



CITY OF  
BAINBRIDGE ISLAND

**CITY OF BAINBRIDGE ISLAND  
PLANNING COMMISSION MEETING  
& PUBLIC HEARING  
THURSDAY, APRIL 14, 2016  
6:00 PM - 8:30 PM  
CITY COUNCIL CHAMBER  
280 MADISON AVE N  
BAINBRIDGE ISLAND, WASHINGTON**

- 6:00 PM CALL TO ORDER  
Call to Order, Agenda Review, Conflict Disclosure
- 6:05 PM REVIEW AND APPROVAL OF MINUTES  
February 11, 2016 Meeting
- 6:10 PM PUBLIC COMMENT  
Accept public comment on off agenda items
- 6:15 PM AQUACULTURE LTD. SHORELINE MASTER PROGRAM  
AMENDMENT  
Public Hearing
- 7:00 PM PUBLIC COMMENT ON COMPREHENSIVE PLAN UPDATE
- 7:10 PM 2016 COMPREHENSIVE PLAN UPDATE
- Water Resources Element
  - Housing Element
- 8:15 PM PUBLIC COMMENT ON COMPREHENSIVE PLAN UPDATE
- 8:25 PM NEW/OLD BUSINESS
- 8:30 PM ADJOURN

**\*\* *TIMES ARE ESTIMATES* \***

Public comment time at meeting may be limited to allow time for Commissioners to deliberate. To provide additional comment to the City outside of this meeting, e-mail us at [pccd@bainbridgewa.gov](mailto:pccd@bainbridgewa.gov) or write us at Planning and Community Development, 280 Madison Avenue, Bainbridge Island, WA 98110



**CITY OF BAINBRIDGE ISLAND  
PLANNING COMMISSION MEETING  
AND CONTINUED PUBLIC HEARING  
THURSDAY, FEBRUARY 11, 2016  
6:00 p.m.-8:30 p.m.  
CITY COUNCIL CHAMBER  
280 MADISON AVE N  
BAINBRIDGE ISLAND, WASHINGTON**

CALL TO ORDER - Call to Order, Agenda Review, Conflict Disclosure  
PUBLIC COMMENT - Accept public comment on off agenda items  
ORDINANCE 2016-01 TREE AND LANDSCAPING REGULATIONS - Continued Public Hearing (held January 21, 2016)  
PUBLIC COMMENT ON COMPREHENSIVE PLAN UPDATE  
2016 COMPREHENSIVE PLAN UPDATE

- *Revised Climate Change Guiding Principle*
- *Review DRAFT Transportation Element*
- *Debrief from Water Resources Element Workshop*

PUBLIC COMMENT ON COMPREHENSIVE PLAN UPDATE  
NEW/OLD BUSINESS  
ADJOURN

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**CALL TO ORDER - Call to Order, Agenda Review, Conflict Disclosure**

Chair Mack Pearl called the meeting to order at 6:01 PM. Commissioners in attendance were Jon Quitslund, Maradel Gale, Lisa Macchio, William Chester, Michael Killion and Michael Lewars. City Staff in attendance were Interim Planning Director Joseph Tovar, Senior Planner Jennifer Sutton, Water Resource Specialist Cami Apfelbeck and Administrative Specialist Jane Rasely who monitored recording and prepared minutes. The agenda was reviewed. There were not any conflicts disclosed.

**PUBLIC COMMENT - Accept public comment on off agenda items**

None.

**ORDINANCE 2016-01 TREE AND LANDSCAPING REGULATIONS - Continued Public Hearing (held January 21, 2016)**

The public hearing was continued at 6:02 PM. Planner Sutton recapped the action during the first part of the hearing during the January 21, 2016 meeting. Chair Pearl then continued by discussing full screen buffers and how much space was allowed between required trees. He went on to propose language that would protect not just the trees, but the whole buffer including the soil. Chair Pearl also asked Planner Sutton if the changes Charles Schmid had suggested had been

incorporated into the ordinance. She stated some of them had, but others were not and she had explained why in the Staff Memo to the Planning Commission dated February 11, 2016 which Mr. Schmid also received. Commissioner Chester began a discussion on whether or not the 50' buffer required along Highway 305 should allow averaging. Commissioner Macchio weighed in with arguments for not allowing buffer averaging along the highway.

### **Public Comment**

**Olaf Ribeiro, Citizen** – Thanked the Commission for incorporating his and Mr. Schmid's suggestions. He was pleased they had been included. Mr. Ribeiro asked about the penalties on page 8, paragraph 3 wanting some wording saying that if a tree was old growth or significant, value of the tree times 3 would be used for a penalty thereby protecting them more strongly. He did not feel it was applicable to say these types of trees were just like any other tree. Commissioner Lewars asked for clarification. Mr. Ribeiro asked if the wording could be changed to say "if an old growth or significant tree then it is no less than 3 times the value of the trees." He felt developers would then pay more attention to preserving significant and old growth trees. Ms. Sutton clarified the question and stated that after speaking with the City Attorney twice, she had been assured this particular section reads like a menu in that the City may apply the penalties and fines described including the greater financial penalty and/or replacement of the tree. Commissioner Gale asked if the concern was that old growth and significant trees were not called out specifically. Mr. Ribeiro agreed. Commissioner Pearl explained that during a site plan review process when a tree is supposed to be saved it will be assigned a value right on the site plan. If the tree is not protected during construction and dies, the developer has to pay 3 times the value of the tree without question. There would not be any alternatives. Mr. Ribeiro continued saying he would like more tree units required per tree removed. Mr. Ribeiro asked about the buffer required for the Sound to Olympics trail. Ms. Sutton stated that under the zoning codes, there was not a buffer required for a trail.

**Robert Dashiell, Citizen** – Had an editorial change to suggest on page 2, "Specific Zone Districts" reiterating Mr. Schmid's question about Section 2.a: "Preserve the greenbelts along designated scenic roadway corridors." Mr. Dashiell stated the only designated scenic corridor on the Island was Highway 305. He asked to put that information in the ordinance if that is the only scenic road on the Island. When he read the ordinance, he thought about going through the Grand Forest and wondered if that was a scenic road or not? He felt if there was only one, it should just be stated. Commissioner Macchio said she was hoping in the future more scenic roadways would be designated around the Island. Mr. Dashiell stated he did not know the criteria for designating a scenic roadway but when he read the ordinance, he was confused as to why it was not stated if it was the only one. He mentioned he was not opposed to having more scenic roadways. Commissioner Macchio said she could imagine a time in the future where more scenic roadways were designated and protected for additional scenic, aesthetic and ecological value that currently exist. Mr. Dashiell felt that was a fair answer and thanked the Commission for considering it. He went on to say Bainbridge Island was becoming a pretty expensive place to live and every time a requirement for building was added, the cost of housing was incrementally increased.

The public hearing was closed at 6:42 PM.

**Motion: I move that the Planning Commission recommend approval of Ordinance 2016-01 as amended in the discussion tonight and forward it to City Council.  
Gale/Lewars: Passed 7-0**

## **PUBLIC COMMENT ON COMPREHENSIVE PLAN UPDATE**

**Jane, Citizen** – She liked the changes that had been made and appreciated the comments EcoAdapt had made on the Guiding Principle for climate change. She wanted to suggest that Guiding Principle 7 state something along the lines of, “Reduce greenhouse gas emissions generated by Island residents and businesses whether they are produced on the Island or externally.” She thought they could not put their heads in the sands and only worry about things that were produced here but needed to realize that what they used also made pollution elsewhere and residents needed to be responsible and adult about that. Regarding Guiding Principle 7.1, she thought there needed to be more numbers so it was specific and clear as to what levels they were reaching for. Jane felt that having percentages and end result numbers would make it clearer without citizens having to do the math. She asked that the word “encourage” be removed from Guiding Principle 7.6 and replaced with “new development needs to be durable, low impact, energy efficient...” thinking it might be clearer. Commissioner Killion asked her to clarify who she meant by “we” when she spoke about emissions produced on or off the Island. Jane replied energy use and that the “Island” needed to be more responsible about their energy emissions. She continued by saying everyone should be more mindful of all the ways they consume products. She felt when it came to climate change, they needed to assess how they were living their lives in general as well.

**Robert Dashiell, Citizen** – Stated he would send written comments and then referenced page 5, subparagraph p of the Transportation Element entitled “Stormwater.” Mr. Dashiell read the passage referenced then said he had followed Stormwater many, many years and gone to school to study it. He felt Stormwater had not changed much and asked to have the word “exponentially” struck. He thought the only time it was increased exponentially was when there was a project like Winslow Way. Mr. Dashiell said there was a move afoot to increase the Stormwater fees of the City and that word would add fuel to the fire. Chair Pearl felt the whole thing seemed like an editorial comment that was not necessary at all. Mr. Dashiell agreed. Commissioner Macchio suggested the phrase “Stormwater management is an important environmental aspect.” Mr. Dashiell then brought up Policy TR 2.3 “Sidewalk Facilities,” stating one of the things he noted when walking in Winslow was the very poor illumination of sidewalks. He said he walked from the library to downtown on a rainy night and when cars were coming at him, he could not see the sidewalk and the mailboxes embedded in the sidewalk were a hazard. His walking companion actually walked into one because it was not visible. He felt the same thing existed on Ericksen Ave when leaving the ferry terminal and walking north. It was completely black out there, so much so that driveway cuts are not visible, so he would like to see something in there for proper illumination. Mr. Dashiell stated he would send the rest of his edits/comments to the Planning Commission in writing.

**Bob Bosserman, Citizen** – Commented on adding a Principle about reducing climate change and that it was hard for some environmentalists to think about how to implement or fashion a response to a value when considering all the things the Planning Commission considers. If you talk about developing more housing on Bainbridge Island and also about mitigating greenhouse gases, you figure out ways to enhance the transportation for those people in plans that are presented for buses and zip cars, etc. Practically speaking, you have to recognize that Americans do not walk a lot so when you plan a development in a certain area and you say it’s a walkable community, there was a

question there. Another question would be parking and cars that come in and add to our carbon footprint and greenhouse emissions. It's not that you just have a guiding principle but it's how that will translate into the actions you take and proposals you evaluate and how you go about evaluating them. Commissioner Pearl responded that implementation came at a later date. They knew they were writing policies in an ideal situation and that what they could do about them would be limited by many factors but that would come later.

### **2016 COMPREHENSIVE PLAN UPDATE**

Discussion began with the revised Climate Change Guiding Principle. Mr. Tovar presented Commissioner Gale's suggested wording combining Guiding Policies 7.1 through 7.3 into one policy. Commissioner Gale expounded further on her draft stating she thought to put the policies relying on collaboration with neighboring jurisdictions together into one policy. Commissioner Macchio wanted to see stronger language stating that the City "will" create and do specific things and not just "encourage" which would not require anything. She went on to state unless the Guiding Policy required great things, the City would not do great things. Conversation of the memorandum received by EcoAdapt detailing their recommended changes to the Environmental Element was led by Commissioner Quitslund. It was confirmed the Drafting Committee would continue working out the language in this Element.

The Transportation Element received another review. Planner Sutton provided each of the Commissioners with a copy of public comment received from "Squeaky Wheels" the afternoon of the meeting. Commissioners Macchio and Gale stated they liked their suggestions. Illumination of sidewalks for pedestrian safety and to help automobile drivers see pedestrians was discussed extensively. Kitsap Transit services became a topic of conversation with Planner Sutton offering to have Ed Coviello, Kitsap Transit's Community Planner, come and address some of the issues discussed.

The future work schedule for the Planning Commission was presented. Mr. Tovar then introduced Cami Apfelbeck to discuss the Water Resources portion of future work. Water well documentation was reviewed.

Consultant Joe Tovar reviewed the Comprehensive Plan meeting schedule.

### **PUBLIC COMMENT ON COMPREHENSIVE PLAN UPDATE**

Rick, Squeaky Wheels – Thanked the Commissioners for their consideration of the letter they presented. He wanted them to keep in mind that they were looking at details that would be addressed in level of service standards that were introduced and so they did not need to get into all the "what if" scenarios. They could be addressed as the process moved forward. Rick felt that if they could continue to work together on this they could create a really great community where the walkability, bicycling and traffic can coexist.

### **NEW/OLD BUSINESS**

None.

**ADJOURN**

Chair Pearl adjourned the meeting at 8:40 PM.

Accepted by:

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J. Mack Pearl, Chair

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Jane Rasely, Administrative Specialist

DRAFT

**ORDINANCE NO. 2016-06**

**AN ORDINANCE of the City of Bainbridge Island, Washington, relating to aquaculture policies and regulations; amending the City's Shoreline Master Program and amending Sections 16.12.030-1, 16.12.030-2, 16.12.040 and 16.12.080 of the Bainbridge Island Municipal Code (BIMC).**

**WHEREAS**, the City's Shoreline Master Program Update (hereafter "SMP") was approved by the Department of Ecology on July 16, 2014 and became effective on July 30, 2014; and

**WHEREAS**, on October 6, 2014 Bainbridge Alliance for Puget Sound; Association of Bainbridge Communities; and Coalition to Protect Puget Sound Habitat (hereafter the "Alliance") filed a Petition for Review with , Washington Growth Management Hearings Board (GMHB)(Case No. 14-3-0011); and

**WHEREAS**, the Alliance, by through its Petition, alleged that the City's SMP regulations relating to aquaculture were not consistent with the Washington State Shoreline Management Act ("SMA") and in conflict with certain sections of Washington Administrative Code ("WAC") Chapter 173-26;

**WHEREAS**, on November 5, 2014, the Pacific Cost Shellfish Growers Association ("PCSGA") moved to intervene in the above-described litigation in order to ensure that its interests not be impaired thereby; and

**WHEREAS**, at its December 9, 2014 regular business meeting, the City Council of the City of Bainbridge Island passed a motion directing the Planning and Community Development Department to prepare an amendment to the July 30, 2014 SMP pertaining to aquaculture to bring the aquaculture regulations into alignment with the language contained in the June 7, 2013 version of the SMP pertaining to aquaculture regulations; and

**WHEREAS**, as a result of the City Council's December 9, 2014 direction and in order to obtain the GMHB's approval of an extension of the hearing on the merits, the City, the Alliance, and PCSGA (the "Parties") agreed to enter into settlement discussions; and

**WHEREAS**, the parties met several times between January 2015 and January 2016 identify revisions to the SMP's aquaculture regulations that would further the City Council's December 9, 2014 direction while balancing the interests of the Parties; and

**WHEREAS**, the revisions to the SMP's aquaculture regulations herein ("Revisions") represent the City's best efforts to comply with the City Council's December 9, 2014 direction while balancing the interests of the Parties; and

**WHEREAS**, the Planning Commission reviewed the Revisions at a study session on March 24, 2016; and

**WHEREAS**, the Planning Commission conducted a public hearing on the Revisions contained in this Ordinance No. 2016-06 on April 14, 2016; and

**WHEREAS**, the City Council conducted a public hearing on Ordinance No. 2016-06 on May 24, 2016; and

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF BAINBRIDGE ISLAND, WASHINGTON, DOES ORDAIN AS FOLLOWS:**

**Section 1.** The Recitals, above, set forth as “WHEREAS” clauses, are incorporated by this reference as findings of fact.

**Section 2.** Only that Subsection entitled “Aquaculture” within Table 16.12.030-1: Shoreline Use Modification Table of the Bainbridge Island Municipal Code as set forth in Exhibit 1 attached to this ordinance and incorporated herein by this reference is hereby amended to read as follows and the remaining portions of Table 16.12.030-1 shall remain unchanged.

**Section 3.** Only that Subsection entitled “Aquaculture” within Table 16.12.030-2: Dimensional Standards Table of the Bainbridge Island Municipal Code is hereby amended to read as set forth in Exhibit 2 attached to this ordinance and incorporated herein by this reference and the remaining portions of Table 16.12.030-2 shall remain unchanged.

**Section 4.** The aquaculture policies and regulations of the SMP are hereby amended to read as set forth in Exhibit 3 attached to this ordinance and incorporated herein by reference. Only that Subsection 5.2 entitled “Aquaculture” of the Section 5.0 – Specific Shoreline Use and Development Policies and Regulations – is amended and the remaining portions of Section 5.0 shall remain unchanged. Pursuant to RCW 36.70A.480(1), use regulations shall be a part of the City’s development regulations and shall be codified as an amended Chapter 16.12 of the Bainbridge Island Municipal Code. The Director of Planning and Community Development shall work with the codifier of the Bainbridge Island Municipal Code in order to ensure that the regulations in the SMP are appropriately codified.

**Section 5.** Only those Subsections within Section 16.12.080, Definitions, entitled “Aquaculture”; “Aquaculture, Shellfish Garden”; “Aquaculture, Commercial”; and “Aquaculture, Non-Commercial” of the Bainbridge Island Municipal Code are amended to read as follows and the remaining portions of Section 16.12.040 shall remain unchanged:

**Aquaculture** – The culture or farming of fish, shellfish, or other aquatic plants and animals. Aquaculture does not include the harvest of wild geoduck associated with the state-managed wildstock geoduck fishery. ~~Upland finfish rearing facilities are included in the definition of agriculture and are not considered aquaculture for the purpose of this SMP. Aquaculture activities include, but are not limited to, the hatching, cultivating,~~

~~planting, feeding, raising, and harvesting of aquatic plants and animals, and the maintenance and construction of necessary equipment and buildings. Cultivation methods include, but are not limited to, fish pens, shellfish rafts, racks and long lines, seaweed floats and nets, and the planting and harvesting of clams and oysters.~~

~~**Aquaculture, Shellfish Garden**—The cultivation, harvesting, and incidental preparation of shellfish for personal human use and consumption on public and private tidelands~~

**Aquaculture, Commercial:** Commercial Aquaculture is the cultivation of fish, shellfish or other aquatic plants and animals for sale.

**Aquaculture, Non-commercial:** The cultivation of fish, shellfish or other aquatic plants and animals for personal consumption, research, or restoration or enhancement of native species.

**Section 6.** This ordinance shall take effect and be in force five (5) days from its passage, approval, and publication as required by law.

PASSED BY THE CITY COUNCIL this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

APPROVED BY THE MAYOR this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
\_\_\_\_\_, Mayor

ATTEST/AUTHENTICATE:

\_\_\_\_\_  
Rosalind D. Lassoff, CMC, City Clerk

FILED WITH THE CITY CLERK:  
PASSED BY THE CITY COUNCIL:  
PUBLISHED:  
EFFECTIVE DATE:  
ORDINANCE NUMBER: 201\_\_-

**ORDINANCE NO. 2016-06**  
**Exhibit 1**

Table 16.12.030-1 Shoreline Use and Modification Table									
"P" = Permitted Use			"X" = Prohibited Use			"A" = Accessory Use			
"C" = Conditional Use			"#" = Same as Upland Property			"CA" = Conditional Accessory Use			
SHORELINE USE	UPLAND DESIGNATION					AQUATIC DESIGNATION			Use Specific Standards
	Natural	Island Conservancy	Shoreline Residential Conservancy	Shoreline Residential	Urban	Aquatic	Priority Aquatic		
							A	B	
<b>Natural Resource Management</b>									
<u>Aquaculture, Commercial</u>	C[1]	C[1]	C	C	C	#	X	X	
<u>Aquaculture, Commercial Geoduck</u>	X	X	C	C	C	#	X	X	
<u>Aquaculture, Non-Commercial</u>	P[1]	P[1]	P[1,2]	P[1,2]	P[1,2]	#	P[1]	P[1]	
<u>Aquaculture</u>	{}	X	{}	{}	{}	{}	{}	{}	
<u>Aquaculture, Shellfish Garden</u>	X	P	P	P	P	P	P[1]	P[1]	

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[1] Allowed if less than 500 square feet and using native species or as part of an approved shoreline restoration or native species recovery project.

[2] A conditional use permit is required for non-commercial aquaculture with a cultivation area over 500 square feet.

[4] Allowed if using native species and part of an approved shoreline restoration project.

