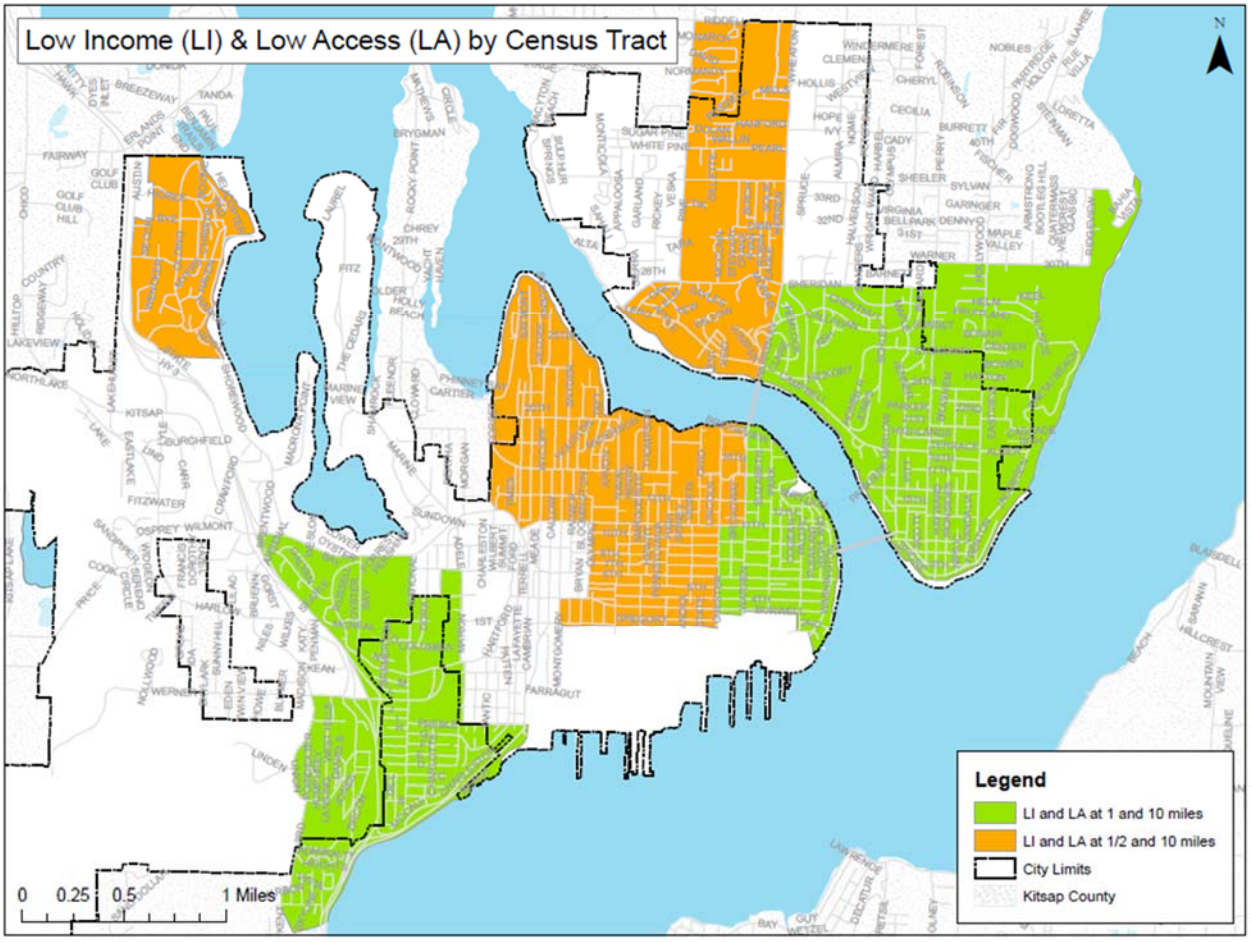

Low Income (LI) & Low Access (LA) by Census Tract
N
Legend
LI and LA at 1 and 10 miles
LI and LA at 1/2 and 10 miles
City Limits
Kitsap County
0 0.25 0.5 1 Miles

Figure VII.