**ORDINANCE NO. 2016-06**

**Exhibit 2**

Table 16.12.030-2 Dimensional Standards Table

Greyed out setback boxes or letter X indicate prohibited uses

SHORELINE USE	UPLAND DESIGNATION					AQUATIC DESIGNATION			Use Specific Standards
	Natural	Island Conservancy	Shoreline Residential Conservancy	Shoreline Residential	Urban	Aquatic	Priority Aquatic		
							A	B	
<b>Natural Resource Management</b>									
<b>Aquaculture</b>									
Setbacks									
Water-dependent	X	0'	0'	0'	0'	DOES NOT APPLY TO DEVELOPMENT BELOW OHWM			
Water-related	X	<del>25'</del> 30'	<del>25'</del> 30'	<del>25'</del> 30'	<del>25'</del> 30'				
Nonwater-oriented	X	150'	115'	100'	100'				
Height Limit									
Overwater Structures	DOES NOT APPLY TO DEVELOPMENT ABOVE THE OHWM					3'	<del>X</del> 3'	3'	
Accessory use on overwater structures						3'	<del>X</del> 3'	3'	
Overwater Structure Predator Control						6'	<del>X</del> 6'	6'	
Upland	X	30'	30'	30'	30'	DOES NOT APPLY TO DEVELOPMENT BELOW OHWM			

Table 16.12.030-2 Dimensional Standards Table

Greyed out setback boxes or letter X indicate prohibited uses

SHORELINE USE	UPLAND DESIGNATION					AQUATIC DESIGNATION		Use Specific Standards	
	Natural	Island Conservancy	Shoreline Residential Conservancy	Shoreline Residential	Urban	Aquatic	Priority Aquatic		
							A		B
Aquaculture, Non-commercial for Recovery of Native Population									
Setbacks									
Water-dependent	X	0'	0'	0'	0'	DOES NOT APPLY TO DEVELOPMENT BELOW OHWM			
Water-related	X	25'	25'	25'	25'				
Nonwater-oriented	X	150'	115'	100'	100'				
Height Limit									
Overwater	DOES NOT APPLY TO DEVELOPMENT ABOVE THE OHWM					3'	X	3'	
Upland	X	30'	30'	30'	30'	DOES NOT APPLY TO DEVELOPMENT BELOW OHWM			

ORDINANCE 2016-06

Exhibit 3

5.2 Aquaculture

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5.2.1 Applicability

These provisions apply to the commercial cultivation and harvesting of fish, shellfish or other aquatic animals or plants, and also to non-commercial harvesting, ~~and to the incidental preparation~~ of fish and shellfish for human consumption, or cultivation for restoration purposes. Aquaculture is dependent on the use of the water, and when consistent with control of pollution and prevention of damage to the environment, is a preferred use of the water area. ~~When properly managed, aquaculture can result in long term over short term benefit and can protect the resources and ecology of the shoreline.~~ Aquaculture activities may be subject to the regulations found in Section 6.4, Dredging and Dredge Material Disposal, depending on site-specific circumstances. Aquaculture activities will be reviewed under the no net loss provisions of Section 4.1.2, Environmental Impacts, and may also be reviewed under Section 4.0, General (Island-wide) Policies and Regulations; Section 4.1.5, Critical Areas; Section 4.1.6, Water Quality and Stormwater Management; and Appendix B, when applicable. Other portions of this Program may also apply.

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5.2.2 Policies

1. Identify and encourage aquaculture activities which may provide opportunities for creating ecosystem improvements and result in no net loss of ecological functions.
2. Allow experimental forms of aquaculture involving the use of new species, new growing methods, or new harvesting techniques, when they are consistent with applicable state and federal regulations and this Program. Experimental aquaculture projects ~~should~~ be limited in scale and ~~should~~ be approved only for a limited period of time. When feasible, limit or restrict new development and uses in areas that affect existing experimental aquaculture.
3. Aquaculture should not be permitted in areas where it would result in a net loss of ecological functions, ~~structure and processes;~~ adversely impact eelgrass or macroalgae; ~~forage fish or salmonid species;~~ or significantly conflict with navigation and other water dependent uses.
4. New commercial aquaculture shall be located to avoid or minimize conflicts with public use and access of the shoreline.
5. Aquaculture facilities should be designed and located to not spread disease to native aquatic life, establish new non-native species which cause significant ecological impacts, or significantly impact the aesthetic qualities of the shoreline.
6. Impacts to ecological functions ~~should~~ be mitigated according to WAC 173-26-201(2)(e) and Section 4.1.2, Environmental Impacts.
7. Give preference to those forms of aquaculture that have less environmental and/or visual impacts. Preference is given to those projects that require fewer submerged or intertidal structures, fewer land-based facilities, limited substrate modification, and that don't rely on artificial feeding.
8. Ensure aquaculture does not cause cumulative impacts.

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9. In reserving shoreline areas for aquaculture, the City should first give preference to reserving appropriate areas for protecting and restoring ecological functions and next give preference to water-dependent uses (RCW 90.58.020, WAC 173-26-201(2)(d), WAC 173-26-251(2)).
10. The City shall consider local ecological conditions and provide limits and conditions to assure appropriate compatible types of aquaculture for the local conditions as necessary to assure no net loss of ecological functions (WAC 173-26-241(3)(b)).
11. The City shall identify where commercial aquaculture may occur and where it should be excluded based on potential use conflicts, consistency with environmental designation management policies, ecological considerations, local conditions, input from interested parties and reasonable and foreseeable aquaculture use.
12. Until the City's scheduled periodic review of this Program under RCW 90.58.080, the City shall limit where commercial aquaculture may occur based on estimated future demand for shoreline space, potential use conflicts, current shoreline use patterns and projected trends. During the period review, the City shall make amendments deemed necessary to reflect changing local circumstances, new information or improved data, relevant environmental and ecological conditions and any applicable guidelines issued by the Department of Ecology.
13. Until the City's scheduled periodic review of this Program under RCW 90.58.080, the City shall prohibit new commercial marine finfish net pen aquaculture operations to provide time for updated guidance addressing the protection of ecological functions and use conflicts. The City will revisit policies and regulations regarding marine finfish net pens to address new guidance during scheduled periodic reviews of this Program under RCW 90.58.080.

### 5.2.3 Regulations - Prohibited

1. Aquaculture is prohibited in the Natural, Island Conservancy, and Priority Aquatic designations, except as provided in Section 5.2.4 (1), below.
2. Aquaculture uses and/or operations on City-owned public tidelands.
3. New commercial net pen aquaculture.
4. Aquaculture that uses or releases herbicides, pesticides, antibiotics, fertilizers, parasites, pharmaceuticals, or genetically modified organisms, feed or other materials known to be potentially harmful into surrounding waters is prohibited, unless:
  - a. When conducted for native population recovery in accordance with government/Tribal approved plan and all state and federal regulations; or
  - b. If approved by all appropriate state and federal agencies and proof thereof is submitted to the City; and
  - c. If all regulations of SMP 4.16, Water Quality and Stormwater Management, are met.
5. Mechanical and/or hydraulic harvesting or other activities that involve substantial substrate modification shall be prohibited in existing kelp beds, or in beds of native eel grass (*Zostera marina*), mixed beds of native and non-native eelgrass (*Zostera japonica*) and areas adjacent to existing eelgrass beds that are suitable for reintroduction or natural colonization of native eelgrass

beds as identified in the City's shoreline restoration plan. These restoration areas include: Milwaukee Dock Eelgrass Project, Port Madison Shoreline Restoration Project, Rolling Bay Walk Acquisition and Demolition and West Bainbridge Shoreline Protection Project.

6. Aquaculture that involves significant risk of cumulative adverse effects on water quality, sediment quality, benthic and pelagic organisms and/or wildlife and wild fish populations through habitat modification, or other disturbances and alteration.

#### 5.2.4 Regulations ~~—~~ General

1. Aquaculture may be allowed as follows:

- a. ~~Aquaculture as a conditional use in Shoreline Residential, Urban, and adjacent Aquatic designations.~~ Commercial aquaculture, including geoduck, as a conditional use in the Shoreline Residential Conservancy, Shoreline Residential, Urban and adjacent Aquatic designations.
- b. Commercial aquaculture, excluding geoduck, as a conditional use in the Natural, Island Conservancy and adjacent Aquatic designations if using native species or as part of an approved shoreline restoration project or native species recovery project.
- c. ~~Individual Shellfish Gardens are allowed in the Island Conservancy, Shoreline Residential Conservancy, Shoreline Residential and Urban shoreline designations and in adjacent Aquatic designation Priority B. They also are allowed in Aquatic Priority A when for the recovery of native populations, restoration, or personal use. Non-commercial aquaculture is a permitted use in the Shoreline Residential Conservancy, Shoreline Residential, Urban and adjacent Aquatic designations. It is a permitted use in the Natural, Island Conservancy, Priority Aquatic A and Priority Aquatic B designations if using native species or as part of an approved shoreline restoration project or native species recovery project.~~
- d. Non-commercial aquaculture with a cultivation area of greater than 500 square feet requires a shoreline conditional use permit.

2. Shellfish Gardens Non-commercial aquaculture that does not constitute substantial development is not subject to the regulations of Section 5.2. and is allowed pursuant to Section 5.2.4.c provided the following can be met:

- a. ~~They comply~~ It complies with all state and federal regulations, including transfer and harvest permits required by WDFW;
- b. The cultivation and harvesting is limited to ~~native~~ species of shellfish acquired from a licensed source consistent with state law;
- c. The operation may utilize bottom culture or off-bottom culture bags if in accordance with best management practices and it does not significantly alter the tidal bed;
- d. All materials shall be marked with owners' contact information to provide identification after storm disturbance;
- e. Any use or activity meets the no net loss standard of Section 4.1.2.4; and

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e. The cultivation is limited to an area of 500 square feet.

2. ~~When a shoreline conditional use permit is issued for a new aquaculture use or development, that permit shall apply to the initial siting, construction, and/or planting or stocking of the facility or farm, and shall be valid for the period specified in the permit.~~

3. Aquaculture shall avoid:

- a. A net loss of ecological functions or processes;
- b. Adverse impacts to ~~eelgrass and macro algae~~; critical saltwater habitat as defined in WAC 173-26-221(2)(c)(iii), including all kelp beds, eelgrass beds, spawning and holding areas for forage fish, such as herring, smelt and sand lance; subsistence, commercial and recreational shellfish beds; mudflats, intertidal habitats with vascular plants, and areas with which priority species have a primary association;
- c. Significant conflicts with navigation, public access, and other water-dependent uses;
- d. The spread of disease to native aquatic life;
- e. Establishing new non-native species that cause significant ecological impacts;
- f. Significant impacts to shoreline aesthetic qualities; ~~and/or~~
- g. Significant modifications of the substrate; and/or
- f. A detectable level of reduction of presence of existing animals such as sea stars, moon snails, sand dollars, etc.

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4. When a shoreline permit is issued for a new commercial aquaculture use or development, that permit shall apply to the initial siting, construction, and/or planting or stocking of the facility, and shall be valid for a period of five (5) years. For commercial geoduck aquaculture, this five (5) year term does not include the time during which a use or development was not actually pursued due to the pendency of administrative appeals or legal actions or due to the need to obtain any other government permits and approvals for the use or development that authorize the use or development to proceed, including all reasonably related administrative legal actions on any such permits or approvals. Permits must take into account that operators have a right to harvest product once planted. After the aquaculture use or development is established under the shoreline permit, all subsequent cycles of planting, maintenance, and harvest shall not require a new, renewed or revised permit unless otherwise provided as follows:

Commented [A1]: See RCW 90.58.143.

a. Permit revisions shall proceed in accordance with WAC 173-27-100. A new permit is required when any of the following occurs:

- i. The physical extent of the use or development or associated overwater coverage is expanded by more than ten percent compared to the permitted use or development. If the amount of expansion or change in overwater coverage exceeds ten percent, the revision or sum of the revision and any previously approved revisions shall require the applicant apply for a new permit;
- ii. The applicant proposes to cultivate a species not previously cultivated within the City's jurisdictional waters; or

iii. New chemicals not previously approved as part of the existing permit are proposed for use.

5. The City may adopt different time limits from those set forth in subsections (2) and (3) of RCW 90.58.143 as part of action on a substantial development permit.

6. As a condition of permit approval, the Administrator may apply the following conditions:

- a. All permitted aquaculture operations shall be reviewed by the City after the first 12-month period of operation to confirm compliance with the terms and conditions of the permit. The City may revoke the permit if it is determined by the Administrator that aquaculture operations are not consistent with the terms and conditions of the permit and/or the aquaculture operations are not within the original scope and intent of the original permit.
- b. Permit applications for aquaculture operations including floating aquaculture structures shall include sufficient detail on construction materials to determine that the floating structures and/or equipment – including any items stored upon such structures – will avoid or minimize adverse impacts that can be caused by overwater structures.
- c. At least once every three months beaches in the project vicinity shall be patrolled by crews who will retrieve aquaculture debris (e.g.: predator nets, tubes, tube caps, stakes) that escape from the project area. Crews are not required to patrol privately owned tidelands where it can be demonstrated that owners have refused to authorize such activity. Within the project vicinity, locations shall be identified where debris tends to accumulate due to wave, current, or wind action, and after weather events these locations shall be patrolled by crews who will remove and dispose appropriately of aquaculture debris. Operators shall maintain a record with the following information and the record shall be made available upon request: date of patrol, location of areas patrolled, description of the type and amount of retrieved debris, and other pertinent information.
- d. Where any proposed structure has the potential to constitute a hazard to the public, the City may require the posting of a bond commensurate with the cost of removal or repair. Following notice to the owner, the City may abate an existing abandoned or unsafe aquaculture structure if the owner fails to respond within 30 days. The City may also impose a lien on the related shoreline property or other assets in an amount equal to the cost of the abatement. Bonding requirements shall not duplicate requirements of other agencies.
- e. Aquaculture facilities are required to identify and use best management practices to minimize impacts from the construction and operation of the facilities.
- f. Materials that are not necessary for the immediate and regular operation of the facility shall not be stored waterward of the ordinary high water mark.
- g. All tubes, mesh bags, and area nets used on the tidelands below the line of mean higher high water shall be clearly, indelibly and permanently marked to identify the permittee name and contact information. On the nets, identification markers will be placed with a minimum of one identification marker for each 50 feet of net.
- h. All floating and submerged aquaculture structures and facilities in navigable waters shall comply with all applicable state and federal requirements.
- i. Use of motorized vehicles, such as trucks, tractors and forklifts is prohibited below the ordinary high water mark.

- j. Aquaculture operators shall periodically monitor and report on noise, odor, water quality, aquatic and benthic organism types and densities, current pattern and flows, flushing rates, prevailing storm wind conditions, impacts to wetlands, fish and wildlife and shoreline habitats and other relevant environmental and ecological conditions to the City on a schedule specified in the permit relating to the aquaculture activity. The permit may be rescinded by the City for failure to monitor and fully report, or if monitoring reveals unanticipated impacts that cannot be mitigated.
- k. The operators of aquaculture developments shall control odor through the proper storage and disposal of feed and other organic materials and by maintaining a clean operation.
- l. Aquaculture operations must comply with noise regulations in BIMC 16.16 and avoid or minimize noise impacts to the extent possible.
- m. Overhead wiring or plumbing is not permitted on overwater structures.
- n. Bulk storage for gasoline, oil and other petroleum products for any use or purpose on piers and docks is prohibited. Bulk storage means non-portable storage in fixed tanks.

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7. In addition to the minimum application requirements in BIMC 2.16.165, applications for commercial aquaculture operations shall include the submittal requirements provided in the Administrative Manual. Some of these submittal requirements may be waived by the Administrator based on site-specific environmental and ecological conditions.

#### 5.2.5 Regulations –Location and Design Standards

- ~~1. Floating and submerged aquaculture structures shall be located to avoid or minimize interference with navigation and the normal public use of the surface waters. Floating structures shall remain shoreward of principal navigation channels. Other restrictions on the scale of aquaculture activities to protect navigational access may be necessary based on the size and shape of the affected water body. Revised and moved to 5.2.5.2.e~~
- ~~1. Shellfish Gardens Non-commercial aquaculture is allowed provided the following can be met:
 
  - a. They comply ~~It complies~~ with all state and federal regulations, including transfer and harvest permits required by WDFW;
  - b. The cultivation and harvesting is limited to native species of shellfish acquired from a licensed source consistent with state law;
  - e. The cultivation and harvesting does not result in the destruction of other species such as eelgrass, sea stars, etc.;
  - e. The operation may utilize bottom culture or off bottom culture bags if in accordance with best management practices and it does not significantly alter the tidal bed;
  - e. All materials shall be marked with owners' contact information to provide identification after storm disturbance; and
  - f. The cultivation is limited to an area of 500 square feet.
 Revised and moved to 5.2.4~~
- ~~2. Aquacultural structures and activities that are not water dependent (e.g., warehouses for storage of products, parking lots) shall be located landward of the OHWM, upland of water dependent portions of the project, and shall avoid or minimize detrimental impacts to the shoreline. Revised and moved to 5.2.7.3~~

1. Location standards for commercial aquaculture operations include:

- a. The total area of all permitted commercial aquaculture operations shall not exceed 5 acres or 5 percent of the linear footage of the shoreline (13,992 linear feet) measured parallel to OHWM, whichever is achieved first. Acreage shall include the area of cultivation and harvest on the tidelands. Linear footage shall include the total length of shoreline of the parcel(s) on which aquaculture operations are taking place.
- b. Aquaculture operations may be prohibited and/or limited in areas of critical saltwater habitat as defined in WAC 173-26-221(2)(c)(iii), shellfish closure areas and areas of known water quality contamination. These areas are shown in Appendix F, which is advisory in nature and does not represent area where aquaculture operations are prohibited or limited. Location and extent of these features must be documented at time of permit review.
- c. Aquaculture operations located on parcels abutting or nearby City-owned tidelands shall be located so as to not unduly restrict pedestrian access or circulation along public beaches.
- d. Aquaculture use and development shall not significantly interfere with navigation, or access to adjacent waterfront properties, or public recreation areas. Mitigation shall be provided to offset such impacts where there is a high probability that adverse impact would occur. This provision shall not be interpreted to mean that an operator is required to provide access across owned or leased tidelands at low tide for adjacent upland property owners.
- e. Aquaculture use and development shall be located in areas where biophysical conditions, such as tidal currents, water temperature and depth are suitable for the form of aquaculture proposed. Individual aquaculture uses and developments shall be separated by sufficient distance to ensure that significant adverse cumulative effects do not occur.
- f. Floating and submerged aquaculture structures shall be located to avoid or minimize interference with navigation and the normal public use of the surface waters. Floating structures shall remain shoreward of principal navigation channels. Other restrictions on the scale of aquaculture activities to protect navigational access may be necessary based on the size and shape of the affected water body. Netting and fencing shall be the minimum necessary to deter targeted predators and shall not exceed six (6) feet in height, as measured from water surface.
- g. For aquaculture projects within Pacific herring spawning locations documented and/or verified by WDFW, in-water activities that would affect herring spawn that take place outside May 1 through January 14 require that a Pacific herring spawn survey be conducted prior to commencing such activities. If Pacific herring spawn is present, these activities are prohibited in the areas where spawning has occurred until such time as the eggs have hatched and Pacific herring spawn is no longer present. The City may consider alternative methods that are contained in federal and/or state aquaculture permits for reducing impacts to herring spawning habitat and other forage fish spawning habitat.
- h. For aquaculture projects within sand lance and surf smelt spawning locations documented and/or verified by WDFW, no harvesting or any activity which disturbs the substrate may occur during the surf smelt or sand lance spawning seasons until a spawning survey is conducted. If surf smelt or sand lance spawn are present in the growing area to be harvested, then no aquaculture activities may occur until the eggs are hatched. Extreme caution should be taken to avoid impact and minimize disturbance of sand lance and surf smelt larvae that are present.
- i. Property Line Setbacks. The perimeter of an aquaculture operation shall be set back a minimum of ten feet (10') from side property lines. Aquaculture operations that include multiple parcels require side yard setbacks only at the outer edge of the operation and not from internal property lines.
- j. Aquaculture operations require a minimum buffer of 25 feet from the outside edge of an activity or structure to native aquatic vegetation attached to or rooted in substrate, including

native and mixed beds of eelgrass. The City may require a larger buffer based on consultation during permit review with Ecology, Department of Natural Resources and the U.S. Army Corps of Engineers to determine appropriate buffers based on the most current and applicable science and proximity of bed to the project, current and tidal flow direction, anticipated turbidity and anticipated frequency and intensity of operation. Buffers will be determined based on site-specific conditions and survey data submitted with the permit application.