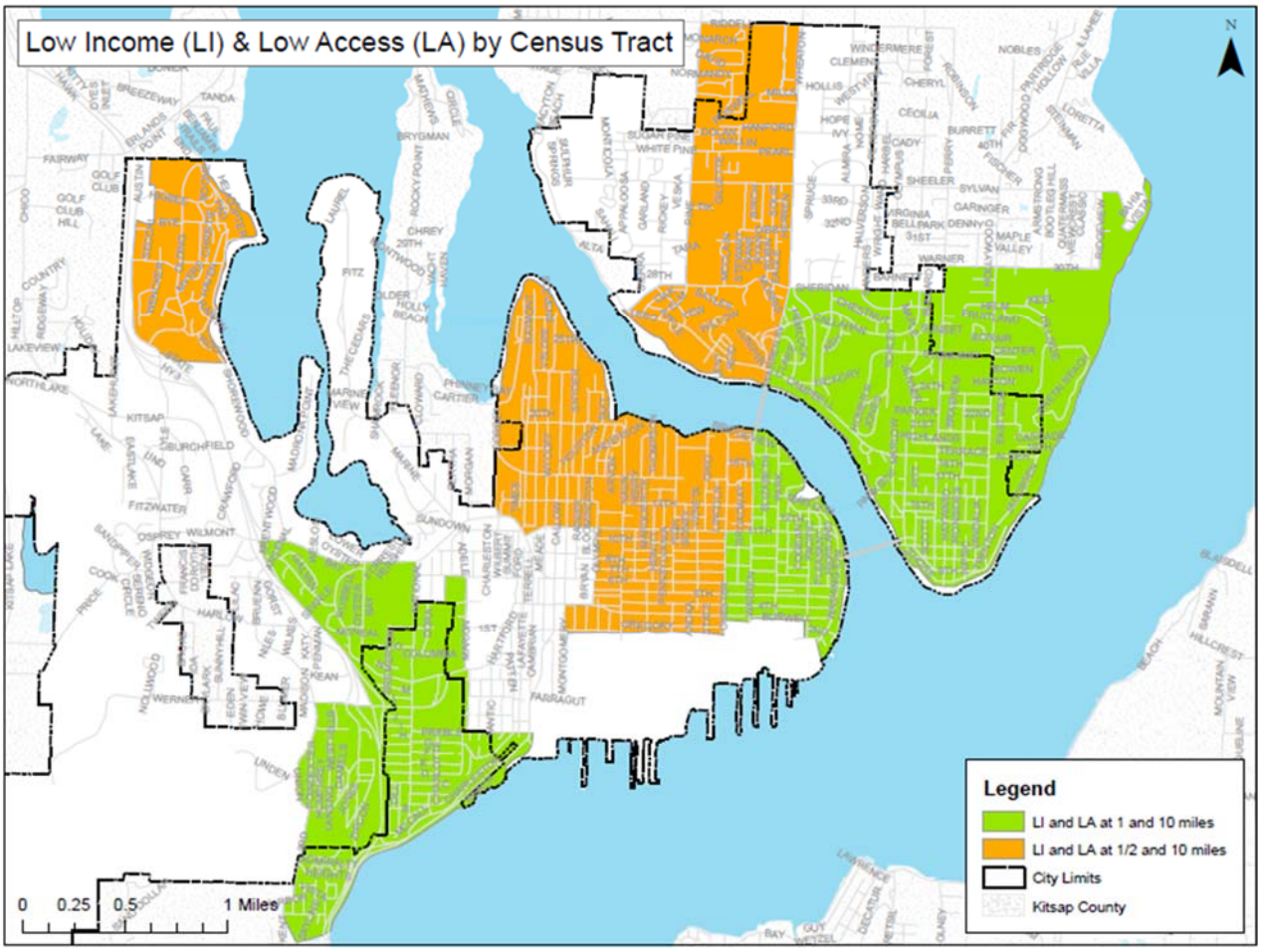