- k. Mixed beds of native and non-native eelgrass shall be protected as critical saltwater habitat in order to protect native eelgrass and the species that depend upon both types of eelgrass. This regulation does not preclude hand removal of non-native eelgrass pursuant to WAC 16-750-015.
- ~~3. Hatchery and other aquaculture operations shall be required to maintain a vegetated buffer zone along the affected stream as prescribed in Appendix B, provided that clearing of vegetation shall be permitted for essential water access points. Revised and moved to 5.2.7.4~~
- ~~4. Onshore support structures shall meet the height and setback standards established in Table 4.2, Site Development Dimensional Standards Table, except that reduced setbacks may be permitted through a shoreline variance where necessary for the operation of hatcheries and rearing ponds. Revised and moved to 5.2.7.3~~
- ~~25. The following shall be limited to the minimum size or number necessary for approved aquaculture development, uses, and activities:
  - a. Submerged or intertidal structures.
  - b. Land-based facilities.
  - c. Structures which modify substrate.~~
- ~~36. Floating/hanging aquaculture facilities and associated equipment, except navigation aids, shall use colors and materials that blend into the surrounding environment in order to minimize visual impacts. All materials, including those used for incidental aquaculture for personal consumption, shall be marked with owners' contact information to provide identification after storm disturbance. All floating and submerged aquaculture facilities in navigable waters shall comply with all applicable state and federal requirements. Floating/hanging aquaculture facilities require a visual impact analysis consisting of information comparable to that found in the Department of Ecology's Aquaculture Siting Study (1986), as updated. Such analysis may be prepared by the applicant without professional assistance, provided that it includes an adequate assessment of impacts, as determined by the Administrator.~~
- ~~7. Floating aquaculture facilities may require a visual impact analysis consisting of information comparable to that found in the Department of Ecology's Aquacultural Siting Study (1986), as updated. Such analysis may be prepared by the applicant without professional assistance, provided that it includes an adequate assessment of impacts, as determined by the Administrator.~~
- ~~48. For aquacultural projects using over water structures, storage of necessary tools and apparatus waterward of the OHWM shall be limited to containers of not more than three (3) feet in height, as measured from the surface of the raft or dock, provided that, in locations where the visual impact of the proposed aquaculture structures will be minimal, the City, based upon written findings and without requiring a variance, may authorize storage containers of greater height. In such cases, the burden of proof shall be on the applicant. Materials which are not necessary for the immediate and regular operation of the facility shall not be stored waterward of the ordinary high water mark. A temporary sanitation station may be allowed on fixed overwater pier~~

~~structures when utilities are not available within a reasonable distance. Overwater structures and/or equipment, and any items stored upon such structures such as materials, garbage, tools, or apparatus, shall be sited and maintained to minimize visual impacts. Over-water structures, storage of necessary tools and apparatus waterward of the OHWM shall be limited to containers of not more than three (3) feet in height, as measured from the surface of the raft or dock unless shoreline conditions serve to minimize visual impacts as demonstrated through a visual impacts study. Materials which are not necessary for the immediate and regular operation of the facility shall not be stored waterward of the OHWM. Impacts of overwater structures (e.g.: shading) shall be evaluated based on the maximum surface coverage including any items stored upon such structures.~~

9. ~~Shellfish Gardens for personal consumption are allowed on private lands provided the following can be met:~~
- a. ~~They comply with all state and federal regulations, including transfer and harvest permits required by WDFW.~~
  - b. ~~The cultivation and harvesting is limited to native species of shellfish acquired from a licensed source consistent with state law; and~~
  - e. ~~The operation may utilize bottom culture or off bottom culture bags if in accordance with best management practices and it does not significantly alter the tidal bed.~~

Revised and moved to 5.2.5.1

## 5.2.6 Regulations – Operational Standards

All commercial aquaculture operations shall comply with the following standards:

1. Aquaculture structures and equipment shall be of sound construction and shall be so maintained. Abandoned or unsafe structures and equipment shall be removed or repaired promptly by the owner. ~~Aquaculture operations that do not conform with this master program are considered discontinued if the use has ceased for a period of more than five (5) years.~~
2. Operational monitoring may be required if and to the extent that is necessary to determine, ensure, or confirm compliance with predicted or required performance, including periodic benthic analysis or noise pollution monitoring in accordance with BIMC Chapter 16.16. Such monitoring requirements shall be established as a condition of the permit and shall be conducted at the applicant's (operator's) expense.
3. Aquaculture operations that do not conform with this master program Program are considered discontinued if the use has ceased for a period of more than five (5) years.
4. No processing of any aquaculture product, except for the sorting and culling of the cultured organism and the washing or removal of surface materials or organisms after harvest, shall occur in or over the water unless specifically approved by permit. All other processing and processing facilities shall be located on land and shall be governed by these provisions and the policies and

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regulations of other applicable sections of the Master Program, in particular, provisions addressing commercial and industrial uses.

54. Aquaculture wastes shall be disposed of in a manner that will ensure compliance with all applicable governmental waste disposal standards. No garbage, wastes, or debris shall be allowed to accumulate at the site of any aquaculture operation, except for in proper receptacles [BIMC Chapter 8.16].

65. Predator control shall not involve the killing or abusive harassment of birds or mammals. Approved controls include, but are not limited to, double netting for seals, overhead netting for birds, fencing or netting for otters. The use of other nonlethal, non-abusive predator control measures shall be contingent upon receipt of written approval from the National Marine Fisheries Service and/or the U.S. Fish and Wildlife Service, as required. Aquaculture use and development shall employ non-lethal, non-harmful measures to control birds and mammals.

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76. All nets shall be maintained in accordance with all applicable state and federal requirements. If a state or federal permit is not required, cleaning of nets and other apparatus shall be accomplished by air drying, spray washing or hand washing, rather than chemical treatment and applications.

8. Predator exclusion devices shall:

- a. Be firmly attached or secured so as to not become dislodged or trap animals underneath.
- b. Blend with the natural environment
- c. Be routinely inspected and maintained
- d. Be removed as soon as they are no longer needed to perform protective functions

9. When determined necessary to minimize aesthetic and habitat impacts of large-scale projects, the City may require a phased approach to operation. This includes planting and harvesting on a rotational basis within the same tideland parcel.

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10. Aquaculture operations shall avoid adverse proximity impacts from light and glare and glare and satisfy the provisions of BIMC 18.15.040.

11. Property corner markers that are visible at low tide during planting and harvesting must be installed.

12. The City shall determine appropriate identification/marketing of floating and submerged aquaculture structures and facilities in navigable waters to provide identification after storm disturbance.

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13. On-site work is allowed during low tides, which may occur at night or on weekends. Measures to reduce impacts to adjacent existing uses, from such sources as noise from equipment and glare from lighting, shall be identified in an operational plan submitted with the permit application.

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### 5.2.7 Regulations – Upland Structures

1. When upland structures are allowed they must be the minimum necessary to meet the needs of the water-dependent use.

2. Upland water-related aquaculture development, uses and activities shall be set back from the OHWM a sufficient distance to avoid disturbance of the Shoreline Buffer or Shoreline Vegetation Management Area. (See and Section 4.0, General (Island-wide) Policies and Regulations; Section 4.1.3 Vegetation Management; and Tables 4-1 through 4-3, for dimensions.)

3. Upland aquaculture development which does not require a location at or near the water's edge shall be located upland of the water-dependent portions of the operation, and outside of the Shoreline Buffer or Vegetation Management Area as established in Section 4.0, General (Island-wide) Policies and Regulations and Table 4-3.
4. Upland structures shall be designed, constructed and maintained to include vegetative screening for parking, and upland storage areas and facilities consistent with landscaping standards for parking lots as prescribed in BIMC Section 18.15.010, Development Standards and Guidelines: Landscaping, Screening, and Tree Retention, Protection, and Replacement.
5. A temporary sanitation station may be allowed on fixed overwater pier structures when utilities are not available on the same parcel(s) as the aquaculture operation.

#### **5.2.87 Regulations – Specific – Commercial Geoduck Requirements Aquaculture**

1. In addition to other provisions in Section 5.2, commercial geoduck aquaculture will be administered consistent with WAC 173-26-241(3)(b)(ii), (iii), and (iv). Where there is inconsistency between the provisions in 5.2.1, 5.2.2., 5.2.3, 5.2.4, 5.2.5, 5.2.6 or 5.2.7 and the geoduck provisions, the specific commercial geoduck provisions apply.
2. A conditional use permit (CUP) is required for all new commercial geoduck aquaculture and conversions from existing non-geoduck aquaculture to geoduck aquaculture. CUPs for new commercial geoduck and conversions will be administered consistent with WAC 173-26-241(3)(b)(ii), (iii), and (iv).

# WATER RESOURCES ELEMENT

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# WATER RESOURCES ELEMENT

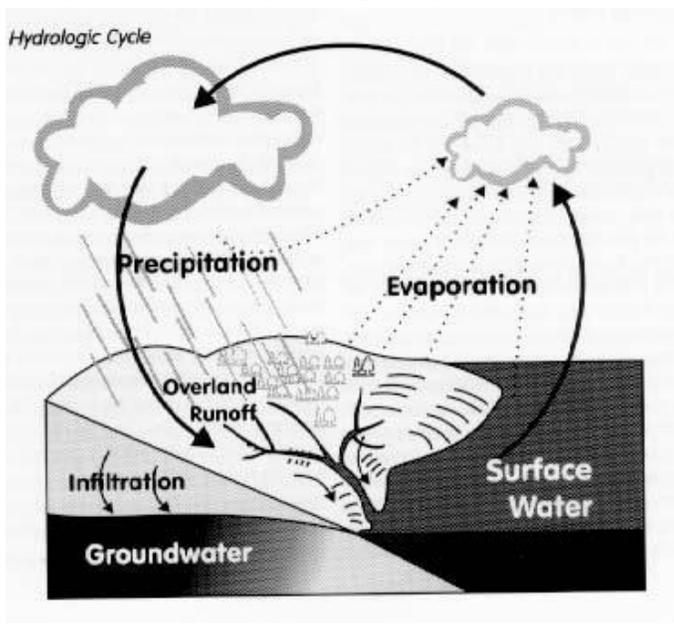
## INTRODUCTION

Bainbridge Island is a quasi-enclosed environment that requires a holistic perspective to understand the interdependence among the Island's three primary water resources: groundwater, surface water, and stormwater. Although these waters are typically regulated and managed independently, they are, in nature, intimately connected. In fact, it is all the same water, simply given a different name and managed according to where it resides in the hydrologic cycle at any given time (see Figure 1).

When rain falls, rainwater that is not evaporated or taken up by plants will take one of three paths. It may infiltrate into the ground where it is called groundwater. It may drain directly into streams and harbors where it is called surface water, or it may be captured by manmade infrastructure such as street drains, ditches, or detention/retention ponds where it is called stormwater.

Rainwater that infiltrates into the ground (groundwater) may be pumped from wells to provide drinking water or irrigation or seep out of the ground into streams, springs, and harbors where it is, again, called surface water. Likewise, stormwater may discharge into a nearby stream or harbor and become surface water or infiltrate into the ground and become groundwater.

Figure 1. The Hydrologic Cycle



In order to successfully protect and manage any one of these waters, one must protect and manage all three. To address these interrelationships, a separate Water Resources Element has been developed as follows:

- General water resources management policies
- Groundwater protection and management ~~and protection~~ policies
- Surface water protection and management ~~and protection~~ policies
- Stormwater protection and management ~~and protection~~ policies
- Residential on-site sewage system policies
- Contaminated sites policies
- Public education and outreach policies

### Land Use Connection

In the development of policies related to the management of our Island water resources, it is important to understand the links between water resources quality and quantity and land use. Most water quality and habitat integrity impacts are caused by the way land was or is used. Developed land allows for rapid runoff and inundation of natural conveyance systems such as wetlands and streams. Rapid runoff can cause damage through flooding, erosion, and water-borne contamination.

In addition, households create sewage which needs disposal either by a wastewater treatment plant or by residential on-site sewage systems. Wastewater treatment plants are reasonably effective at cleaning wastewater, but do not at present provide complete removal of nitrogen nor treat for contaminants of emerging concern which include, but are not limited to, byproducts of medications, recreational drugs, health and beauty products, and caffeine.

Residential on-site sewage systems can fail and cause contaminants to enter the surface water and/or groundwater. Even functioning systems, depending upon density and proximity to surface water and groundwater, can contribute to accumulations of nitrogen and contaminants of emerging concern in these waters.

Use of fertilizers, pesticides, and other chemicals for cropland, lawns and gardens, and vehicle and household cleaning and maintenance as well as improper pet and livestock waste management can add significant contamination to surface water, stormwater and groundwater.

Commercial and industrial uses, past and present, leave behind pollutants in our soils. In particular, historic land uses such as large row crop agriculture, lumber, petroleum, and others have left behind legacy pollutants in sediments both on upland properties and in the sediments along the bottoms of our streams, harbors, and nearshore areas.

Without proper coordination of the regulations that will implement policy statements, conflicting signals may be given when dealing with water resources issues. For example, a surface water problem may be resolved by efficiently collecting and removing all water

from the area, whereas a groundwater recharge issue may require that the water be kept on-site to allow for infiltration.

Another conflict arises when infiltration of stormwater competes for space with on-site sewage system drainfields. There are physical limitations to the rates of infiltration and absorption based on soil types, which may make it impossible to have both of those facilities on the same site. Where development occurs in important aquifer recharge areas, special consideration is needed to preserve the volume of recharge available to the aquifer and to protect the groundwater from contamination.

A key component of the water resources protection and adaptive management strategy is adequate monitoring and assessment in order to assess impacts of current land use and effectiveness of applied management actions., and t

The overriding theme that runs through all of the policies and goals in this element is the preservation and protection of water quality, water quantity, and ecological and hydrologic function.

### Climate Change

Climate change projections indicate that over the coming decades, sea level may rise up to four feet in the Puget Sound region, the ocean will become more acidic, and climatic conditions are likely to become warmer. This will result in more intense rain events during the wet season with longer, drier summers, though overall annual volume of rainfall will remain approximately the same.

Ocean acidification will likely impact aquatic species survival and assemblages in our marine areas and sea level rise will likely impact habitat and built infrastructure in our nearshore areas including homes, businesses, and public facilities such as roads and sewer facilities.

Wetter conditions during the wintertime will increase water availability, but may cause flooding or diminish water quality. More intense and frequent storms or heavier rainfall events can cause stormwater inundation and localized flooding, chronic flooding, non-infiltrated run-off, erosion and landslides. Increased intensity of rainfall may also diminish aquifer recharge rates as saturated soils are less able to absorb large amounts of water falling over short periods of time.

Warmer, drier conditions in the summertime will increase evaporation rates and water demand by plants, wildlife and people, and may diminish water quality. Dry conditions decrease water availability, resulting in reduced stream flow and diminished aquifer recharge. Warmer and drier conditions can also reduce water quality, both by increasing in-stream temperatures and by concentrating contaminants in smaller volumes of water.

<sup>2</sup>City of Bainbridge Island Level II Assessment: An Element of the Water Resources Study, 2000, Kato & Warren, Inc., Robinson & Noble, Inc

## VISION

Bainbridge Island's water resources (precipitation, on the surface, and in the ground) are climate resilient, and quality and quantity are adequate for all forms of life on the Island. Achieving this vision will require monitoring, conservation, protection of aquifer recharge, and careful maintenance of the quantity and quality of the Island's waters, recognizing that the Island's carrying capacity is limited. **NOTE: COMMISSIONER KILLION WILL REVISE**

## GOALS AND POLICIES

### GOAL 1 General Water Resources

Protection of water resources is of primary importance to the Island. Therefore, the goal is to manage the water resources of the Island in ways that restore, enhance, and preserve their ecological and hydrologic function, for present and projected land uses, recognizing that they are ~~are the sole water supply and that:~~

- Degradation of groundwater quality and quantity water resources is not allowed.
- ~~Water supplies and systems are efficiently utilized.~~
- The long-term sustainability of the Island's water resources is maintained, taking into account future climatic conditions and their effects on the water cycle.
- ~~The water needs of Nnew development and population growth are managed so that water resources remain adequate for the indefinite future approved under the Comprehensive Plan are adequately met by the existing resources.~~
- Groundwater, surface water, and stormwater monitoring, data assessment, and reporting Adequate data of the water resource are current and available including future projections of availability, quality and need.
- Use current and future technology to maintain and protect water resources.

### General Water Resources Policies

#### Policy WR 1.1

The City shall study future climate and demand scenarios to accurately understand future water resource conditions.

#### Policy WR 1.2 1.1

~~The City shall coordinate with other major private water purveyors, government agencies and citizens to ensure protection and preservation of water resources and to provide efficient high quality Island wide water service.~~ Groundwater, surface water, and stormwater are resources that shall be protected and managed to preserve water quality and quantity, and to retain natural ecological and hydrologic function to the maximum extent practicable.

#### Policy WR 1.3 1.2

~~To foster sustainable water resources, planning, protection, management, monitoring and on-going education outreach that is based on watersheds and natural systems should be provided by the City in coordination with appropriate agencies.~~ To foster sustainable water resources, planning,

protection, management, monitoring and on-going education and outreach should be provided by the City in coordination with government agencies at all levels, drinking water purveyors, watershed management groups, Tribes, non-profit organizations, local integrating organizations for regional recovery and protection, and other stakeholders.

### **Policy WR 1.4 1.3**

The policies in this element work in tandem with the protective measures set by the City's Shoreline Management Master Program, Critical Areas Ordinance, and any other environmental or water resources management ordinance established by the City.

### **Policy WR 1.5**

Identify the areas of the Island that are the most vulnerable to pollution from concentrations of fecal coliforms and nitrates (for example, from septic fields, agricultural activities, or fertilizers), and monitor those areas to determine if and when preventative or restorative measures are warranted. NOTE: MOVED FROM POLICY WR 3.10

## **GOAL WR-2 Groundwater Protection and Management Protection Policies**

### **Policy WR 2.1**

Recognize that the entire Island functions To protect groundwater resources, areas identified as an high-aquifer recharge area. Low impact development techniques are essential for maintaining aquifer recharge, should be maintained in low impact uses.

**Discussion:** Low impact uses and low impact development are appropriate for areas with high aquifer recharge. Low impact uses include development for buildings, roads or parking that has a reduced area of impact on the land. Low impact uses do not depend on regular applications of fertilizers or pesticides. Low impact development is an environmentally-friendly approach to site development and stormwater management, emphasizing the integration of site design and planning techniques that conserve and protect the natural systems and hydrologic functions of a site.

### **Policy WR 2.2**

To protect Island promote efficient use of groundwater resources, the City shall encourage the development and expansion of public and private water systems, rather than encouraging shallow or individual residential wells.

### **Policy WR 2.3**

The City shall assess the impacts of proposed activities and development on the flow of springs and streams and levels of wetlands that are either sustained by groundwater discharge or contribute recharge to groundwater, and require and assessment of anticipated by requiring a hydrologic impacts assessment report. Activities or development may be restricted and restricting the activities or development based on if the report indicates any adverse impacts, and/or mitigating impacts.

**Policy WR 2.4**

The City, in cooperation with the appropriate regulatory agencies (e.g., Washington State Department of Health and the Kitsap County Public Health District) ~~should~~ will institute new wellhead protection procedures.

**Policy WR 2.5**

~~For the purpose of protecting surface and groundwater quality, the City Parks Department and School District shall develop plans to eliminate the use of biocides on their properties through the use of integrated pest management techniques.~~

**Policy WR 2.5 2.6**

The City shall ~~promote the use of~~ develop encourage the use of integrated pest management techniques and the reduction of pesticide and herbicide use within the City boundaries.

**Policy WR 2.6 2.7**

Establish a stakeholder group to develop an Island-wide Groundwater Management Plan.

**Policy WR 2.7 2.8**

Develop a program to strongly encourage exempt well owners to regularly monitor the quality of their well water and identify leaks using tools such as flow meters. Results should be self-reported to the Kitsap Public Health District.

**Policy WR 2.8**

Recognizing that the Island aquifer system is a Sole Source Aquifer as designated by EPA, institute an added level of development and re-development permit review to prevent or mitigate potential pollutant-generating activities associated with proposed land use.

**Policy WR 2.9**

Develop an Island-wide seawater intrusion prevention regulations policy.

**Policy WR 2.10**

The City shall develop a water conservation program. should be aggressively pursued by the City to promote the efficient use of water and to protect the resource. Water conservation programs should encourage the use of vegetation that prevents soil erosion, protects habitat for wildlife, retains surface water for recharge, and which does not require additional water during normally dry months.

**Policy WR 2.11**

Water re-use and reclamation will be encouraged to serve as a supplementary source for high-water users such as industry, parks, schools, and golf courses, as approved by the Washington State Department of Health.

**Policy WR 2.12**

Develop a program that encourages homeowners to explore innovative methods for recapturing and reusing surface water runoff and grey water, as approved by the Washington State Department of Health and the Kitsap Public Health District.

**Policy WR 2.13**

Maintain a comprehensive program of groundwater data gathering and analysis. The program shall include modeling, hydrogeologic and geologic studies, and monitoring of static water levels, water use, water quality, surface water flows, and acquisition of other data as necessary.

**NOTE: GOAL 3 HAS BEEN BROUGHT OVER FROM THE ENVIRONMENTAL ELEMENT WHERE THEY WERE LABELED “AQUATIC RESOURCES (GOALS 6 & 7)”**

**Aquatic Resources GOAL 4 WR-3 Surface Water Protection and Management**

**Preserve and protect the Island’s remaining aquatic resources. Achieve no net loss of ecological functions and processes necessary to sustain aquatic resources<sup>1</sup> including loss that may result from cumulative impacts over time.**

**Discussion:** ~~Aquatic resources include marine nearshore, wetlands, streams, lakes, creeks, and associated vegetated areas.~~

~~Over the past recent decades, awareness has grown of the importance of preserving and protecting aquatic resources particularly wetlands, in our natural and built environment. Aquatic resources have a number of important ecological functions, processes and values. These functions vary from wetland to wetland, stream to stream, but include providing water quality protection, flood plain control, shoreline stabilization, contributions to groundwater and stream flows and wildlife and fisheries habitat. Wetlands and streams Aquatic resources also have values as natural areas providing aesthetic, recreational and educational opportunities that need to should be preserved for future generations.~~

**AQ 1.1**

~~Achieve no overall net loss of the City’s remaining, regulated, aquatic resources.~~

**AQ 1.2 Policy WR 3.1**

~~Development shall not be approved in regulated wetlands, streams, or buffer areas, unless a property owner would be denied all reasonable use of property.~~

Development should not be approved in regulated aquatic critical areas or their associated water quality buffer unless the subject property is encumbered to such an extent that application of development regulations would deny all reasonable use of property.

**Discussion:** ~~In some cases, buffer configurations and widths can be modified to allow normal usage of legally established lots. In other cases, the development and implementation of a habitat management plan may provide resource protection to allow development. A variance process should be available to accommodate development in buffer areas. Reasonable use~~

<sup>1</sup> *Aquatic resources* – Marine nearshore, wetlands, streams, lakes, creeks and associated vegetated areas.

~~exception should be reserved for development in the critical area if no other process will allow for a reasonable use of the property. A Reasonable Use Exception (RUE) is a form of variance from regulations that allows some use of a legally established lot. A reasonable use must minimize the impact to critical areas. The RUE process is included in the critical areas regulations of the Bainbridge Island Municipal Code, which implements policies of this document.~~

### **AQ 1.3 Policy WR 3.2**

Require that vegetated buffers be maintained between proposed development and the aquatic resource in order to protect the functions and values of such systems. Degraded buffers should be restored to enhance their function. Allow ~~Reductions~~ in vegetated buffers ~~shall be allowed~~ only in areas where such reductions, if consistently applied, would not result in significant cumulative impacts to aquatic resources and fish and wildlife habitat.

### **AQ 1.4 Policy WR 3.3**

Require that buffers be retained in their natural condition wherever possible, while allowing for appropriate maintenance. Where buffer disturbance has occurred, require revegetation with appropriate species, with a preference for native species, to restore the buffers' protective values.

**Discussion:** Vegetated buffers facilitate infiltration and maintenance of stable water temperatures, provide the biological functions of flood storage, water quality protection and groundwater recharge, reduce amount and velocity of run-off, and provide for wildlife habitat.

### **AQ 1.5 Policy WR 3.4**

Ensure that development activities are conducted so that aquatic resources and natural drainage systems are maintained and water quality is protected.

### **AQ 1.6 Policy WR 3.5**

Prior to any clearing, grading, or construction on a site, all wetlands, streams, and buffer areas should be specifically identified and accurately located in the field in order to protect these areas during development. ~~After construction, permanent visual markers should be placed around the buffer areas.~~

~~**Discussion:** The purpose of this policy is to educate future home owners and users of aquatic resources (i.e., trail users) of the boundary of the aquatic resources.~~

### **AQ 1.7**

~~New development using flexible lot design should include any wetlands, streams, or required buffers in separate tracts or easements to remain in common ownership.~~

### **AQ 1.8 Policy WR 3.6**

Herbicides and pesticides ~~should~~ shall not be used in aquatic resource areas ~~wetlands, streams, and buffers areas~~, and should be discouraged in the areas that drain into them.

~~**Discussion:** Encourage alternatives to the use of herbicide and pesticide in areas adjacent to buffer areas by providing technical information and educational programs including the use of native vegetation.~~

#### **AQ 1.9 MOVE TO GOAL 4**

~~Develop a community wide program to educate Island residents about alternatives to using and disposing of herbicides, pesticides, and other household chemicals to reduce impacts to marine shoreline areas, wetlands, streams, and other environmentally sensitive areas.~~

#### **AQ 1.10 Policy WR 3.7**

~~Prohibit Access to regulated wetlands aquatic critical areas by farm animals should be discouraged. Agricultural activities within proximity of aquatic resources should complete a farm management plan addressing water quality and other natural resource protection must be in conformance with Best Management Practices.~~

#### **AQ 1.11 Policy WR 3.8**

~~Mitigation shall be required to compensate for unavoidable impacts to aquatic critical areas. Mitigation should be designed to achieve no net loss in functions and processes of aquatic resources. Restoration, creation or enhancement of wetlands, streams, and their buffers shall be required in order to offset the impacts of alteration of a wetland/stream or buffer area. Compensation for loss of aquatic resources should be determined according to function, acreage, type, location, time factors, and an ability to be self sustaining.~~

#### **Policy WR 3.9**

~~Promote watershed-based mitigation to meet federal regulations, improve mitigation success and better address the ecological **priorities-demands** of the island's watersheds.~~

#### **Policy WR 3.10 MOVE TO GOAL 1**

~~Identify the areas of the Island that are the most vulnerable to pollution from concentrations of fecal coliforms and nitrates (for example, from septic fields, agricultural activities, or fertilizers), and monitor those areas to determine if and when preventative or restorative measures are warranted.~~

#### **Policy WR 3.10**

~~Work with state and local health departments to evaluate the merits of new technologies such as greywater capture, package treatment plants and composting toilets, as alternatives to septic and sewer systems; and determine which of those systems should be allowed and/or encouraged to better protect the quality and capacity of the Island's ~~groundwater~~ surface water and nearshore environment.~~

#### **Policy WR 3.11**

~~The City will ~~e~~Consider the ~~implications~~ impacts of climate change, and ocean acidification, and their impacts when developing regulations or approving capital projects related to aquatic resources, including marine nearshore, wetlands, streams, lakes, creeks, associated vegetated areas and frequently flooded areas.~~

## **Wetlands**

### **AQ 1.12**

Maintain the Island's wetlands in their natural state by:

- ~~Preservation of native vegetation in and next to the wetlands.~~
- ~~Restoration of areas that have already been degraded.~~
- ~~Protection of areas that have not been disturbed.~~

### **AQ 1.13 MOVED TO GOAL 4**

~~The City should make every effort to purchase or obtain conservation easements for significant wetlands and areas of the shoreline critical to natural habitat.~~

## **Streams**

### **AQ 1.14**

Maintain the Island's streams and creeks in their natural state by:

- ~~Preservation of their courses, their banks, and the vegetation next to them.~~
- ~~Restoration of areas that have already been degraded.~~
- ~~Protection of areas that have not been disturbed.~~

### **AQ 1.15 Policy WR 3.12**

Allow stream relocation only where relocation would result in improved stream habitat ~~and or~~ when a property owner would otherwise be denied all reasonable use of the property.

### **AQ 1.16 Policy WR 3.13**

Degraded channels and banks should be rehabilitated by various methods (e.g., culvert replacement, volunteer efforts, public programs or as offsetting mitigation for new development) to restore the natural function of the riparian habitat for fish and wildlife.

### **AQ 1.17 Policy WR 3.14**

Resident and migratory ~~Anadromous~~ fish streams and adjacent land should be preserved and enhanced to ensure a sustainable fishery ~~the propagation of salmonid fish~~.

### **AQ 1.18 Policy WR 3.15**

Require the construction of public facilities ~~necessary roads and utility corridors~~ to avoid ~~wetland and stream crossings and encroachment into and~~ disturbances of aquatic resources.

### **Policy WR 3.16**

Maintain a comprehensive program of surface water **inventory**, data gathering and analysis. The program shall include monitoring and assessment of physical, chemical, and biological health of surface water ecosystems to include streams, **ephemeral streams**, lakes, wetlands, and marine waters. This may include water, flow, sediment, habitat, submerged aquatic vegetation, fish and shellfish tissue, aquatic species diversity and other ecosystem health indicators.

## **GOAL WR-4**

**Promote the maintenance, restoration and enhancement of aquatic resources.**

**AQ 1.9 Policy WR 3.17**

Develop a Support acommunity-wide program to educate Island residents about alternatives to using and disposing of herbicides, pesticides, and other household chemicals, to reduce impacts to marine shoreline areas, wetlands, streams, and other environmentally sensitive areas.

**Policy WR 3.18**

Promote and support volunteer or community-driven restoration projects.

**AQ 1.13 Policy WR 3.19**

The City should make every effort to purchase or obtain conservation easements for significant wetlands and areas of the shoreline critical to natural habitat.

**Policy WR 3.20**

Permanent visual markers should be placed around the buffer areas of protected aquatic resources.

**THIS GOAL MOVED TO UTILITIES ELEMENT**  
**Drinking Water Service Policies**

**GOAL WR-4 Stormwater Protection and Management**

**Stormwater is a resource that, rather than be captured and carried away as a wastestream, should be protected from pollutants and retained on site to replenish aquifers and maintain wetland and summer stream flows, preserving or mimicking the natural water cycle to the maximum extent practicable.**

**Policy WR 4.1**

Comply with all requirements of the City's National Pollutant Discharge Elimination System Phase II Municipal Stormwater Permit (NPDES Permit).

**Policy WR 4.2**

Continue to provide ongoing opportunities for the public to participate in the decision-making process involving the development, implementation and update of the City's Stormwater Management Program (SWMP) through advisory councils, public hearings, and watershed committees.

**Policy WR 4.3**

Continue to improve and maintain an education and outreach program designed to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts and encourage the public to participate in stewardship activities.

**Policy WR 4.4**

Continue to identify and eliminate sources of pollutants to the City's stormwater drainage system through proactive field screening techniques such as effluent monitoring, system inspections and

cleaning, and commercial and industrial business inspection, and through the enforcement of the City's Illicit Discharge Detection and Elimination ordinance.

#### **Policy WR 4.5**

Ensure development of, and adherence to, required public and private stormwater pollution prevention plans (SWPPPs) for public facilities, construction sites, and commercial and industrial landuse. Encourage the use of such plans where not specifically required.

#### **Policy WR 4.6**

Ensure development of, and adherence to, erosion and sediment control plans on all construction and development sites of any size.

#### **Policy WR 4.7**

Develop and actively enforce a strong Low Impact Development (LID) ordinance to require any and all methods and practices for new development and redevelopment to the maximum extent practicable and reasonable. LID is a stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation, and transpiration by emphasizing conservation, use of on-site natural features, site planning, and distributed stormwater management practices that are integrated into a project design.

#### **Policy WR 4.8**

Prioritize LID-based retrofit of public and private stormwater drainage systems and built assets through the inventory, management and fiscal planning process.

#### **Policy WR 4.9**

Incentivize LID retrofit of current built environment.

#### **Policy WR 4.10**

Use watershed and basin plans as a means to reduce stormwater impacts and nonpoint pollution.

#### **Policy WR 4.11**

Comply with all requirements specifically identified by the City's permit for any Total Maximum Daily Load (TMDL) in which the City is a stakeholder.

#### **Policy WR 4.12**

Conduct effectiveness monitoring and assessments to continue to adaptively manage stormwater to ensure optimal protection.

### **GOAL WR-5 Sanitary Sewer Residential On-Site Sewage Systems**

**Ensure that sewage is collected, treated, and disposed of properly to prevent public health hazards and pollution of groundwater, Island surface water, ~~including and the waters of the Puget Sound, and to promote recharge of the waters of Puget Sound.~~**

#### **Sanitary Sewer On-Site Systems Policies**

**Policy SSP 1.1**

~~Properly designed and maintained on-site wastewater disposal systems that are approved by the Kitsap County Health District or the State Department of Health are a long range solution to sewage disposal in most areas of the Island. However, there may be areas of the Island determined by the Kitsap County Health District to be unsuitable for on-site wastewater disposal systems due to site conditions (such as steep slopes, geological or soil conditions, lot size, or proximity to sensitive bodies of water).~~

**Policy WR 5.1 SSP 1.2**

Regulations and procedures of the Washington State Department of Health and the Kitsap ~~County~~ Public Health District shall apply to all on-site disposal systems. The City shall work with these agencies to assure regular inspection, maintenance and repair of all sanitary sewer and on-site systems located on the Island.

**Policy SSP 1.3**

~~Certification of adequate design and proper operation of septic systems shall be required prior to issuance of permits for remodeling of existing buildings.~~

**Policy SSP 1.4**

~~Prior to issuance of a building permit, on-site drainfield and reserve areas should be identified and marked, and a protection plan should be approved for any building lot.~~

**Policy WR 5.2 SSP 1.5**

The City shall request notification of all waivers or variances of Kitsap ~~County~~ Public Health Department District requirements, such as modification of setbacks, vertical separation, minimum lot size, reserve drainfield, etc., prior to issuance and subsequent modifications by the Kitsap Public Health District of an approved Building Site Application.

**Policy WR 5.3 SSP 1.6**

~~Kitsap County Health District approved Aalternative systems, such as sand filters, aerobic treatment, composting toilets, and living-systems etc., shall be allowed when approved by the Kitsap Public Health District. should be encouraged for sites where conventional on-site systems are not suitable or feasible.~~

**Policy WR 5.4 SSP 1.7**

Regulations shall require coordination between the on-site septic and storm drainage disposal systems designs to ensure the proper functioning of both systems.

**Policy WR 5.5 SSP 1.8**

The City shall assist the Kitsap ~~County~~ Public Health District in developing a program to require proper maintenance of all on-site waste disposal systems in order to reduce public health hazards and pollution. This program shall include periodic system inspection and pumping when necessary.

**Policy WR 5.6 SSP 1.9**

The City and the Kitsap ~~County~~ Public Health District should work together on a collaborative program to fund and pursue grants or low-cost loans for low and moderate-income households to repair failed septic systems. Incentivize maintenance, repair and replacement of systems for any income level.

**Policy WR 5.7 SSP 1.10**

On-site waste disposal systems serving more than one household should be allowed only with assurance of proper design, operation, management and approval from the Kitsap Public Health District.

**Policy WR 5.8 SSP 1.11**

The City may provide the service of operation and maintenance management for approved large on-site sanitary sewer systems (LOSS) or community sanitary sewer systems in coordination with the Kitsap ~~County~~ Public Health District.

**Policy WR 5.9 SSP 1.12**

The City should support the Kitsap ~~County~~ Public Health District in ~~establishing~~ maintaining and improving a public education program to foster proper construction, operation, and maintenance of on-site septic systems.

**Policy WR 5.10 SSP 1.13**

The City should support the Kitsap ~~County~~ Public Health District in developing and maintaining an ongoing inventory of existing on-site disposal systems to provide needed information for future studies.

**THIS GOAL MOVED TO UTILITIES ELEMENT**  
**Public Sanitary Sewer Policies**

**THIS GOAL MOVED TO UTILITIES ELEMENT**  
**Stormwater Management and Protection**

**GOAL WR-7 Monitoring Policies (Incorporated these in each of the sections above)**

**Policy WR 6.1 M-1.1**

The City should ~~Maintain~~ institute a comprehensive program of water resource data gathering and analysis. ~~The~~ Such a program shall include geologic studies and monitoring of static water levels, water use, water quality, surface water flows, and acquisition of other data as necessary.

**Policy WR 6.2 M 1.2**

~~Periodic monitoring and reporting of water quality and quantity of public water systems<sup>2</sup> is required by the Kitsap County Health District. Single units shall be encouraged by the City to provide well data to the Kitsap Public Utility District and the Department of Health regarding water level recordings, quality degradation, etc.~~

**Policy WR 7.3 M 1.3 DELETE: SAME AS POLICY 6.85.5**

~~The City should support the Kitsap County Health District in developing a program for proper maintenance of on site waste disposal systems in order to reduce public health hazards and pollution. This program should include periodic system inspection and pumping when necessary.~~

**Policy WR 7.3 M 1.4 DELETE: SAME AS POLICY 5.10**

~~The City should support the Kitsap County Health District in developing and maintaining an ongoing inventory of existing on-site disposal systems to provide needed information for future studies.~~

**GOAL WR-6 Contaminated Sites**

**Incorporate awareness of known contaminated sites such as former lumber treatment facilities, former fueling stations, and other pollutant-generating land use into all water resources management, land use planning, and capital facility management in order to remediate or clean up sites as effectively as possible, while preventing further impacts to water resources.**

**Policy WR 6.1**

The City will assemble and maintain an inventory of contaminated sites on the Island to track site location, contaminant(s) of concern, cleanup status, and potential to impact nearby surface or groundwater.

**Policy WR 6.2**

The City will collaborate with EPA, Washington State Department of Ecology, and the Kitsap Public Health District to address contaminated site assessment and cleanup efforts within the purview of those agencies to achieve remediation/cleanup as quickly as reasonably possible.

**Policy WR 6.3**

The City will consult the contaminated site inventory prior to property acquisition and weigh the cost/benefit of acquiring such a property.

**Policy WR 6.4**

The City will make every reasonable attempt to clean-up/remediate city-owned sites that are known to be or discovered to be contaminated.

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<sup>2</sup> A public water system is defined as a system with two or more hookups.

**Policy WR 6.5**

The City will consult the contaminated site inventory as part of development or redevelopment site plan review and take potential impacts into consideration when making land use decisions.

**Policy WR 6.6**

The City will consult the contaminated site inventory as part of capital infrastructure construction or maintenance.

**Policy WR 6.7**

The City will consult the contaminated site inventory as part of emergency management preparedness and response.

**GOAL WR-87 Public Education and Outreach**

**The City, in concert with federal, state, and local governments; public water purveyors; watershed councils; non-profits; citizens; and other appropriate entities, will continue to improve and implement a comprehensive public education and outreach program in the protection and management of all water resources.**

**Policy WR 7.1**

Educate and inform the public about the purpose and importance of aquatic environments, their vulnerabilities, and observed status and trends in ecological health and function.

**Policy WR 7.2**

Educate and inform the public about expected climate change impacts and how these will affect the Island's water resources and their beneficial uses.

**Policy WR 7.3PE 1.1**

~~The City, special districts, and water purveyors will develop and implement a comprehensive public education program in water resource management and protection. The program should address all aspects of water conservation and groundwater protection, including septic system maintenance, spill management and non point pollution impacts from farm animal/agricultural activities, and homeowner maintenance practices.~~

Educate the public about the characteristics of the aquifer system, the Island's dependency upon it, and its vulnerability to contamination (including seawater intrusion) and depletion.

**Policy WR 7.4PE 1.2**

~~Water conservation should be aggressively pursued by the City to promote the efficient use of water and to protect the resource. Water conservation programs should encourage the use of vegetation that prevents soil erosion, protects habitat for wildlife, retains surface water for recharge, and which does not require additional water during normally dry months. (Moved to Groundwater Protection and Management, 2.10.)~~

Educate the public about EPA's Sole Source Aquifer Designation Program and what this designation means for the Island's aquifer system.

**Policy WR 7.5 PE 1.3**

~~Water re-use and reclamation will be encouraged to serve as a supplementary source for high-water users such as industry, parks, schools, and golf courses, as approved by the Washington State Department of Health. (Moved to Groundwater Protection and Management, 2.11.)~~

Educate the public about well head protection and the critical importance of restricted chemical use or storage within the protection area around wells.

**Policy WR 7.6 PE 1.4**

~~The City should Ddevelop a program that encourages homeowners to reduce impervious surface area and explore innovative methods for recapturing and reusing surface water runoff and grey water, as approved by the Washington State Department of Health and the Kitsap County Public Health District. (Moved to Groundwater Protection and Management, 2.12.)~~

Educate the public about Critical Aquifer Recharge Areas (or other special conservation areas) and the purpose they serve to the aquifer system.

**Policy WR 7.7 PE 1.5**

~~The City should Ssupport the Kitsap County Health District in maintaining establishing a public education program to foster proper construction, operation, and maintenance of on-site septic systems.~~

Inform the public about how to report spills or illicit dumpings of hazardous waste or other pollutants and how to access information about location and status of contaminated sites.

**Policy WR 7.8**

Inform the public about how to find information about their well and how to properly maintain it.

**Policy WR 7.9**

Educate, and provide technical assistance to the public on methods to identify wasted water indoors and outdoors and practices to conserve water such as native landscaping (zenoscaping) and water use reduction or reuse.

**Policy WR 7.10**

Provide “how to” or “dos and don’ts” resources for streamside and shoreline landowners.

**Policy WR 7.11**

Provide information and guidance on water resources protection best management practices for commercial, industrial, residential, agricultural, and other land uses to prevent or reduce pollution. These practices include, but are not limited to, septic system maintenance; pet and livestock waste management; landscaping and gardening; farm plans; appropriate methods for use, storage and disposal of hazardous materials and other chemicals; on-site drainage system maintenance, and automotive care.

**Policy WR 7.12**

Provide and promote opportunities for citizen stewardship and involvement.

**Policy WR 7.13**

Provide LID technical guidance and workshops to businesses and contractors working on the Island.

## WATER RESOURCES ELEMENT EXISTING CONDITIONS AND FUTURE NEEDS

The following outlines the present conditions and understanding of the water resources of the Island and the future needs for restoration, enhancement, and protection of these resources.