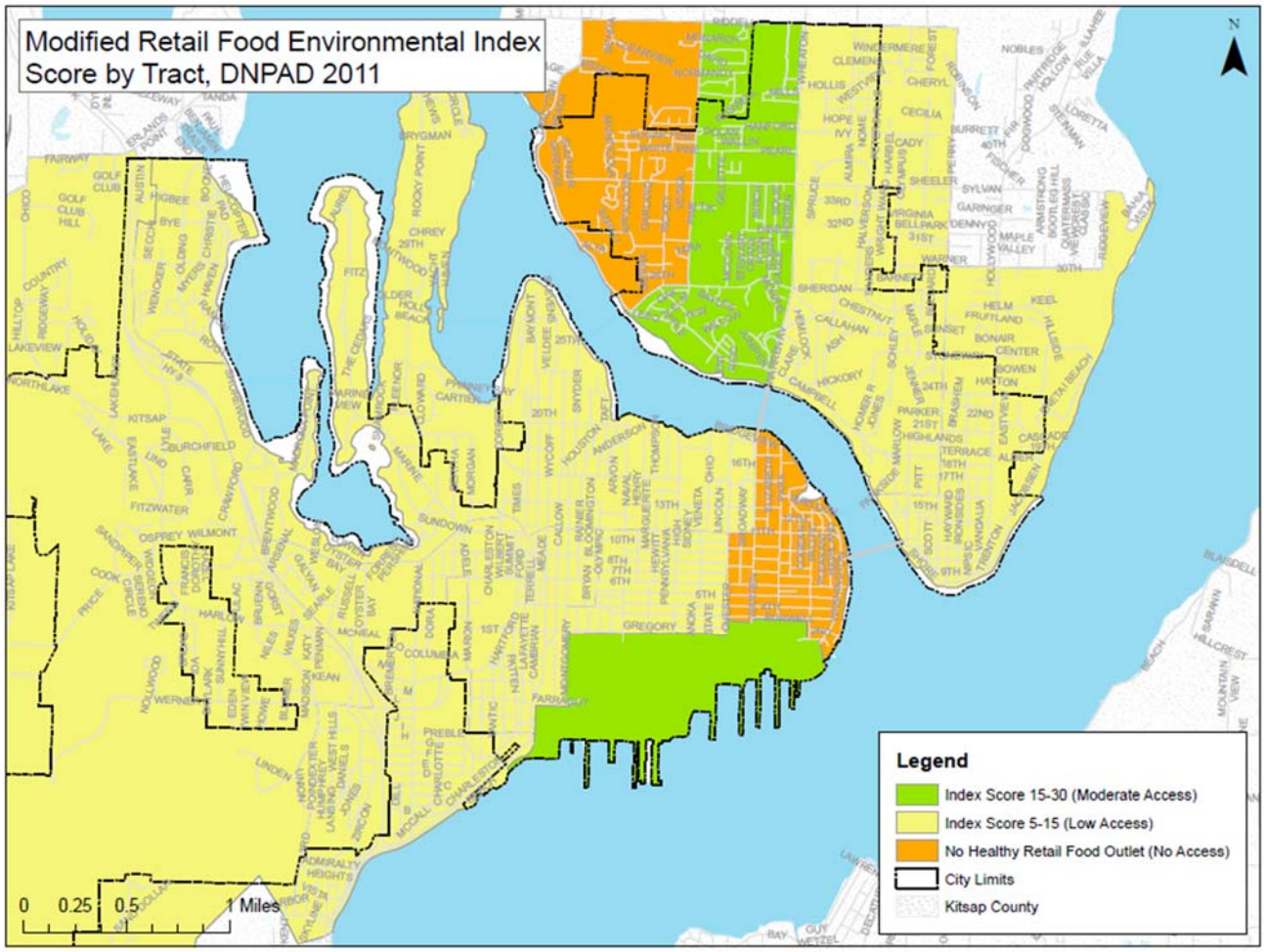