### Groundwater

Groundwater is the sole source of drinking water on Bainbridge Island. It is found in underground reservoirs called aquifers. An aquifer is defined as a permeable sand and/or gravel formation that is capable of yielding a significant amount of water to a well. Wells on Bainbridge Island penetrate several distinct aquifers to allow withdrawal of drinking water by individual homeowners and municipal water purveyors. Most individual household wells penetrate to depths of less than 300 feet. Some residents are still using hand-dug wells less than 40 feet deep, completed in the permeable sediments known as the Vashon Recessional Outwash. Groundwater found at this level also feeds the base flow (summer flow) for Island streams. High capacity wells have been drilled as deep as 1,200 feet to find adequate marketable quantities of water for public and private water purveyors. While few in number, these wells produce a large portion of the Island's potable water. The Blakely Formation, a sedimentary bedrock formation, dominates the geology on the southern end of the Island and limits groundwater production in this area.

~~Aquifer systems on the Island have been mapped where there is sufficient geologic and hydrologic data available to define them. Our understanding of the Island's water resources has been enhanced through historical studies such as the *City of Bainbridge Island, Level II Assessment*<sup>4</sup> prepared by Kato & Warren and Robinson Noble in 2000 and monitoring and assessments completed in the last ten years by the City's Groundwater Management Program. This work includes the development, improvement, and utilization of a groundwater model; the development of a well monitoring network; and the implementation of long-term monitoring. The following information on existing conditions was drawn from the Level II Assessment by Hydrogeologists and Bainbridge Island residents Doug Dow, Russ Prior, and Mark Shaffer and is subject to change with further study. These aquifers are described in detail in the *Kitsap County Groundwater Management Plan*, Volumes I-II, dated April 1991, and more recently in the Level II Assessment. Brief descriptions of each aquifer system identified are as follows:~~

Bainbridge Island has six principal aquifers (Kato & Warren and Robinson & Noble, 2000), the extents of which were refined in the *Conceptual Model and Numerical Simulation of the Groundwater-Flow System of Bainbridge Island, Washington* (USGS, 2011). The six aquifers delineated below reflect updated understanding based on the United States Geological Survey (USGS) model. Additional details about the aquifers, including detailed maps and discussion regarding the extent, thickness, and other characteristics, can be found in the USGS report.

**Perched Aquifer (PA)**—This aquifer is comprised predominantly of Vashon Advance glacial outwash (Qva). The top of the aquifer ranges from sea level to more than 300 feet above mean sea level [ft MSL], with a thickness of 20 to 200 feet, and is utilized predominantly by domestic wells. About 4 percent of wells are reported to be completed in this unit.

**Semi-Perched Aquifer (SPA)**—This semi-perched aquifer exists within permeable interbeds (QC1pi) of the upper confining unit (QC1). The top of the aquifer ranges from sea level to more than 200 ft MSL, with a thickness of 10 to 50 feet. About 25 percent of wells are reported to be completed in this unit.

**Sea Level Aquifer (SLA)**—The Sea Level aquifer (QA1) is extensive, widely used, and mostly confined by QC1. The top of the aquifer ranges from -200 to 200 ft MSL, with a typical thickness of 25 to 200 feet. Fifty-three percent (53%) of wells are completed in the SLA.

**Glaciomarine Aquifer (GMA)**—This aquifer consists of water-bearing units within a thick sequence of fine-grained glaciomarine drift (QA2). The top of the aquifer ranges between more than -500 to -300 ft MSL, with a typical thickness of 20 to 300 feet. Several of the Bainbridge Island's production wells and at least 4 domestic wells are completed in this aquifer, representing about 2 percent of wells.

**Fletcher Bay Aquifer (FBA)**—The FBA (QA3) is the deepest identified aquifer on Bainbridge Island. Several large production wells are completed in this aquifer including the Fletcher Bay Well. The top of the aquifer ranges between more than -900 to slightly less than 600 ft MSL, with a typical thickness of 50 to 300 feet. While representing only about 1 percent of wells on Bainbridge Island, the metered KPUD and COBI FBA wells provide approximately 30 percent of the estimated total Island groundwater production.

**Bedrock Aquifer**—Less than 1 percent of the wells are completed in the sedimentary Blakely Harbor and Blakeley formations on the south end of Bainbridge Island.

Other wells on Bainbridge Island are either completed in water bearing zones within confining units or have an indeterminate aquifer completion zone.

COBI's monitoring well network is distributed across the six Bainbridge Island aquifers as follows: 16 in the Perched Aquifer, 7 in the Semi-Perched Aquifer, 32 in the Sea Level Aquifer, 5 in the Glaciomarine Aquifer, 9 in the Fletcher Bay Aquifer, and 1 in the Bedrock Aquifer. Aspect has updated the USGS groundwater model to include one new public supply well (KPUD North Bainbridge Well #10), for a total of 1,470 Group A and B public wells and exempt wells estimated to be active on Bainbridge Island.

### **Aquifer Concerns and Observed Conditions**

There are two primary concerns in protecting an aquifer system. These are quality and quantity.

#### **Quality**

##### **Seawater Intrusion**

One of the most common groundwater quality concerns for Islands or other saltwater shorelines is saltwater intrusion, which is the movement of saltwater into a freshwater aquifer. Where the source of saltwater is marine water such as Puget Sound, this process is known as seawater intrusion. Seawater intrusion occurs when the saltwater/freshwater interface moves inland from offshore. Freshwater is less dense than saltwater and so freshwater will float above saltwater. It is the pressure of the overlying freshwater that keeps the interface offshore. Excessive pumping

or overuse of the overlying freshwater will pull the interface toward the shoreline and possibly inland.

Some of our aquifers such as the shallow Perched and Semi-Perched aquifers are, generally, not in contact with saltwater and, therefore, generally not susceptible to seawater intrusion (an exception being where these aquifers are present near the shoreline).

The Sea Level Aquifer and our deeper aquifers can be susceptible. How susceptible can vary from aquifer to aquifer and, even within the same aquifer, depending upon local conditions.

In order to monitor for potential seawater intrusion, the most common practice is to measure chloride concentration and specific conductivity in groundwater. The City's Groundwater Management Program conducts annual chloride sampling in aquifers or wells susceptible to seawater intrusion. The established Early Warning Level, or EWL, is a chloride concentration  $>100$  mg/L or any 4 consecutive samples showing an increasing trend. To date, no wells in the City's monitoring network (including Kitsap Public Utility District and the City's Water Utility wells) exceeded the EWL, and no trends in chloride results were noted.

Chloride concentrations typically varied between 2 mg/L and 15 mg/L. Results in 2013 and 2014 in the Fletcher Bay Aquifer indicate slightly elevated chloride above historic baseline concentration, but not upward trending results. However, these should be monitored for continued changes.

Additionally, the City's groundwater model was run by USGS in 2010 and updated, recalibrated and run again by Aspect Consulting in 2016 to examine the potential for seawater intrusion under different water production (e.g., growth) scenarios. Model projections indicated no seawater intrusion. It should be noted that the model is designed to observe regional scale conditions, but the scale is not fine enough to assess very localized conditions such as one or two wells along the shoreline. Therefore, it is important to continue to monitor in vulnerable areas to catch potentially developing local conditions.

One example is an elevated chloride level measured in one well in the Seabold area in 2006 prior to the development of the City's Groundwater Management Program. As there was no established program in place at the time, there was no immediate follow up sampling/study to confirm seawater intrusion rather than a source other than seawater intrusion. Other common sources of chloride in groundwater include connate, or very-old, groundwater, septic system effluent, very hard groundwater, windblown sea spray, and recharge from irrigation, agricultural practices, and well disinfection. Chloride from any of these sources can result in elevated levels of chloride in an aquifer or well. Erroneously interpreting chloride concentration data without more detailed study may result in what is called a "false positive," where a test identifies a problem that does not in fact exist. That is why follow up investigation using site-specific assessments, is necessary before seawater intrusion can be confirmed. The City, the Kitsap Public Health District, and the Kitsap Public Utility District have teamed up to scope a localized, focused study in the Seabold area for potential funding in 2017.

### **Nitrate**

According to USGS research, nitrate is the most commonly found pollutant in groundwater nationwide, particularly in rural areas. Nitrate levels in drinking water above EPA's Maximum

Contaminant Level (or MCL) of 10 mg/L can have serious health effects primarily for infants, but also pregnant women and individuals undergoing treatment with antioxidant medications. Nitrate converts to nitrite in the digestive track which causes a condition call methemoglobinemia which lowers the oxygen in the blood stream. In infants this is called “Blue Baby Syndrome.” Brain damage, even death, can occur.

High nitrate levels in groundwater can also indicate the possibility that other contaminants may be present in the water such as bacteria or pesticides.

The typical sources of nitrate in groundwater include the application of fertilizers and pesticides, mostly from agricultural row crop farming, but commercial and residential use can be significant sources as well (such as lawns, parks, golf courses, ballfields, nurseries, and extensive gardens). Other sources include industrial processes and wastewaters, the land application of wastewater treatment plant sludge or biosolids, and on site septic system returns.

Although the Groundwater Management Program does not, at present, routinely monitor nitrate in groundwater, the City’s consultant examined nitrate data from the Kitsap Public Health District (KPHD) as part of the 2015-2016 assessment. Nitrate data were not found to exceed EPA’s MCL of 10 mg/L. Nitrate data for Group A and B public wells and exempt wells did not indicate any trends. Data submitted to KPHD for exempt wells are typically single results and are insufficient to calculate any trends. However, the maximum result during the last 15 years (2000–2014) was 5.17 mg/L in 2007. There are no apparent trends over time or geographically across the island.

### **Other Water Quality Concerns**

Generally, groundwater quality on the Island is very good. However, moderate levels of iron and manganese are naturally-occurring and common. Although neither of these minerals normally exceed EPA’s standards for drinking water, they can influence odor and taste and stain fixtures. Many public water systems and some private systems use filtration devices to remove or reduce these minerals.

### **Sole Source Aquifer Designation**

In 2013, the Bainbridge Island Aquifer System was designated a Sole Source Aquifer. Sole Source Aquifer Designation can apply to one aquifer or a system of multiple aquifers as is the case with Bainbridge Island.

The Sole Source Aquifer Designation Program is an EPA program authorized under the Safe Drinking Water Act of 1974. Section 1424(e) defines a sole source aquifer as “the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health.”

The EPA more specifically defines a sole or principal source aquifer as one which supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer, and that these areas have no alternative drinking water source(s) which could physically, legally, and economically supply all those who depend upon the aquifer for drinking water.

The program and designation are specifically designed to protect the quality of drinking water by helping to prevent contamination of the aquifer system. It provides this protection by raising the

level of awareness of the vulnerability of the aquifer system to contamination and our dependence upon the system as a drinking water supply.

Further, it requires additional EPA scrutiny of federally-funded projects. EPA inspects proposed projects for potential to contaminate the underlying aquifer, and, where appropriate, requires modifications and mitigations to prevent contamination.

However, this additional scrutiny applies to federally-funded projects only, and some projects such as highways and agriculture may be exempt if they meet criteria laid out in pre-established memorandums of understanding between the EPA, the Department of Transportation, the Department of Agriculture, or other agencies.

## Quantity

### Water Levels

The City's Groundwater Management Program currently monitors water levels in public and domestic wells Island-wide and in all six aquifers. Water level is an indicator for water quantity, and water level data are assessed against the program's early warning level, or EWL, for safe yield. The EWL for safe yield is a declining water level equal to or greater than ½ foot or more per year over a 10-year period that cannot be attributed to below average rainfall.

Individual well levels were reviewed for trends and compared against the EWL for safe yield. All wells were found to be below the EWL, and w- Water levels in the aquifers did not indicate any aquifer-wide trends, and only two individual wells were noted for further review.

An exempt well (25N/02E-21P03) in the Sea Level Aquifer showed an apparent average decline of approximately 0.56 feet/year over the 8-year period of record. However, further review of the water level measurement method history showed that it changed twice over the period of record from a steel tape to a sonic water level meter and, then, back to steel tape. The results collected via sonic water level meter appeared to be inconsistent compared to the results before and after using the steel tape, a more rudimentary but more reliable measurement method. Therefore, the sonic level readings were removed from the analysis. Once removed, the remaining data were below the EWL. Water-use data were not available for the well. However, the well owner indicated to COBI that no known change in water use occurred over the period of record. Continued long-term monitoring of this well using the steel tape method, as planned by COBI, will determine if there is a significant trend in water level decline over time.

Group A system well 'Island Utility Well #1' (25N/02E-34F07) in the Fletcher Bay Aquifer has shown an average decline of approximately 0.49 feet/year from 2004-2014. Although this does not yet exceed the EWL, it is very close to approaching it. Therefore, further monitoring and assessment are warranted. The well is situated next to two other Fletcher Bay Aquifer production wells (Island Utility Well #2, Island Utility Well #4) within the same water system. Production data have not been available for these wells, which makes it unclear if declines are related to changes in water use over the period. This system has just transitioned to operation by KPUD in mid-2015, and they are now reviewing available information to understand the current conditions within that water system. Additional data review will continue as the system infrastructure is updated to see if additional water use, system loss, or some other factor contributed to the historical decline. No other Fletcher Bay Aquifer wells monitored exhibited a similar declining trend, so it appears that this issue is specific to this well and not an aquifer-

wide concern.

### **Aquifer System Carrying Capacity**

The City, as a community, has yet to fully-define or characterize a sustainable aquifer system. Some initial characteristics are keeping the saltwater/freshwater interface offshore and saltwater out of the freshwater supply, and maintaining a balanced water budget for the aquifer system in order to prevent depletion.

To help provide some baseline information about these initial characteristics and expected impacts to the system due to climate change, Aspect Consulting conducted a system carrying capacity model assessment. The aquifer system carrying capacity assessment was based on those safe-yield indicators with EWLs described above using aquifer water levels and chloride concentration. The on-Island groundwater balance for the entire aquifer system (water budget) was also evaluated. The groundwater balance components do not have EWLs, but were evaluated to provide additional context on the predicted changes in groundwater conditions.

Water Level Changes: The following rates of groundwater level change were based on comparing current and predicted groundwater levels in 100 years:

- The Perched Aquifer system showed an average 0.10 foot per year of water level decrease at 25 locations simulated across the Island;
- The Semi-Perched Aquifer system showed an average 0.13 foot per year of water level decrease at 12 locations simulated across the Island;
- The Sea Level Aquifer system showed an average 0.09 foot per year of water level decrease at 49 locations simulated across the Island;
- The Glaciomarine Aquifer showed an average 0.02 foot per year of water level decrease at 6 locations simulated across the Island; and
- The Fletcher Bay Aquifer showed an average 0.15 foot per year of water level decrease at 9 locations simulated across the Island.

The predicted groundwater level changes over a 100-year timeframe were less than the COBI EWLs.

Saltwater/freshwater Interface: The predictive model results indicated that, despite these slow declines, groundwater from the Bainbridge Island aquifer system flows to Puget Sound and keeps the freshwater/seawater interface at a distance from the Bainbridge Island shoreline. All wells within the Bainbridge Island shoreline maintained chloride concentrations less than 100 mg/L, and no trend in concentrations was observed based on predictive model results.

Water Budget: Though the predicted groundwater level declines did not appear to induce seawater intrusion, they can have impacts on other components in the system such as discharge to streams to help maintain summertime flows. Therefore, it is important to examine the components **to**of the system's water budget.

Similar to a financial budget, a water budget represents a balance of inputs and outputs. If one component goes up or down, some other component(s) must go up or down to compensate. Groundwater balance components are typically difficult to measure directly (such as recharge and

groundwater underflow). Thus, this groundwater balance assessment relies on modeling results without actual field measurements.

Based on the 2011 USGS Report, the relationship between groundwater balance inputs and outputs for the Bainbridge Island aquifer system is shown in the following equation:

$$R_{ppt} = W_{ppg} + D_{sw} + (GW_{ps} - GW_{kp})$$

Where:

Inputs include:

R<sub>ppt</sub> is precipitation recharge.

Outputs include:

W<sub>ppg</sub> is groundwater withdrawals;

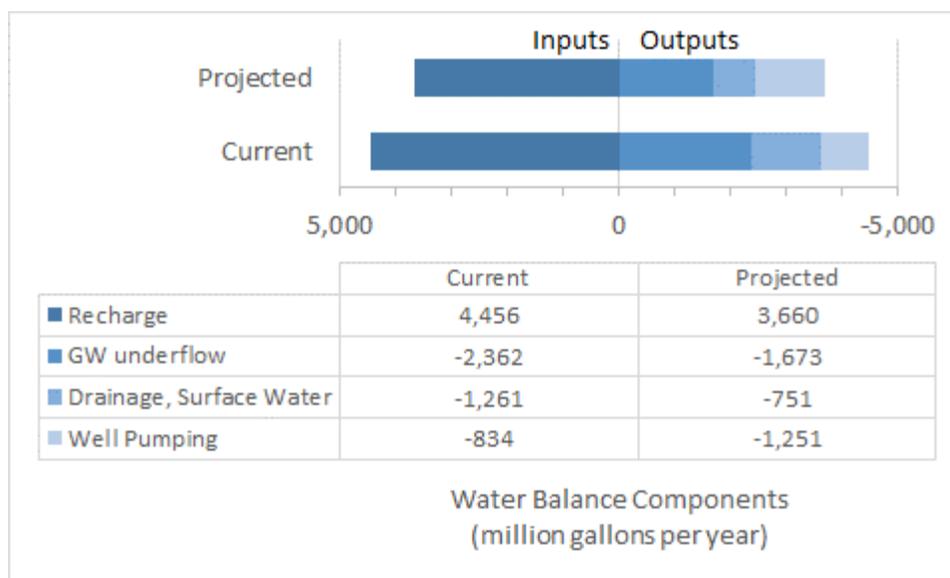
D<sub>sw</sub> is groundwater drainage to surface water (such as seeps to bluffs, creeks, streams, etc.);

and

(GW<sub>ps</sub> - GW<sub>kp</sub>) is the net lateral groundwater underflow (groundwater flow toward Puget Sound submarine seeps (GW<sub>ps</sub>) and groundwater flowing from the Kitsap peninsula in deeper aquifers (GW<sub>kp</sub>)).

To balance the modelled 50-percent increase in groundwater withdrawals and the 20-percent decrease in recharge due to climate change, the model showed projected changes in groundwater drainage to surface water (approximately 40-percent decrease) and lateral groundwater flow (approximately 24-percent decrease). Figure 6, excerpted from Aspect’s technical memorandum (*Bainbridge Island Groundwater Model: Aquifer System Carrying Capacity Assessment (Task 3 Scenario)*, 2016) compares the water balance components under current and projected conditions, based on model results.

The Bainbridge Island groundwater model results showed aquifer storage will be reduced by approximately 11,000 million gallons between current and projected conditions, reflecting the water level decreases described above. These groundwater balance results should be carefully interpreted, considering that the limited grid resolution may not be sufficient to accurately simulate groundwater discharge to surface water, and that the model has not been calibrated to observed flows.



### **Figure 6. Current and Projected Groundwater Balance Components.**

In this figure, well pumping (also called production) is the amount of water taken out of the system through wells (water use). The 50% increase in this component represents the expected increase in water use due to population growth.

Drainage to surface water is groundwater contribution to surface water features such as wetlands, lakes, and streams. The 40% reduction shown here may have an impact on maintaining summer baseflows and water temperatures. It is cautioned that the model as it is currently constructed is not specifically designed to provide an estimate as to how much stream flow will be impacted, but it could be modified to answer specific questions around this topic in future model runs.

Groundwater underflow is the amount of groundwater that seeps or discharges into Puget Sound at the shoreline. This value is influenced by the water levels in the aquifers, and the reduction shown here represents the impact from project water level decreases. The key importance to this component is that there has to be enough underflow to provide the pressure to keep the saltwater/freshwater interface offshore and prevent seawater intrusion.

Recharge is the portion of precipitation or rainfall that infiltrates the ground and reaches the aquifer. The estimated 20% reduction shown in the water balance accounts for climate change impacts.

The amount of groundwater underflow and discharge to streams is driven by the geological makeup of the aquifer system. Therefore, we have no direct ability to control these budget components. Rather it is the components of well pumping and recharge that we have more ability to directly control. We can reduce well pumping by reducing our water use through aggressive water conservation measures.

Though we cannot control precipitation patterns, we can take measures to enhance recharge through creative water capture and return measures (from the rain barrel scale to large scale infrastructure) and through protective land use measures such as low impact development and protection of aquifer recharge areas and other aquifer conservation areas.

#### **Aquifer Recharge Areas**

The identification of aquifer recharge areas is important both from the standpoint of groundwater quantity and quality. Aquifer recharge areas have geologic and soil conditions which allow high rates of surface water infiltration, which also means they are particularly susceptible to contamination. Increasing impervious surfaces through development reduces the amount of recharge available to the Island's aquifers. At the same time, runoff from impervious surfaces in developed areas contains increased contaminants. Efforts to protect and preserve the Island's natural water supply are warranted, as the resources that would be required to clean up after contamination or to secure a new source would be prohibitive.

Where development overlays aquifer recharge areas, special considerations need to be made to preserve the volume of recharge available to the aquifer and to protect the groundwater from contaminants such as nitrates, biocides and heavy metals found in septic systems and stormwater runoff. The most extensively used aquifer underlies 85% of the Island and

occurs under all zoning classifications.

To help the City assess recharge areas for special protection or designation, the model was run to determine recharge areas on the Island.

The Bainbridge Island model results indicate that areas across much of the Bainbridge Island area may have a critical recharging effect on aquifers that are sources of drinking water.

Primary findings include:

- Wells in shallow aquifers (including the Sea Level Aquifer and above) may withdraw water that originates as recharge relatively close to the well head and is younger than 100 years old. See figure below which shows the recharge areas for shallow aquifers (green squares).
- Wells in deep aquifers (including the Glacio-Marine Aquifer and the Fletcher Bay Aquifer) may withdraw water that originates as recharge relatively distant from the wellhead and is greater than 100 years old. See figure below which shows the recharge areas for deep aquifers (cross-hatched area).
- Not all groundwater on Bainbridge Island comes from recharge on Bainbridge Island. Model results indicate several wells tapping the deeper aquifers withdraw water that originates as recharge from areas on the Kitsap Peninsula and is greater than 1,000 years old.

Wells in bedrock were not simulated in the Bainbridge Island model as the method of water particle tracking was not appropriate for fractured bedrock. However, the bedrock is also considered a CARA, because water supply wells have been installed at various depths in bedrock, and potable water supply is from recharge. Bedrock recharge area is shown at hatched area.

### **Perched Aquifer (PA)**

~~The Perched Aquifer is a sand and gravel aquifer system under the major upland areas. It is found above 200 feet elevation and averages 90 feet in thickness. This aquifer underlies nine square miles (33%) of the Island's land surface and serves a number of domestic wells, with yields averaging 16 gpm. It is recharged from leakage through overlying sediments and discharges through underlying sediments into deeper aquifers or through springs where the aquifer intercepts land surface.~~

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<sup>+</sup>Subtitled *An Element of the Water Resource Study*, dated December 2000.

### **Semi-Perched Aquifer (SPA)**

~~The Semi Perched Aquifer is found under approximately 20 square miles (73%) of the land surface and averages about 30 feet in thickness. Where identified, it is found between 20 feet below and 100 feet above sea level. Approximately 25% of the domestic wells on the Island obtain an average of 19 gpm from this aquifer. However, uncharacteristically high yields from wells completed for Meadowmeer provide local yields over 300 gpm. The aquifer is recharged from leakage through overlying sediments and discharges into deep cut stream valleys, deeper aquifers, or to Puget Sound.~~

### **Sea Level Aquifer (SLA)**

~~The Sea Level Aquifer underlies 85% (23.5 square miles) of the Island's land surface but is noticeably absent south of Blakely Harbor where bedrock is found above sea level. The aquifer's average thickness is 110 feet. It is found from 40 feet above to 230 feet below sea~~

level. The Sea Level Aquifer is the Island's primary aquifer system, supplying water to approximately 53% of Island wells. Several of the Island's larger water purveyors obtain yields of more than 300 gpm from this aquifer. The average yield to the majority of (domestic) wells is 20 gpm. The aquifer accepts recharge from leakage through overlying sediment with natural discharge into Puget Sound. The City's wells at the head of Eagle Harbor are completed in the SLA.

### **Glaciomarine Aquifer (GMA)**

The Glaciomarine Aquifer is the shallower of the two deep aquifer systems present below Bainbridge Island. The data available confirms estimates of a depth of 400 to 760 feet below sea level under approximately 9.5 square miles (35%) of the Island and an average thickness of 120 feet. This aquifer may exist under a greater portion of the Island but lack of exploration precludes a definitive analysis. Only 2% of Island wells penetrate this fine-grained aquifer which yields an average of 18 gpm. Notable wells completed in the GMA are the City's Taylor Avenue well and the old and new wells completed at the former creosote plant site at Bill Point. Recharge to the aquifer is obtained through leakage from overlying sediments. Discharge is likely to deeper areas in Puget Sound.

### **Fletcher Bay Aquifer (FBA)**

The Fletcher Bay Aquifer is named for a pair of wells drilled into the deep aquifer system near Fletcher Bay. Several other wells are also completed in this permeable sand and gravel formation found from 690 to 1,280 feet below sea level. Because very few wells penetrate to this depth, the extent of the aquifer is not well defined. The aquifer is believed to underlie 55% (15 square miles) of the Island, mainly in the north central area. The City obtains the majority of the drinking water for the Winslow water system from the FBA through its Fletcher Bay and Sands Road wells. Yields from this aquifer average 330 gpm. Because of the depth of this aquifer, it has been theorized that it is connected to a similar aquifer identified at this depth on the Kitsap Peninsula. However, this connection has not been proven and recharge to the FBA can only have been assumed to originate on the Island through leakage from overlying sediments.

### *Hydrologic Cycle and the Water Budget*

Understanding the Island's water budget requires a look at the components of the water system. These components are defined as:

- Precipitation (rain or snow);
- Evapotranspiration: the combined amount of water that evaporates directly from the surface plus the amount that is taken up by vegetation and transpired back into the air;
- Runoff: the amount of water that flows directly off the Island via streams;
- Recharge: the amount of water that infiltrates into the aquifer; and
- Discharge: well pumpage, springs, streams and direct discharge into Puget Sound.

Although the variability of the natural system is great, educated assessments of the individual components are commonly used to predict sustainable use of the groundwater.

All water entering the Island's natural water system originates as precipitation. Only a portion of the precipitation is available for recharge because some of it exits the system before it percolates into the ground. Water exits the system through evapotranspiration,

surface runoff and discharge. The quantity of groundwater available for use is a function of the water balance: water entering the system is equal to water flowing out of the system, plus or minus the change in storage of water within the aquifer.

Precipitation on Bainbridge Island averages about 35 inches per year. In the absence of more precise water budget data it is generally thought that one-half to one-third of all precipitation is lost through evaporation from surface water and evapotranspiration from trees, plants and grass. It is estimated that approximately one-quarter to one-third of the precipitation is discharged to springs and stream flow or directly to Puget Sound.

The remaining precipitation infiltrates the surface sediments through direct absorption, supplemented to some extent through on-site stormwater infiltration, to recharge the Island aquifers. An unknown quantity of recharge is discharged from the Perched and Semi-Perched Aquifer, and to a lesser extent the Sea Level Aquifer providing (base) stream flow for fish and other wildlife. However, only a portion of the remaining recharge that reaches the major aquifers is available for use without serious disruption of the hydrologic system. Withdrawing too much water will cause aquifer water levels to decline and may cause seawater intrusion into the Sea Level Aquifer and deeper aquifers.

### **Hypothetical groundwater (aquifer) yield**

A simplistic approach for determining the “hypothetical groundwater yield” is the product of the general recharge rate times the recharge area (27.5 square miles or 17,600 acres) producing a volume of water in acre feet per year. The Level II study provided a hypothetical groundwater recharge of 19,000 acre feet per year (afy). However, it is recognized that the sustainable yield of an aquifer can be more accurately determined by monitoring aquifer water levels for many years. Such monitoring would include: flow metering of typical wells for water use or measurement of surface water diversions; well water monitoring; and stream flow monitoring. Management of the groundwater resources of Bainbridge Island will require balancing withdrawals from specific aquifers to sustainable water levels. Actual sustainable withdrawal rates are unknown.

### **Aquifer Recharge Areas**

Springs and streams reflect a natural system of discharge for Island groundwater. All of the remaining land surface (except for portions of the southern end of the Island) serves as aquifer recharge area. Soil type, slopes, vegetative cover and impervious surfaces significantly affect the distribution of recharge. The identification of aquifer recharge areas is important both from the standpoint of groundwater quantity and quality. Aquifer recharge areas have geologic and soil conditions which allow high rates of surface water infiltration, which also means they are particularly susceptible to contamination. Increasing impervious surfaces through development reduces the amount of recharge available to the Island’s aquifers. At the same time, runoff from impervious surfaces in developed areas contains increased contaminants. Efforts to protect and preserve the Island’s natural water supply are warranted, as the resources that would be required to clean up after contamination or to secure a new source would be prohibitive.

Where development overlays aquifer recharge areas, special considerations need to be made to preserve the volume of recharge available to the aquifer and to protect the groundwater

from contaminants such as nitrates, biocides and heavy metals found in septic systems and stormwater runoff. The most extensively used aquifer underlies 85% of the Island and occurs under all zoning classifications.

The Recharge Areas Map (Figure 5) was developed by Russ Prior with assistance from Mark Shaffer, Doug Dow and Kitsap County PUD. This recharge map is based on a spreadsheet model produced by Robinson and Noble for the Level II Assessment (December 2000). Figure 5 identifies high, moderate and low aquifer recharge areas on Bainbridge Island. Generally recharge depends on the ease with which precipitation can move from the land surface to the aquifer based on the types of conditions in the area. The elements used in the Level II spreadsheet model include: amount of rainfall, surficial soil types (based on USDA Soil Survey of Kitsap County), slope, ground cover and water holding capacity.

Aquifer recharge areas have been mapped for the Island using available assessment information described in the Level II Assessment. The mapping identifies high, moderate, and low aquifer recharge areas in accordance with the following definitions:

Susceptibility	Characteristics
High	Greater than 20 inches of infiltration into the groundwater system per year—generally areas with high recharge have permeable surficial soils and shallow slopes.
Moderate	Between 10 and 20 inches per year of infiltration into the groundwater system—includes many areas underlain by Vashon till which allows significant quantities of infiltration.
Low	Less than 10 inches per year of infiltration into the groundwater system—generally areas with low recharge have surficial soils of low permeability and steep slopes.

Source: 2000 Bainbridge Island Level II Assessment

### **Aquifer Concerns**

The Island has many shallow and deep aquifers, some of which may be connected vertically as well as horizontally. No data has been developed to date to determine how much water can be withdrawn from any of the Island aquifers without causing over-drafting. Monitoring is important to further our understanding of the Island's aquifer systems.

Based on current water quality data, the 2000 *Bainbridge Island Level II Assessment* concluded there was no evidence of extensive seawater intrusion on the Island nor was there evidence of increasing salinity

## Surface Water

The surface waters of Bainbridge Island provide aesthetic, recreational, economic, and ecological benefits to Island citizens. Boating, fishing, and shellfish harvest are important recreational and economic activities, and the Island's streams, lake, harbors, shorelines, and wetlands provide habitat for a diversity of fish and wildlife species.

The harbors and numerous coves around the Island host anchorage, moorage, marinas, boat launches, waterfront access, and swimming beaches. Eagle Harbor, specifically, hosts marinas which provide permanent moorage for live-aboards and an open water mooring and anchoring area for the Island's live-aboard community.

In addition to providing forage and habitat for salmon, otter, sea lions, and waterfowl and swimming, boating, and fishing areas for people, the majority of the Island's shorelines and adjacent nearshore areas are designated commercial shellfish growing and harvest areas. Many shoreline residents recreationally harvest shellfish such as clam and geoduck as well.

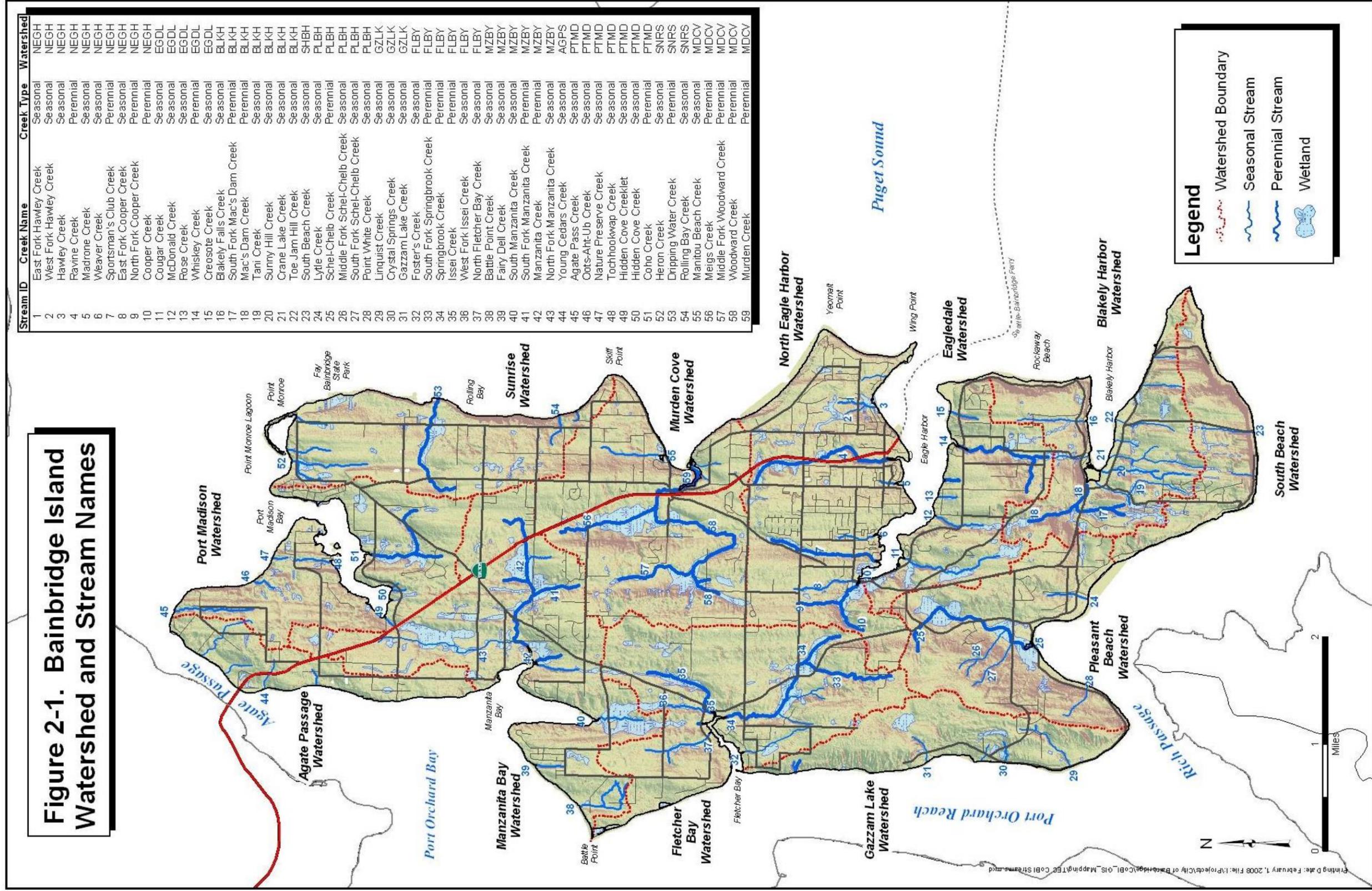
## Watersheds

Surface water flows from high geographic points to lower elevations collecting in streams and wetland systems within the watersheds of the Island. Watershed boundaries are determined by Island topography where ridgelines define the boundaries.

Bainbridge Island contains twelve distinct watersheds with 59 seasonal and perennial streams that contribute fresh water to Puget Sound (see Figure 2.1 below excerpted from the Water Quality and Flow Monitoring Program Final Monitoring Plan, 2008). Five harbors, twelve estuarine wetlands, one lake, 1,242 acres of wetland, 965 acres of tidelands (between mean high and mean low tide), and 53 miles of shoreline comprise the remainder of the surface water system.

Each surface water feature serves a critical function in preserving hydrologic connectivity within the watershed. Recent research is finding that even those features that are seasonal such as ephemeral or intermittent streams and seasonally-flooded wetlands are critical faunal and floral habitat providers, biogeochemical processors, and connectivity corridors.

**Figure 2-1. Bainbridge Island Watershed and Stream Names**



### **Land cover **MOVED TO HABITAT BELOW.****

Bainbridge Island encompasses an area of 17,471 acres, or approximately 28 square miles. The primary land cover is tree cover at 73%, or 12,760 acres. Grass/scrub lands, developed areas with impervious surfaces and other coverages comprise 15%, 11% and 1%, respectively, with combined coverage of 4,712 acres (Table 1 next page).

Land use type does not vary widely by any great degree across the island due to a low percentage of industrial or commercial land development and the lack of available or developed farm/range land. The island's land use is consequently dominated by residential uses (75%). Other land uses such as recreation land (7%), agricultural (6%), transportation corridors (6%), commercial/light manufacturing (2%), forest land use (2%) and public facilities (2%), make up the remainder of the land use as a percentage of the total acreage on the island. With a total overall population of 23,630 the greatest population density occurs at the towns of Winslow, Island Center, Lynwood Center and around the coastline of the island. Outside of urbanized areas, the Island is generally characterized by scattered, small communities, homes on acreage, and large parcels of undeveloped land.

### **Stream type**

In 2014, the Wild Fish Conservancy (WFC) completed stream typing for Bainbridge Island as part of the [West Sound Watersheds, Kitsap Peninsula \(WRIA-15\) Stream Typing Project](#).

WFC's website states, "Water typing is the state sanctioned process of mapping the distribution of fish and fish habitat. Regulatory water type maps are used to regulate land use decisions adjacent to streams, ponds, and wetlands. Because existing (modeled) regulatory maps often significantly misrepresent the presence, location, and extent of fish habitat, the effectiveness of state and local government fish habitat protection regulations is compromised. More information about the water typing process and its significance is available at: <http://wildfishconservancy.org/resources/maps/what-is-water-typing.>"

WFC classified fish and fish habitat in Island streams and ground truthed regulatory maps of stream presence and location, identifying an additional # previously unknown/unmapped miles of stream on Bainbridge Island. The City is currently using WFC's updated stream data.

## **Stormwater**

Stormwater is generated when the ground becomes saturated and rainwater drains overland to the nearest surface water body or rainfall encounters hard or impervious surfaces and drains into manmade drainage ditches, catch basins, and pipes.

There is no question that stormwater runoff is the leading transport pathway of pollution into Puget Sound and its associated wetlands, creeks, streams and rivers. Not only does it carry transports pollutants such as trash; gas, and oil, and metal-laden sediment from road surfaces and parking lots; as well as residues from pesticides, fertilizers, and other chemicals used in lawn care; as well as and animal waste in agricultural areas, but The amount of stormwater runoff generated from road, roof, parking lot, and other impervious surfaces created by urban developments can be of a higher volume than what existed in the natural state. the volume of stormwater generated by impervious surfaces has tremendous force and can cause erosion if allowed to flow into natural drainage systems provided by and damage to in-stream and wetland habitat.

Peak flows that follow immediately after a storm can be much greater than existed when the land was in a natural state with vegetative cover. Excessive stormwater runoff may causeing streams to expand and overflow; and creating flooding conditions on adjacent lands.

Therefore, stormwater has long been considered, at best, a nuisance and flooding hazard to be collected and delivered downstream as quickly and efficiently as possible and, at worst, a waste stream to be collected and removed from the watershed. Existing land development methods and stormwater drainage system infrastructure are designed to do just that.

However, as early as the year 2000, water-starved areas of the country started to view stormwater as a vital resource rather than a waste stream, first by limiting its generation by reducing impervious surface; then, retaining and infiltrating it on site where feasible; and, lastly, protecting it from pollution, capturing it, and reusing it to the maximum extent possible. On June 16, 2015, the California State Water Resources Control Board adopted an order that provides a framework to promote integrated stormwater capture and reuse to improve water quality, protect local beaches, and supplement water supplies. The new [stormwater discharge] permit focuses on using stormwater as a resource and encourages green infrastructure and groundwater recharge (*Stormwater Report, Water Environment Federation, June 2015*).

The Pacific Northwest is not considered water-starved and local conditions are not nearly so dire as in California. However, climate change predictions suggest that local water supplies likely will see some reduction in recharge; rainfall patterns will further tax existing, ailing, and undersized drainage infrastructure and possibly diminish summertime stream flows and water quality; and warming temperatures will increase summertime stream temperatures. Therefore, local municipalities are, also, rethinking their view of stormwater and many have already started evaluating and planning for climate change, especially in stormwater drainage system maintenance and retrofit. In 2009, Kitsap County adopted resolution 109-2009, *Creating Kitsap County "Water as a Resource" Policy*, in which the county resolved to treat all of its waters, including stormwater, as a vital resource, incorporating low impact development and water capture and reuse into all of its landuse and utility management planning.