Low Income (LI) & Low Access (LA) by Census Tract
N
Legend
LI and LA at 1 and 10 miles
LI and LA at 1/2 and 10 miles
City Limits
Kitsap County
0
0.25
0.5
1 Miles

Figure VIII.



The Impact of Policy on Healthy Food Access

Healthy food policies in all three above-mentioned areas of the food system areas can impact the access and health of all Bremerton residents, through support for healthy food retail, supportive zoning for urban agriculture and school gardens and farmers markets, and prioritizing underserved areas.

Healthy food retail is beneficial for communities, creating more opportunity to access healthy foods, and subsequently healthier lifestyles, as well as supports the local economy. A presence of a neighborhood supermarkets is correlated with higher produce consumption and lower prevalence of overweight and obesity.[7] Three times as many supermarkets per capita are located in upper and middle income neighborhoods leading to limited access to heathier food options for lower income households who are

[7] CDC. *Healthier Food Retail: An Action Guide for Public Health Practitioners.*

less likely to own a car.[8] Policies that encourage equitable distribution of supermarkets, neighborhood healthy food stores, healthy food programs and increase access to healthy food for low income shoppers are all ways in which policy can enhance the support for consumer access. Additionally, whereas an increase in supermarkets has a positive impact on health, a large number of fast food establishments can have the opposite impact; individuals who eat fast food one or more times per week are at increased risk for weight gain, overweight and obesity.[9]

The promotion of healthy, local food products is good for health and business. When healthy products are promoted, consumers purchase these products, sales and demand of these products increase, and prices decrease.[10] Healthy food retail in the community also provides additional financial revenue and jobs. Increase local revenues: According to the United States Department of Agriculture, farmers' net revenue increases seven times per unit by selling locally and directly rather than in conventional markets. That revenue stays in communities and recirculates throughout the local economy.

Promoting local food production in Bremerton through zoning policy support for community gardens, green houses, school gardens, and vacant lot gardening are policy examples that support access. Local urban food production is a sustainable solution to the issue of food deserts (as seen in Figures VII and VIII). Communities that have implemented urban agriculture report that they consume more fruits and vegetables, reduce hunger, and increase awareness of healthy food.[11] Data reports that if youth grow their own vegetables, their vegetable food consumption increases and they report eating less processed foods.[12] Through healthy food access zoning, Bremerton has the opportunity to make an impact on the health of the community and generations to come.

http://www.cdc.gov.nccdphp/dnpao/state-local-programs/pdf/healthier-food-retail-guide-full.pdf

[8] Urban and Environmental Policy Institute. *Transportation and Food: The Importance of Access.* *https://www.accesskent.com/Health/ENTF/pdfs/TransandFoodAccess.pdf*. NACCHO. *Healthy Food Access.* *http://www.naccho.org/advocacy/positions/upload/13-04-Healthy-Food-Access-2.pdf*

[9] Urban Land Institute. *Intersections. Health and the Built Environment* *http://uli.org/wp-content/uploads/ULI-Documents/Intersections-Health-and-the-Built-Environment.pdf*

[10] PolicyLink. *Healthy Food, Healthy Communities.* http://www.policylink.org/sites/default/files/HFHC_FULL_FINAL_20120110.PDF. PolicyLink, The Food Trust. *Access to Healthy Food and Why It Matters.* http://www.policylink.org/sites/default/files/GROCERYGAP_FINAL_NOV2013.pdf

[11] PolicyLink. *Growing Urban Agriculture: Equitable Strategies and Policies for Improving Access to Healthy Food and Revitalizing Communities.* *http://www.policylink.org/sites/default/files/URBAN_AG_FULLREPORT.PDF*

[12] Puget Sound Regional Food Policy Council. *Food Policy Blueprints* *http://www.psrc.org/growth/foodpolicy/resources-topic/*

Projected Land Use Conditions

The projected conditions section describes the demands for land created by population and employment growth, and expected changes in social and economic conditions that effect land use.

Summary of Population and Employment Projections

The population and employment projections that drive this Plan provide the basis upon which other discussions of future conditions are built.

Population in Bremerton is expected to grow from approximately 37,700 in 2010 to 53,407 in 2036. Of the total new population of nearly 14,000 people, nearly 9,000, or half, are projected to be in the new neighborhood and district centers (including downtown). That equates to approximately 4,431 units within the Centers. The planning period for this plan is the twenty years between 2016 and 2036.

Over that same 20 year planning period the number of jobs is expected to increase approximately 18,800 jobs. Of the total increase of about 18,800 jobs, 13,000, or about 80% are expected to be provided in the various centers, including the downtown and the Puget Sound Industrial Center-Bremerton.

Land Demand

The population and employment growth summarized above creates demand for new homes, and new places of business and employment. One of the most basic – and fundamental – operations that this Comprehensive Plan achieves is a demonstration that the community has identified adequate land for this future growth and even has surplus area. This demonstration starts with making a projection of the dimensions of that future need. Calculation of future land need is performed in three basic areas, residential land, commercial land, and industrial land. The following section summarizes those calculations.

Calculation of Future Residential Land Need

The population projections employed in this plan anticipate that the 13,757 new persons (approximately 6,400 household units) expected in the community by 2036 will live in a variety of single family households and multi-family settings. The table below is derived from data in the Kitsap County Buildable Lands Analysis 2014 and illustrates the historic trends in this area.

Table LU-A
Single Family Housing Types Permitted in Bremerton, 2006-2012
Source data: Kitsap County Buildable Lands Analysis, 2014

Permitted Urban Single Family Densities by Zone Type	Zoning	Count of Applications	New Dwelling Units	Acres	Density
(Applied under 1988 Zoning Code)	Single Family-2 (SF-2)	2	2	0.59	3.39
	Single Family -3 (SF-3)	3	3	0.52	5.77
	Medium Density Family (MF)	4	4	0.5	8
(Applied under 2005 Zoning Code)	Center Core Residential (CCR)	1	1	0.23	4.35
	Freeway Corridor (FC)	1	1	2.08	0.48
	Neighborhood Center (NC)	3	3	0.34	8.82
	Low Density Residential (R10)	297	297	59.66	4.98
	Bay Vista SAP	41	41	3.58	11.45
Grand Total		**352**	**352**	**67.6**	

Table LU - B
Multifamily Housing Types Permitted in Bremerton, 2006-2012
Source data: Kitsap County Buildable Lands Analysis, 2014

Permitted Urban Multifamily Densities by Zone Type	Zoning	Count of Applications	New Dwelling Units	Acres	Density
(Applied under 1988 Zoning Code)	Low Density Residential (DR)	2	6	0.57	10.53
	Medium Density Residential (MR)	1	3	0.14	21.43
(Applied under 2005 Zoning Code)	Bay Vista SAP	31	202	6.3	32.06
Grand Total		**34**	**211**	**7.01**	

The two tables above present the past – a historical backdrop. Out of the 563 units constructed during 2006-2012, 352 units (or 63%) was single family, with 37% multifamily structures. While the past certainly influences the future, the goals and policies of the 2004 plan and this update represent an attempt by the community to move to a new paradigm. In general, that change is focused on providing a moderate increase in the proportion of future housing opportunity in higher density types. The majority of these opportunities will occur in mixed use centers. In addition to this emphasis, the Plan's community goals and policies also indicate a desire to increase density in existing neighborhoods –both by encouraging smaller lots in new subdivisions, and also by encouraging infill of vacant existing properties. The net result, never-the-less will be small increase in overall density in traditional neighborhoods as well.

The following table provides calculation of residential land need for the City of Bremerton's population growth forecast over the twenty year planning period – approximately 14,000 persons. The table is based on four categories of residential uses. If the assumption is made in the "centers (SF + MF)" (single family and multifamily residential uses in centers combined) that 30% of the housing units category are single family uses and 70% are multifamily, it is possible to estimate that more than 50% of the new housing units anticipated by this calculation are in single family types. It is important to note that even within a model that places nearly 60% of new housing units in centers (and nearly 55% of new population) an overall emphasis on single family housing types remains. In fact, the actual proportion of SF types increases over the historic pattern depicted by the data in Table LU-B on the previous page. This is consistent with community goals and policies calling for increased home ownership and supporting traditional neighborhoods, while it also addresses the community's desire to create a new urban experience and living environment - the ability to choose to live in the new mixed-use centers.

Table LU-C
Net Future Residential Land Need

Type	Density (du/ac)		Net Acres Needed		DU		% of total need	Household Size	Population	
	Low	High	Low	High	Low	High			Low	High
1. **Neighborhood (SF)**	5	7*	255	402	1,556	1,897	30.28	2.24	3,500	4,250
2. **Neighborhood (MF)**	8	18	28	94	500	1,000	9.97	2	1,000	2,000
3. **Centers (SF+MF)**	20	20	119	143	1,429	1,785	40.25	2.1	3,000	3,750
4. **Downtown (MF)**	40	40	25	31	2,000	2,250	17.95	2	4,000	4,500
	Total		**427**	**670**			***Total Pop***		**11,500**	**14,500**
							Centers Pop (lines 3&4)		7,000	8,250

*****While implementing zoning in the LDR designation may allow up to 10 du/ac, it is estimated here that overall density in that area will not exceed 7 du/ac by the end of the planning period

The result of the table above is a calculation of Net acres needed in the four residential housing categories used. In other words, the acres of land required to site the houses and apartments along with their related on-site improvements.