The volume of stormwater generated by impervious surfaces has tremendous force and can cause erosion if allowed to flow into natural drainage systems provided by streams and wetlands. Stormwater can loosen soil and stream banks in the natural drainage way causing suspended particulates to flow into other bodies of water.

Excessive stormwater runoff may also cause streams to expand and overflow, creating flooding conditions on adjacent lands. Any sedimentation will eventually drop as the water slows down and loses its force, causing siltation and the degradation of wetlands, particularly of salmon spawning habitat.

Stormwater runoff from driveways and parking lots also transports pollutants such as gas and oil as well as residues from pesticides, fertilizers, and other chemicals used in lawn care, as well as animal waste in agricultural areas. Non point source pollution accumulates as water runs over hard surfaces and is carried to the nearest body of water.

## Observed Surface and Stormwater Conditions

### Department of Ecology Surface Water Quality Assessment

Every two years the State Department of Ecology (Ecology) identifies polluted water bodies and submits a list of impaired water bodies, called a 303(d) list, to the Environmental Protection Agency (EPA) for approval in accordance with the federal Clean Water Act. This assessment is based on the assumption that each water body should support certain designated uses. Some of these uses are swimming and boating, fish and shellfish rearing and harvest, and wildlife habitat.

Ecology designates water bodies that frequently or consistently fail to meet standards or criteria as *Impaired*. Water bodies that only infrequently fail to meet standards are classified as *Waters of Concern* or *Sediments of Concern* if the sampled matrix was sediment. These assessments use water, fish/shellfish tissue, habitat, and sediment data.

Ecology's [2012 Water Quality Assessment](#) determined that one stream, one harbor, two coves, one lagoon, and three Island-adjacent nearshore marine areas on Bainbridge Island were *Impaired* by one or more pollutants and were not able to provide the full recreational, habitat, and aesthetic benefits they once offered.

An additional one bay, one harbor, and 28 other Island-adjacent nearshore marine areas were identified as *Waters of Concern* and/or *Sediments of Concern* for periodic excursions beyond the allowable standard or criteria for one or more pollutants.

Ecology's proposed [2014 Water Quality Assessment](#) (under review by the EPA at the time of this printing), designated an additional two streams as *Impaired* by at least one pollutant.

Tables 2-5 on the following pages detail those water bodies classified as *Impaired* or of *Concern* according to the analyzed matrix (water, tissue, habitat, and sediment, respectively).

It should be noted that much of the sediment data were collected prior to 2003, some as early as the 1990's. These may not be representative of current conditions. Further, many of the identified pollutants are legacy pollutants resulting from historic land use such as large-scale, row-crop farming and the active lumber industry at the turn of twentieth century. The City's sediment sampling data collected in 2008 and 2013 may be more representative of current inputs to these water bodies. These data are summarized in the next section, *City Surface Water Quality Assessment*.

One example of legacy pollution is the former [Wyckoff Creosote Facility](#) located at the mouth of Eagle Harbor. Sites where sediments are contaminated by hazardous waste are regulated and managed through the Model Toxics Control Act (MTCA). Sites such as the former Wyckoff Creosote Facility, due to the complexity and size, are normally addressed through [EPA's Superfund program](#).

However, water bodies listed on the 303(d) list require TMDLs (Total Maximum Daily Loads) where identified sources of the pollutant of concern are allocated a pollutant load reduction in order for that water body to meet criteria. Currently, the City is a stakeholder in the [Sinclair and Dyes Inlets Fecal Coliform Bacteria Total Maximum Daily Load \(TMDL\)](#). Four of the Island's watersheds are captured within the TMDL drainage basin boundaries (Fletcher Bay, Gazzam Lake, Pleasant Beach, and South Beach Watersheds).

**Table 2. Ecology Approved 2012 and Proposed 2014 Water Quality Assessment - Water**

Waterbody	Parameter or Pollutant	2012	2014 (Proposed)
Eagle Harbor (Middle)	Bacteria	Impaired	Impaired
	Copper	Waters of Concern	Waters of Concern
Eagle Harbor (Inner)	Dissolved Oxygen	Waters of Concern	Waters of Concern
	Temperature		
Agate Passage - Bridge	Dissolved Oxygen	Waters of Concern	Waters of Concern
Agate Passage - Agate Point	Dissolved Oxygen	Waters of Concern	Waters of Concern
	Temperature		
Rich Passage - Pleasant Beach Cove/Pleasant Beach	Bacteria	Impaired	Impaired
	Dissolved Oxygen		
	pH	Waters of Concern	Waters of Concern
Rich Passage - Point White	Dissolved Oxygen	Waters of Concern	Waters of Concern
Rich Passage - Fort Ward	Bacteria	Waters of Concern	Waters of Concern
	Dissolved Oxygen		
	pH		
Port Orchard Passage - Lower Crystal Springs	Dissolved Oxygen	Impaired	Impaired
	Bacteria		
	Temperature	Waters of Concern	Waters of Concern
Port Orchard Passage - Upper Crystal Springs	Bacteria	Waters of Concern	Waters of Concern
Port Orchard Passage - Fletcher Bay	Bacteria	Waters of Concern	Waters of Concern
Port Orchard Passage - Battle Point	Bacteria	Waters of Concern	Waters of Concern
Port Orchard Passage - South of Rolston	Bacteria	Waters of Concern	Waters of Concern
Puget Sound (Central) - Blakely Harbor (Mouth)	Bacteria	Waters of Concern	Waters of Concern
Puget Sound (Central) - Blakely Harbor (Middle)	Bacteria	Waters of Concern	Waters of Concern
Puget Sound (Central) - Blakely Harbor (Inner)	Bacteria	Waters of Concern	Waters of Concern
Puget Sound (Central) - Murden Cove	Bacteria	Impaired	Impaired
Puget Sound (Central) - Rolling Bay	Bacteria	Waters of Concern	Waters of Concern
Port Madison Bay - Point Monroe	Bacteria	Waters of Concern	Waters of Concern
Port Madison Bay - Mouth	Bacteria	Waters of Concern	Waters of Concern
Springbrook Creek	Bacteria	Impaired	Impaired
Ravine Creek	Bacteria	---	Impaired
Murden Creek	Bacteria	---	Impaired

**Table 3. Ecology Approved 2012 and Proposed 2014 Water Quality Assessment - Tissue**

Waterbody	Parameter or Pollutant	2012	2014 (Proposed)
Eagle Harbor (Outer)	Benzo(a)pyrene	Impaired	Impaired
	Benzo(a)anthracene		
	Benzo[b]fluoranthene		
	Benzo[k]fluoranthene		
	Chrysene		
	Dibenzo[a,h]anthracene		
	Indeno(1,2,3-cd)pyrene		
Puget Sound (Central) - Rockaway	PCB	Impaired	Impaired
	Chrysene		

**Table 4. Ecology Approved 2012 and Proposed 2014 Water Quality Assessment - Habitat**

Waterbody	Parameter or Pollutant	2012	2014 (Proposed)
Puget Sound (Central) - Murden Cove	Habitat	Impaired	Impaired
Port Madison - Point Monroe Lagoon	Habitat	Impaired	Impaired

**Table 5. Ecology Approved 2012 and Proposed 2014 Water Quality Assessment - Sediment**

Waterbody	Parameter or Pollutant	2012	2014 (Proposed)
Eagle Harbor (Outer)	1,2,4-Trichlorobenzene	Impaired	Impaired
	1,2-Dichlorobenzene		
	1,4-Dichlorobenzene		
	2,4-Dimethylphenol		
	2-Methylnaphthalene		
	2-Methylphenol		
	4-Methylphenol		
	Acenaphthene		
	Acenaphthylene		
	Anthracene		
	Arsenic		
	Benzo(a)anthracene		
	Benzo(a)pyrene		
	Benzo(g,h,i)perylene		
	Benzo(a)fluoranthene (b+k+j), Total		
	Benzoic Acid		
	Benzyl Alcohol		
	Bis (2-Ethylhexyl) Phthalate		
	Bioassay		
	Butyl Benzyl Phthalate		
	Cadmium		
	Chromium		
	Chrysene		
	Copper		
	Dibenzo(a,h)anthracene		
	Dibenzofuran		
	Diethyl Phthalate		
	Dimethyl Phthalate		
	Di-n-butyl Phthalate		
	Di-n-octyl Phthalate		
	Fluoranthene		
	Fluorene		
	Hexachlorobenzene		
Hexachlorobutadiene			
HPAH			
Indeno(1,2,3-c,d) Pyrene			
Lead			
LPAH			
Mercury			
Naphthalene			
N-Nitrosodiphenylamine			
PCB			
Pentachlorophenol			
Phenanthrene			
Phenol			
Pyrene			
Silver			
Zinc			
Rich Passage - Pleasant Beach	Benzoic Acid	Sediments of Concern	Sediments of Concern
Rich Passage - Pleasant Beach Cove	Benzoic Acid	Sediments of Concern	Sediments of Concern
Port Orchard Passage - Upper Crystal Springs	Benzoic Acid	Sediments of Concern	Sediments of Concern
Port Orchard Passage - South of Rolston	1,2,4-Trichlorobenzene	Sediments of Concern	Sediments of Concern
	1,2-Dichlorobenzene		
Port Orchard Passage - Manzanita Bay	Benzyll Alcohol	Sediments of Concern	Sediments of Concern
	1,2,4-Trichlorobenzene		
Puget Sound (Central) - Wing Point	1,2-Dichlorobenzene	Sediments of Concern	Sediments of Concern
	1,2-Dichlorobenzene		
	1,2,4-Trichlorobenzene		
	1,4-Dichlorobenzene		
	2,4-Dimethylphenol		
Puget Sound (Central) - Rockaway	Hexachlorobenzene	Sediments of Concern	Sediments of Concern
	Pentachlorophenol		
	1,2-Dichlorobenzene		
	1,2,4-Trichlorobenzene		
	1,4-Dichlorobenzene		
	2,4-Dimethylphenol		
	Hexachlorobenzene		
Hexachlorobutadiene			
Puget Sound (Central) - Blakely Harbor (Middle)	Naphthalene	Sediments of Concern	Sediments of Concern
	N-Nitrosodiphenylamine		
	1,2-Dichlorobenzene		
	1,2,4-Trichlorobenzene		
	1,4-Dichlorobenzene		
	2,4-Dimethylphenol		
	Dibenzo(a,h) anthracene		
	Hexachlorobenzene		
Hexachlorobutadiene			
	N-Nitrosodiphenylamine		
	Pentachlorophenol		

### Commercial Shellfish Growing Area and Recreational Harvest Area Assessment

Department of Health (DOH) routine bacterial and biotoxin assessments of recreational shellfish harvest areas and commercial shellfish growing and harvest areas demonstrate a significant loss of designated uses. The entire east, north, and west shorelines are closed to recreational butter and varnish clam harvest, and the southern shoreline is closed to recreational varnish clam harvest. Only one small area around Point White is open to recreational harvest.

Most commercial shellfish growing area around the Island is open to harvest. However, two segments of commercial shellfish growing areas along Agate Passage and Crystal Springs are currently closed due to bacterial contamination in shoreline drainages to include private drains, stormwater outfalls, and streams. Point Monroe Lagoon is restricted for commercial harvest, requiring that shellfish be transplanted to approved growing area waters for a specified amount of time in order to naturally cleanse themselves of contaminants before they are harvested for market. Commercial Geoduck Tract 07850 at Restoration Point was closed four times in 2012-2013 for biotoxin. Commercial Geoduck Tract 07000 at the mouth of Manzanita Bay has been closed 14 times in the last five years for biotoxin, and is currently closed at the time of this printing.

In addition to annual commercial growing area reports, DOH publishes an annual threatened areas report to bring attention to monitoring sites where bacteria concentrations are close to exceeding the criteria. The 2015 report (based upon 2014 data) identified one monitoring site (#457) immediate outside of the north side of the mouth of Fletcher Bay as a threatened site and one site (#418) along the southern shore of Blakely Harbor as a site of concern.

### Swimming Beach Assessment

The Departments of Ecology and Health's BEACH Program conducts swimming beach monitoring for bacteria during the swimming season (Memorial Day through Labor Day). Typically, bacteria levels in marine waters tends to be fairly low in the summertime. In fact, most beach closures on the Island have been associated with sanitary sewer spills such as the Kitsap Sewer District #7 Fort Ward spill in 2012, and the City's sewer main breaks along the north side of Eagle Harbor in 2014.

In 2015, three of the Island's swimming beaches (Fay Bainbridge Park, Joel Pritchard Park, and Eagle Harbor Waterfront Park) were monitored. Bacterial concentrations in 2015 were acceptable, and there were no beach closures in 2015.

### City Surface Water Quality Assessment

In 2007, the City received a Centennial Clean Water Fund Grant from Ecology to design and implement a long-term monitoring program to assess the ecological health of the Island's freshwater (streams and lakes), marine water (harbors, bays, and nearshore areas), and stormwater discharge.

The Water Quality and Flow Monitoring Program (WQFMP) was pilot-tested in 2007-2008 and expanded to Island wide long-term status and trends monitoring in 2010. The program

currently conducts routine monitoring for stream and stormwater chemistry, stream and nearshore sediment chemistry, rainfall, stream and stormwater flow, and stream biodiversity (benthic macroinvertebrates). Every five years, the program also conducts targeted storm event monitoring to assess stormwater runoff impacts in streams and nearshore marine waters.

Although the program's [Final Monitoring Plan](#) is comprehensive, staffing and funding are limited. Current monitoring gaps are stormwater best management practice effectiveness monitoring, lake monitoring, marine biological assessments (fish, aquatic macrophytes, phytoplankton, and benthic invertebrates), routine marine water chemistry, and freshwater and marine habitat assessments.

The program released its first edition [State of the Island's Waters](#) report in 2012 which summarized findings from data collected through Water Year 2011 (September 2011). Program staff are currently assessing data collected through Water Year 2015 (September 2015) and working on a second edition of the report. The following summary reflects assessments completed at the time of this printing.

#### *Bacteria*

All of the seven nearshore marine waters monitored during WY2014 targeted storm event monitoring failed to meet the state criteria for fecal coliform bacteria, while 13 (86%) of the 15 streams monitored on a monthly basis failed to meet the state criteria in WY2015. Given these results and the number of state listings for bacterial impairment (see Table 2 above), bacteria has proven to be the most prevalent pollutant in freshwater and marine water resources Island wide.

As described above in [Commercial Shellfish Growing Area and Recreational Shellfish Harvest Area Assessment](#), commercial shellfish harvest areas along approximately twelve miles of shoreline are currently closed due to elevated bacteria in shoreline drainages, and nearly the entire Island is closed to recreational harvest of varnish and butter clams due to the biotoxins usually associated with bacteria.

Bacterial contamination is common to every season and every watershed, urban or rural, and its sources are as varied as the landscape itself. In rural watersheds, the most common sources of bacteria are failing septic systems, improperly-managed pet and livestock wastes, and wildlife. In urban watersheds, the most common sources are improperly-managed pet waste, improper food handling, poorly-maintained food waste receptacles, failing septic systems, poorly-maintained or failing stormwater drainage infrastructure (private and public), failing sanitary sewer infrastructure, and illicit cross-connections between the sanitary sewer and the stormwater drainage systems.

In marine environments, common sources of bacteria aside from discharges from upland sources are improper boat waste disposal, failing sanitary sewer infrastructure, and wildlife.

### Nutrients

Although they are essential to all plant, human, and aquatic life, phosphorus and nitrogen concentrations, if excessive, can overstimulate growth of aquatic vegetation and algal blooms. Applying Ecology's Water Quality Index using the ratio of total nitrogen to total phosphorus, Island streams generally rate of low to moderate concern during the wet season and moderate to high concern during the dry season relative to other Puget Lowland streams. In 2013, a year of below average rainfall, most streams rated of moderate concern even in the wet season, and 3 streams reached a high level of concern. During the drought extreme dry period in the summer of 2015, 7 streams climbed to a level of high concern.

Nuisance algal blooms have increased along eastern shorelines and harbors (see Ecology's [Eyes Over Puget Sound](#)). These blooms are not only aesthetically unpleasant, but dying and decomposing algae use up aquatic life-sustaining oxygen and render aquatic habitat unusable such as in Murden Cove and Point Monroe Lagoon which are covered year-round with ulvoid macroalgae (see Table 4 above).

Though more study is needed to establish natural background levels for Island streams and it is well-understood that a significant amount of nitrogen-loading in Puget Sound comes from the ocean through the Strait of Juan de Fuca via tidal action, ecosystems with naturally high background levels are particularly sensitive to any additional loading from human sources.

Aside from the natural sources of nutrients from forests and wetlands, human inputs include agricultural and residential fertilizers, phosphate-based laundry detergents and commercial washing agents, yard waste such as grass clippings and other vegetation dumped along shorelines and streams, failing residential septic systems (in some cases even functioning systems), failing municipal sewer infrastructure, and improperly handled pet and livestock waste.

### Ammonia

Ammonia is considered a priority pollutant by the EPA, since it is deadly toxic to both humans and aquatic life. Therefore, there are established acute and chronic criteria for ammonia in surface waters. Acute criterion is the concentration of a substance at which injury or death to an organism can occur as a result of short-term exposure. Chronic criterion is the concentration of a substance at which injury or death to an organism can occur as a result of repeated or constant exposure.

Out of the 11 fish-bearing streams monitored on a routine basis, 8 (73%) consistently exceeded the chronic criteria, while the remaining 3 had seasonal exceedances only. During WY2014 targeted storm event monitoring, all 7 streams and corresponding nearshore areas monitored exceeded the chronic criteria. Murden Cove frequently exceeded the acute criteria. The cove exceeded acute criteria 14 times during the 3-year Murden Cove Watershed Nutrient and Bacteria Reduction Project (2013-2015) (see project highlight below).

### Sediment and Metals

During rain events, sediment-laden stormwater runoff is a prominent pollutant on the Island. Not only does sediment cause excessive scouring and erosion, de-stabilizing slopes and stream banks and threatening property, but subsequent downstream deposition clogs stream bottoms, smothers fish eggs, and increases siltation rates in the Island's harbors and bays. Sediment also reduces fish's ability to find food and damages their gills as well.

Sediment-intolerant macroinvertebrate species (an important food source for fish) have diminished, some entirely, from half of the Island streams monitored, especially Ravine and Murden Creeks. (King County work here!) Sensitive to fine grains — what does % fines in sediment sampling tell us?

Equally concerning are the pollutants that sediment carries with it such as heavy metals. Though ambient or background levels of suspended sediment in streams and nearshore areas are generally quite low, Monitoring results have shown significant increases in suspended sediment and concentrations of metals in both streams, and nearshore marine waters, and stormwater outfall discharge during intense rain events.

Anywhere soil is exposed to rain there is a risk of sediment-laden runoff. Construction sites, croplands, sand and gravel pits or accumulations, and any other cleared or grubbed land surfaces are all potential sources of sediment. Likewise, poorly-maintained parking lots, stormwater drainage systems, and roadways become significant sources of sediment, particularly sediment laden with heavy metals.

Metals are also carried to streams from uncontrolled discharges from auto washing washwater and industrial discharges.

Climate change may lead to an increase in landslide risk, erosion and sediment transport in the fall, winter, and spring seasons, while reducing the rates of these processes in the summer. Quantitative projections are limited, because of the challenge in distinguishing climate change impacts from factors such as development patterns and forest management.

The City collects sediment samples from select stream and nearshore sites every five years for contaminant chemistry and grain size analysis.

add results here

### In-situ Physical Chemistry

Several Island streams and nearshore areas experience periodic excursions in pH, temperature, and dissolved oxygen. Excursions in pH are fairly rare. However, Weaver, Hawley (East and West Forks), Murden, Schel Chelb, Manzanita, Springbrook, Issei, and Mac's Dam Creeks and Murden Cove suffer chronically low levels of dissolved oxygen. While most only exceed standards in the summertime, Murden and Schel Chelb Creeks exceed standards year-round.

Several streams that had historically maintained acceptable water temperatures year-round, have started to exceed temperature criteria during the summertime since 2012 with excursions occurring more frequently over time. These streams are Hawley (East and West Forks) Sprinbrook, Schel Chelb, Linqvist, Gazzam Lake, and Mac's Dam Creeks. Two nearshore areas (Eagle Harbor at Ravine Creek, and Murden Cove) frequently exceed temperature criteria as well. MCWP...habitat driven, lack of canopy cover, low base flows, and stream flow flashiness due to stormwater runoff (reference KC work).

Continuous temperature and dissolved oxygen sensors were deployed in three separate reaches of Murden Creek as part of the 2013-2015 Murden Cove Watershed Nutrient and Bacteria Reduction Project. Summertime daily maximum temperatures at all three locations exceeded the criteria with temperatures increasing and exceeding criteria more often in the downstream reach. Similarly, summertime daily minimum dissolved oxygen levels exceeded criteria at all three sites. However, upstream reaches only infrequently exceeded criteria during the summertime, while oxygen levels were significantly lower in the downstream reach and exceeded criteria year-round.