However, to calculate the number of Gross acres needed for residential development, allowances must be made for the proportion of land area that will be consumed by roads and streets, and portions of land that are not developable due to the existence of environmental constraints – so-called "critical areas". In Bremerton those proportions have been found to be approximately 15% and 17% respectively. Therefore, the gross land area needed for residential uses is larger than the NET area by a factor of approximately 32%. This document proceeds under the assumption that the actual residential land need is as follows on Table LU-D.

Table LU - D Gross Future Residential Land Needed		
Type	**Range of Net Acres Needed**	**Range of Gross Acres Needed***
Neighborhoods (SF)	255-402	336-531
Non-Center (MF)	28-94	37-124
Centers (SF & MF)	119-143	157-189
Downtown Center (MF)	25-31	33-41
TOTALS	**427-670**	**564-884**

*Net acreage plus 32% (per the *Kitsap County Buildable Land Analysis*, 2012)

Calculation of Future Commercial Land Need

Table LU - E Bremerton's Targeted Employment Growth Source: US Census, 2010; OFM ACS, 3-Year Estimate, 2012; and PSRC/ESD				
	2010 Jobs	**2012 Jobs**	**Growth Assumptions 2010-2036 Jobs**	**Growth Assumptions 2012-2036 Jobs**
Bremerton	28,440	28,167	18,509	18,782

In many ways the calculation of commercial land need is simpler than that for residential land. Employing widely accepted ratios of acreage per population, population growth projections can be converted to projections of need for commercial acreage. The commercial land need calculation below employs ratios of gross land area per population. The calculation is based on information supplied by the Washington State Department of Community Development in, *"Preparing the Heart of Your Comprehensive Plan, A Land Use Element Guide"* (WSDCD, April 1993). The ratios are different for the two primary types of commercial growth anticipated by this comprehensive plan. Those types are; 1) centers commercial, which assumes more compact commercial business employing less parking; and 2) non-center commercial, a more automobile-oriented model typically found along busy arterials in most American cities. Centers include downtown, district centers, neighborhood center, employment center, and Puget Sound Industrial Center – Bremerton.

Table LU - F Future Gross Commercial Land Needed				
Type	**Population Served**	**Acres/1000 population[1]**	**Net Acres Needed[2]**	**Gross Acres Needed**
Center Commercial	11,500	6.5	75	51
Non-Center Commercial	7,500	10	75	51
Total Population Growth	19,000			**102 acres**

1. Acres needed per 1,000 population derived from discussion of Washington communities found in, "Preparing the Heart of Your Comprehensive Plan, A Land Use Element Guide" WSDCD, April 1993, page 62-63.
2. Gross land needed equals net +32% per the *Kitsap County Buildable Land Report, 2014*

The city has the capacity with the proposed Land Use designations to serve the 102 acres needed to accommodate the 20-year employment growth. However, that number is conservative as Bremerton currently has many vacant buildings that can help absorb a portion of the growth.

In addition to an assurance that sufficient acres of commercial land are provided on the land use map and placed in appropriate locations, this plan addresses an additional concern; that a variety of sizes of commercial parcels be provided. It is recognized that a wide variance exists is this arena. In other words, while smaller businesses can locate in many areas of the City, including the new centers, at least some commercially designated parcels must be of sufficient size to accommodate larger types of businesses.

Calculation of Future Industrial Land Need

The calculation of future industrial land needed is similar to that for commercial land. The 1993 American Planning Association (APA) study also reported that, in the average American city, industrial land also amounted to about 11 gross acres per thousand population. Employing that simple ratio, it can be calculated that to accommodate the expected population increase of 14,000 persons, 154 acres (gross) of additional industrial land must be available. Once again the population associated with employment centers was not included in this calculation as there are no industrial lands associated directly with that population. It is not necessary to locate industrial lands in the community generally to accommodate this aspect of overall population growth.

In addition, the Puget Sound Regional Council (PSRC) conducted *An Industrial Land Analysis for Central Puget Sound Region*, March 2015 (http://www.psrc.org/growth/industrial-lands/). This regional effort reviewed PSRC's jurisdictions (King, Pierce, Snohomish and Kitsap counties) industrial lands for capacity and potential demand. The following table has been provided from that report.

Table LU - G
Employment Forecasts and Land Area, PSIC-Bremerton, 2012-2040
Source: PSRC's Industrial Lands Analysis, 2015

Job	2012	2040	2012-2040
Industrial	12,640	15,906	3,266
Non-Industrial	3,039	4,305	1,266
Total	15,679	20,211	4,532
Land Area			
Total Acres	5,526		
Vacant	2,414		

Forecasts for employment in the PSIC-Bremerton Subarea show that the majority of the growth (72%) is anticipated to occur in industrial jobs. This forecast reflects anticipated growth more than the redevelopment of existing industrial space since the subarea is currently largely undeveloped with a significant amount of vacant land, as well as forest lands and wetlands. It is also currently served by few transportation facilities. The 3,266 new industrial jobs could require 210 to 300 additional acres of land (built at a jobs density ranging from 700 s.f. to 1,000 s.f., per employee, which fits the land uses anticipated in the area.). Accommodating non-industrial job growth at modest densities for this area (300 s.f. per job, FARs of 0.5) would require an additional 17 acres of land. The 2,414 vacant acres could easily accommodate these forecasts with little change in development patterns in the area.

Summary of Additional Land Need

The following table summarizes the calculations of land need discussed in the preceding sections.

Table LU – F
Summary of Additional Land Needed

Type	Additional Land Needed (net acres)	Additional Land Needed (gross acres)	Underutilized/Vacant Land Provided by the Plan (net acres)
Non-centers SF	255-402	336-531	1150
Non-centers MF	28-94	37-124	350
Centers (SF + MF)	119-143	157-189	200
Downtown MF	25-31	33-41	50
Total Residential	**427-670**	**564-884**	**1,750**
Center Commercial	51	75	250
Non-center Commercial	51	75	350
Total Commercial	102	150	600
Industrial	105	154	2,500
Total acres Needed	**634-877**	**868-1,188**	**4,850**

Land Supply

This comprehensive plan must demonstrate that adequate land exists to accommodate the projected growth. To make this demonstration, the following section will compare the land needs discussed above with the designations depicted on the Land Use Map found in the Land Use Element.

Residential Land Supply

The land needs analysis above indicates that between 427 and 670 net acres of additional residential land will be needed over the next 20 years to accommodate the expected population increase. This estimate is comprised of two primary components, non-centers residential need and centers residential need. Of 14,300 new population, approximately 9,000 are intended to be accommodated in Centers, while the remaining 5,300 distributed as "infill" to non-centers locations.

Residential population in non-centers locations

The *Kitsap County Buildable Land Report, 2014* estimates that, in 2012, there were 840 net vacant residential acres in Bremerton. The Buildable Land Analysis also estimates that there was an additional 642 net acres of "underutilized" residential lands, as many lots within the City may be redeveloped at a higher use (such as a single family lot becoming subdivided).

If the 840 acres that are clearly available for locating residential uses is discounted by a **30% market factor** (described more in following pages)**,** it can be estimated that about 588 acres is likely to be available for residential development. By dividing the 588 acres into the 7,000 population and employing an assumed household size of 2.24 persons, it is calculated that by employing an average density of 7.5 units per acre the expected population can be accommodated on the available acres. This density is within the range assigned to the Low Density Residential land use designation in this Plan. During implementation of this comprehensive plan, care will be taken to assure that average density in new residential areas (outside of centers) in that range is enabled under zoning and subdivision regulations.

The availability of some amount of "redevelopable" residential land (the some portion of the 642 acres referenced in the Kitsap Buildable Lands Analysis and above) increases the level of confidence here that the expected population will be accommodated on available lands.

Note: A large proportion of the available lands employed in this calculation are currently designated for low density residential, with a relatively small portion of medium to high density residential uses. However, this analysis does consider that some areas have been redesignated to higher density residential land to accommodate existing nonconforming uses.

In Sum, the calculations discussed above demonstrate that there is sufficient capacity on existing lands outside of centers to accommodate the expected increase in population assigned to those areas. While the demonstrated capacity is at the low and of the range of need calculated in this Plan, it must be noted that the number employed uses a significant market factor. In addition, it is known that there is a high amount of excess capacity available in centers that would be able to accept additional residential growth (see discussion below). This acts as "market factor". This is more fully explained in the following paragraphs.

Residential population in centers

The population projection employed by this Comprehensive Plan was developed under an assumption about the potential population accommodation of centers as designated and conceived by the Plan. In other words, once a community decision to employ the centers concept was arrived at, and once the potential centers were identified, sized, and assumptions about densities and mixes of uses in each center were developed, these factors were employed to calculate population accommodation potential. In addition, full build-out population of each center is tempered by assumptions that much less than full potential build-out will occur during the current 20-year planning period. The population accommodation assumptions employed for centers in this plan represent only 20-50% of the total potential population in any given center.

As the assumed proportion of potential full build out of each center is limited as described above, it is also understood that, in effect, a "market factor" is built into the amount of land truly available in the designated centers. Depending in the particular center that market factor ranges from 50% to 80% (or the inverse of the build out assumptions employed).

Given the methodology described above, it can be easily stated that the centers-related proportion of overall population increases in the City during the 20-year planning period are accommodate by design.

Commercial Land Supply

Vacant commercial land need is calculated in two major categories, centers commercial and non-centers commercial. These needs are calculated at 51 acres each (as described earlier in this appendix)

Centers commercial land is calculated. This indicates the proportion of each mixed use center that that is expected to be available for commercial uses. Those lands total 600 acres. This number exceeds the amounted needed (102 acres). This excess is attributable to the expectation that not all of the available commercial land in centers will be built-out during the initial 20-year planning period. This excess is related to total full build out potential for each center in exactly the same manner as that for population and residential land.

In other words, commercial land "market factors" for centers are also in the 50% to 80% range as discussed previously.

The non-centers commercial land need is calculated at 51 acres. An estimate of vacant commercial land outside of centers designations was performed by City staff using GIS technology and aerial photography. That estimate reveals that there are approximately 615 acres of such land designated, with approximately 120 acres available for development. This, once again exceeds the calculated need.

The issue of parcel size is crucial in such calculations and discussions. Commercial development occurs at a variety of scales. It is important that at least some commercial properties are of sufficient scale to accommodate larger stores and commercial establishments. The City analysis indicates that several larger parcels are available in or near the Wheaton/Riddell and Wheaton/Sheridan District Centers as well as within the designated employment center. While these western areas are formally designated for industrial uses, the employment centers designation also calls for mixing commercial (and residential) uses.

Industrial Land Supply

The land needs analysis in the previous section indicates that approximately 154 new acres of vacant industrial land is needed within the twenty year planning period to accommodate the expected population increase. All three scenario maps indicate large tracts of industrial designations in the western areas of the City. Of the approximately 3,700 total acres in PSIC-Bremerton and the City's additional industrial land, 2,500 acres is currently vacant.

Table LU – G Estimates of 20 Year Population and Employment of Centers and Noncenters					
	Total Acres	Avg. Res. Density (du/ac)	Sum of Population (People)	Sum of Dwellings (Households)	Sum of Employment (Jobs)
Centers*					
Downtown Regional Center (DRC)	138	40	4,355	2,188	3,463
District Center – **Wheaton/Riddell**	94	20	1,910	909	670
District Center – **Wheaton/Sheridan**	77	20	1,288	613	318
District Centers – **Charleston**	125	20	489	232	124
DCC Totals			3,687	1,754	1,112
Neighborhood Center – **Manette**	19	15	106	51	50
Employment Center (EC)	82	40	750	350	450
Bay Vista	73	20	550	255	70
East Park	58	15	320	150	20
Puget Sound Industrial Center-Bremerton	3,072	-	-	-	7,777
Non Centers					
Freeway Commercial (FC)	324	0	0	0	1075
General Commercial (GC)	273	30	450	210	825
Neighborhood Business (NB)	18	15	30	15	35
Higher Education (HE)	47	20	90	190	76
Industrial (I)	390	0	0	0	1,525

Further analysis on modeling and growth targets can be located within the 2016 File.