Despite observed improvements in some water quality parameters such as phosphorus and bacteria over the project period, in-stream chemistry stayed the same or worsened. This indicates that the impact is most likely habitat driven (lack of canopy cover, reduced or absent buffers, lower summertime stream flows) rather than an illicit discharge of polluted water.

These excursions in physical chemistry, especially temperature and dissolved oxygen, significantly impairing their these waters' ability to support aquatic life.

#### *Flow and Land Use Impacts on the Biological Community*

*Hydrology is perhaps the most fundamental driver of physical, chemical, and biological processes in streams and is often considered a "master variable" controlling geomorphology, substrate stability, faunal and floral habitat suitability, thermal regulation, metabolism, biogeochemical cycling, and the downstream flux of energy, matter, and biota [Power et al. 1988; Resh et al. 1988; Poff and Ward 1989; Poff 1996; Poff et al. 1997; Dodds et al. 2004](McDonough, Hosen and Palmer, 2011).*

In 2015, the City contracted with King County Department of Natural Resources and Parks, Water and Land Resources Division to conduct a stream benthos and hydrologic evaluation of the City's stream benthic macroinvertebrate data and continuous flow gauging data.

Flow data analysis showed that stream flows increase more quickly following rain events and generally have higher peaks than would be expected under forested conditions. These results were generally consistent with increasing levels of urbanization upstream of each gauge and consistent with other data collected in other Puget Sound watersheds.

The average Benthic Index of Biotic Integrity (B-IBI) scores spanning all years of data were very poor for Ravine Creek; poor for Issei, Murden, and Whiskey Creeks; and fair for Cooper, Manzanita, Springbrook, and Woodward Creeks. None of the eight sites investigated had average scores that showed good or excellent stream benthic communities, although two sites (Cooper and Springbrook) did have individual sampling years that had good scores. Again, these data were generally consistent with the level of development in the study watersheds and with data collected in other Puget Sound watersheds.

Five statistically significant upward or downward B-IBI component metric trends were identified at four creek sites. Two Murden Creek site metrics showed a worsening trend in species diversity and percentage of pollution tolerant species versus intolerant species. Manzanita Creek showed an improving trend in species richness and both Cooper and Issei Creek showed an improving trend in percentage of pollution intolerant species versus tolerant species.

King County also examined three additional benthic macroinvertebrate diagnostic metrics for organic pollution (i.e., animal waste including human waste), fine sediment, and metals. The Fine Sediment Sensitivity Index was generally lower at all Bainbridge sites relative to reference sites, suggesting that fine sediment inputs may be a factor in benthic impairment in these streams. If confirmed through evaluation of sediment conditions at these sites, the cause is unlikely related exclusively to development as some of the stream basins are relatively undeveloped. It is possible that at least in some instances, past land use (e.g., historical logging and farming activities) is a factor in causing excess sediment to be (or to have been) delivered to these streams. Any development within these basins may also be a contributing factor as well; potentially delivering fine sediment through construction and land clearing activities and through stream bank erosion resulting from increased peak flows.

All three diagnostic metrics and the flashiness hydrologic metrics indicate that Ravine Creek is suffering from multiple stressors that potentially include organic and metal pollution, geomorphic alteration, and flashier flows, all typical of an urban stream.

There was only one statistically significant upward or downward trend in these three additional metrics – an improving trend in metals-intolerant species in Issei Creek.

### *Project Highlight – Murden Cove Watershed Nutrient and Bacteria Reduction*

In 2013 – 2015, the City brought together and led a partnership of agencies, schools, business... sampling, training volunteers, what each partner brought to the project, targeted shoreline and upland stream side properties – Health District visits. Monitoring identified habitat driven temperature and dissolved oxygen impairments (shows in King county's assessment bio) Though remaining work needs to be done to address land cover/land use impacts such as sediment, nitrate, and ammonia watershed wide, significant reductions in phosphorous and bacteria concentrations in the watershed were achieved. Critical to retain and protect riparian buffers and reduce stormwater runoff.

The 2016 stormwater discharge permit required low impact development requirements for new and re-development should help alleviate some of the stressors, sediment, flow, over time.

### **Habitat**

As stated above in *City Surface Water Quality Assessment*, limited resources prevent the City's monitoring program from actively monitoring for freshwater and marine water habitat assessment aside from limited sediment sampling in select stream and adjacent nearshore areas (addressed above in Water and Sediment). Most of what we know about our nearshore marine habitat and freshwater habitat is based upon work by non-profit entities such as the Bainbridge Island Land Trust, the Puget Sound Restoration Fund and the Bainbridge Island Watershed Council and outside agencies such as Washington State Department of Fish and Wildlife (WDFW), Washington State Department of Natural Resources (DNR), Ecology, Wild Fish Conservancy, and the Suquamish Tribe. Limited land use/land cover information is available through aerial photography and light detection and radar (LiDAR) technology, as well.

### *Land cover*

Bainbridge Island encompasses an area of 17,471 acres, or approximately 28 square miles. The primary land cover is tree-cover at 73%, or 12,760 acres. Grass/scrub lands, developed areas with impervious surfaces and other coverages comprise 15%, 11% and 1%, respectively, with combined coverage of 4,712 acres (Table 1 next page).

Land use type does not vary widely by any great degree across the island due to a low percentage of industrial or commercial land development and the lack of available or developed farm/range land. The island's land use is consequently dominated by residential uses (75%). Other land uses such as recreation land (7%), agricultural (6%), transportation corridors (6%), commercial/light manufacturing (2%), forest land-use (2%) and public facilities (2%), make up the remainder of the land use as a percentage of the total acreage on the island. With a total overall population of 23,630 the greatest population density occurs at the towns of Winslow, Island Center, Lynwood Center and around the coastline of the island. Outside of urbanized areas, the Island is generally characterized by scattered, small communities, homes on acreage, and large parcels of undeveloped land.

### *Stream type*

In 2014, the Wild Fish Conservancy (WFC) completed stream typing for Bainbridge Island as part of the [West Sound Watersheds, Kitsap Peninsula \(WRIA 15\) Stream Typing Project](#).

WFC's website states, "Water typing is the state-sanctioned process of mapping the distribution of fish and fish habitat. Regulatory water type maps are used to regulate land use decisions adjacent to streams, ponds, and wetlands. Because existing (modeled) regulatory maps often significantly misrepresent the presence, location, and extent of fish habitat, the effectiveness of state and local government fish habitat protection regulations is compromised. More information about the water typing process and its significance is available at: <http://wildfishconservancy.org/resources/maps/what-is-water-typing.>"

WFC classified fish and fish habitat in Island streams and ground-truthed regulatory maps of stream presence and location, identifying an additional 25 previously unknown/unmapped miles of stream with 698 acres of previously unprotected habitat buffer on Bainbridge Island. The City is currently using WFC's updated stream data.

**Table 1. CoBI Watershed Land Cover Statistics**

Watershed Name /Code	Watershed Area (Acres)	Watershed Size Ranking	Breakdown of Total Watershed Landcover (% of Total Area)								
			Forest	Wetlands	Natural	Grass & Turf	Bare Ground	% Total Impervious Area	Developed	Surface Water	Other
Agate Passage / AGPS	599.96	12	79.52	2.75	82.28	4.25	3.08	9.17	16.51	0.17	1.04
Blakely Harbor / BLKH	1,369.73	7	87.04	1.08	88.13	2.25	3.62	5.75	11.62	0.22	0.04
Eagledale / EGDL	1,094.12	9	65.10	2.95	68.04	8.83	4.36	18.45	31.63	0.33	0.00
Fletcher Bay / FLBY	2,114.01	3	75.83	1.09	76.92	8.60	6.04	7.89	22.52	0.56	0.00
Gazzam Lake / GZLK	886.45	10	83.96	0.79	84.74	3.96	1.86	7.82	13.64	1.62	0.00
Manzanita Bay / MZBY	2,296.34	1	72.25	1.92	74.18	9.76	6.76	8.85	25.37	0.46	0.00
Murden Cove / MDCV	2,046.36	4	73.65	2.34	75.99	7.65	6.46	9.48	23.58	0.43	0.00
North Eagle Harbor / NEGH	2,184.91	2	50.64	2.46	53.11	8.30	10.57	26.95	45.82	0.44	0.63
Pleasant Beach / PLBH	1,437.63	5	70.66	3.00	73.66	6.01	6.64	13.56	26.21	0.13	0.00
Port Madison / PTMD	1,388.31	6	81.85	1.18	83.03	6.26	3.75	6.36	16.37	0.30	0.31
South Beach / SHBH	711.89	11	76.59	1.20	77.79	4.16	10.88	6.54	21.58	0.63	0.00
Sunrise / SNRS	1,342.24	8	79.08	1.92	81.00	4.49	6.41	7.97	18.87	0.13	0.00
<b>TOTAL ACREAGE</b>	<b>17,471.95</b>	<b>!</b>	<b>12,760.44</b>	<b>333.49</b>	<b>13,093.92</b>	<b>1,194.76</b>	<b>1,089.27</b>	<b>1,994.28</b>	<b>4,278.31</b>	<b>74.84</b>	<b>24.88</b>

Notes:

\*\* Statistical sources include: Battelle GIS database, CoBI GIS data, and CoBI Level II Assessment (Kato &amp; Warren, 2000)

(Water Quality and Flow Monitoring Program – Final Monitoring Plan, COBI, 2008)

Fish Passage Barrier Inventory

In 2014 the Washington Department of Fish and Wildlife (WDFW) completed fish passage assessments on Bainbridge Island streams. As part of this assessment, WDFW identified 43 total passage barriers (40 road crossings and 3 dams) and 45 partial passage barriers (43 road crossings, 1 dam, and 1 miscellaneous) (see Figure 2).

Figure 2. WDFW Fish Passage Barrier Inventory



(<http://wdfw.maps.arcgis.com/home/webmap/viewer.html>)



Joseph W. Tovar  
FAICP

## MEMORANDUM

DATE: April 8, 2016  
TO: Bainbridge Island Planning Commission  
FROM: Joseph W. Tovar, FAICP  
RE: Housing Element

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The April 14 Planning Commission meeting is the first of three sessions where you will review the Housing Element. The focus of this first meeting should be on conveying the information in this packet and answering questions you may have. We expect that there may be questions that we cannot answer that evening, but could be prepared to answer at the meeting of April 28.

Once the Commission has digested the background information, the comment to date, and the choices presented in Attachment A, it would then be appropriate for you to deliberate and reach conclusions about what you would like to see in the Housing Element. We have prepared a draft Housing Element (Attachment B) for your review. As you reach conclusions about the options to address the Island's housing, we would then work with the Drafting Committee to bring back revisions for your consideration at the meetings of April 28 and May 12.

The background information on this subject is considerable. A 2004 Affordable Housing Task Force Report, a 2007 Community Housing Coalition Final Report, and a 2015 Housing Needs Assessment all provide useful background. A link to those documents appears [here](#). Housing, and particularly the need for more affordable housing on the Island, was a topic that was frequently mentioned at the Listening Sessions held in early 2015, as well as the Housing Workshop hosted by the Planning Commission on December 3. A table of the comments from the December workshop is Attachment C to this memorandum.

### **I. GMA duty**

The primary GMA requirements for the Housing Element are set forth on pages 16 and 17 of the draft Housing Element (Attachment B). In addition, the City is required to have sufficient capacity in its updated Comprehensive Plan and implementing regulations to accommodate the 20-year growth target assigned by Kitsap County. As we have previously stated during the review of the draft Land Use Element, the Island has sufficient zoning capacity to accommodate the assigned targets of an additional 5,635 people by the year 2036. This means that there is no need to increase densities in

order to satisfy the population target for 2036. However, as outlined in the draft Housing Element and options described in Attachment A, there may be reasons for the City to consider increasing localized densities to help achieve such objectives as attracting development to designated centers and achieving a greater percentage of affordable housing in the future.

## II. Framework of Guiding Principles and Land Use Element

Every element of the comprehensive plan is given substantive direction by the Guiding Principles and Policies that appear in the Introduction of the Plan. The Guiding Policies most relevant to the Housing Element are set forth on pages 17 and 18 of the draft Housing Element (Attachment B).

The draft Housing Element must also be consistent with and supported by other Plan elements. A citation of the most relevant portions of other draft Plan elements appears on pages 18 and 19 of the draft Housing Element.

Of particular importance to the questions of what type of housing we are planning for, and at what density and form that housing should take, is the question of where. A key organizing principle in the Land Use Element is the Island-Wide Land Use Concept which fundamentally divides the Island into two very different future land use patterns: designated centers (e.g., Winslow, Island Center, Rolling Bay and Island Center), and a broad conservation landscape everywhere else.



That is why the goals, policies, and options for addressing housing objectives, is very distinct in these two parts of the Island. As the details of the Planning Commission's recommended Housing Element emerge, we may be looking again at the Land Use, and other Elements, to make appropriate adjustments and refinements.

### **III. Profile, Trends, Needs and Options**

Following are excerpts from the background documents, some of which also appears in the draft Housing Element.

#### **A. Profile**

- Bainbridge Island's 2015 population is 23,300.
- 91% of the Island's population is white.
- The median household income is \$92,558, about 1.5 times the county average
- 58% of Island residents have occupations in management, business, science and arts.
- The median wage for financial analysts, lawyers, and marketing managers ranges from \$100,457 to \$122,618.
- 32% of Island residents have occupations in service, sales and office occupations.
- The median wage for waiters, cashiers, and retail sales people ranges from \$27,703 to \$30,972.
- Approximately 80% of housing units on the Island are single-family homes, primarily located in a very low-density land use pattern of large lots.
- The average single-family home price in 2014 was \$696,519.
- About 16% of the housing units are multifamily, located primarily in the denser development patterns of Winslow and Lynwood Center.
- Rental apartments make up less than 7% of total housing units on the Island.
- The vacancy rate for apartments is 1.5%, which is well below the 5% rate that is typical of well-functioning rental markets.

#### **B. Trends**

- Between 2000 and 2010, the 3% annual population growth of the previous decades slowed to an approximate 13.5% increase in population for the whole decade.

- The “young adult” cohort (18 to 34 years old) makes up less than 10% of the Island’s population, which is a decline from 15% in 1990.
- The Island’s senior population (60+ years old) increased from 17% in 2000 to 26% in 2010.
- Population growth between 2010 and 2013 has slowed even further to below 1% percent growth (0.72%).

### C. Needs

The City’s Housing Needs Analysis presents several indicators of housing need on Bainbridge Island.

- Almost 34% of individuals and families at all income levels who live in owner-occupied housing units are **cost burdened**, meaning that they spend over 30% of their income on housing.
- Almost 40% of individuals and families at all income levels who live in renter-occupied housing units are cost burdened. The majority (around 28%) of these residents have an annual income between zero and \$34,999. This means that as of 2012, 569 renters on the Island that have an income of \$34,999 or less are housing cost burdened. This is concerning as lower income cost burdened households are more likely to have to choose between housing costs and other necessities.
- The HNA analysis of Workforce Housing Affordability indicates that there is a gap in housing affordable for the Island’s workforce in service professions (e.g., restaurant workers, bank tellers, retail clerks, school bus drivers). Many of those workers are obliged therefore to commute from less-expensive off-island housing, which increases their transportation costs, congestion on SR 305 and greenhouse gas emissions.
- Bainbridge Island’s jobs/housing balance is .59 jobs for every housing unit, making it a “bedroom community.” The Puget Sound Regional Council suggests that housing rich neighborhoods add employment in order to increase economic opportunities for current residents.

### D. Options for addressing Housing Needs on Bainbridge Island

Many ideas have been suggested by the public and the prior housing reports prepared for the City. From those many suggestions, we have culled a list of sixteen tools or strategies that the City could consider to address the identified needs. Those options are detailed in Attachment A, with specific illustrations and explanation of those options in supplementary Attachments A1 through A6.

Included in the table in Attachment A is a summary of what objectives each tool could help address, where on the island that approach might be most appropriate, some description of the approach and rationale, and a somewhat subjective judgment about how effective the approach might be in addressing the housing objectives identified. For example, an action such as making public land available is a much more direct and immediate way to facilitate new affordable housing than, say, a tiny house demonstration project.

Finally, it should be remembered that no one or two actions are likely to make a significant impact on achieving the City's housing objectives. The fact that no one approach will "solve" the affordable housing problem is not a sound reason for rejecting it. The experience in most cities has been that a multi-faceted strategy, with many actions, is the most promising way to address this serious issue.

### Attachments

#### A - Housing Tools Table

A1 - City-owned and church properties in Winslow

A2 - Ronald Commons affordable housing project

A3 –Multi-Family Property Tax Exemption article

A4 – Cottage Housing examples

A5 - Growing Greener Conservation article

A6 - Tiny Houses report

#### B - Draft Housing Element and Glossary additions

#### C – Housing Workshop Comment Table

## Attachment A - Potential Tools to increase supply of diverse housing types and affordable housing

#	TOOL	WHERE	POLICY OBJECTIVES	WHAT	POTENTIAL SCALE OF IMPACT ON SUPPLY OF HOUSING	MORE  LESS 
1	Surplus public land to write down the cost of development in partnership with affordable housing providers	Winslow	<ul style="list-style-type: none"> <li>Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>The City Council's recent decision regarding the Suzuki property is an example of using surplus city owned property to achieve affordable housing objectives. The details of the project are yet to be negotiated, but they will result in 50+ units of housing with an affordable housing component, on a 13+ acre property in Winslow.</li> <li>There may be other opportunities to include affordable housing in the airspace over future public facilities such as a police headquarters, post office or municipal parking garage.</li> </ul> <p><b>See Attachment A1. ACTION: adopt criteria and process</b></p>		
2	Explore interest of Island churches regarding potential for affordable housing on church property	Winslow and NSCs if allowed by Subarea Plan	<ul style="list-style-type: none"> <li>Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>Churches in a number of cities have dedicated a portion of their properties for use as affordable housing or other social services. Those churches see such purposes as consistent with their religious mission.</li> <li>There are a number of churches within Winslow who may have some interest in such a possibility. <b>See Attachment A1.</b></li> <li>One example, from the City of Shoreline, the Ronald Methodist Church has partnered with non-profit housing providers to build "Ronald Commons" a 60 unit affordable housing project in the Town Center. <b>See Attachment A2. ACTION: outreach to churches</b></li> </ul>		
3	Multifamily Property Tax Exemption (MFPTE)	Winslow and NSCs if allowed by Subarea Plan	<ul style="list-style-type: none"> <li>Increase # of housing types</li> <li>Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>Many cities, including Everett, Covington, Shoreline, Seattle and Tacoma, have effectively used the MFPTE tool to incent the building of 100s of units of affordable housing.</li> <li>State law permits cities to exempt new projects for up to 12 years from paying property taxes on the value of improvements, provided that a percentage of the units are set aside as affordable housing.</li> <li>The Puget Sound Regional Council has highlighted the MFPTE tool as an effective way to incentivize affordable housing.</li> </ul> <p><b>See Attachment A3 ACTION: draft ordinance to adopt program</b></p>		

4	Cottage Housing Ordinance	Island-wide	<ul style="list-style-type: none"> <li>• Increase # of housing types</li> <li>• Increase # of smaller units</li> </ul>	<ul style="list-style-type: none"> <li>• The 2007 Community Housing Coalition Final Report included and recommended adoption of a draft cottage housing ordinance.</li> <li>• Cottage housing, at a typical density of 11 units to the acre, addresses a specific niche in the market for empty-nesters and young singles.</li> <li>• The Ericksen Ave Cottages are an example of this type in Winslow. <b>See Attachment A4. ACTION: craft and adopt new regulation</b></li> </ul>	
5	Conservation Villages Ordinance	Outside Centers	<ul style="list-style-type: none"> <li>• Increase # of housing types</li> <li>• Increase # of smaller units</li> <li>• Conserve lands outside centers</li> </ul>	<ul style="list-style-type: none"> <li>• The City's regulations for cluster subdivisions have produced controversial and unsatisfactory results.</li> <li>• A new approach could be explored to better achieve the City's conservation objectives, while also creating the opportunity for small houses (900 to 1500 square feet) and/or on small lots (3,000 to 5,000 square feet).</li> <li>• A "Conservation Villages" ordinance could be drafted to avoid the flaws in present subdivision regulations and build upon the principles in the "Growing Greener" movement in other states. <b>See Attachment A5 ACTION: craft and adopt new regulation</b></li> </ul>	
6	Extend and clarify Housing Design Demonstration Projects (HDDP) Process	Winslow and NSCs if allowed by Subarea Plan	<ul style="list-style-type: none"> <li>• Increase # of housing types</li> <li>• Increase # of smaller units</li> <li>• Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>• The GROW community and Ferncliff Village are two projects that have been developed using the HDDP process.</li> <li>• The HDDP is presently the only tool the City has to incent the provision of affordable housing and green building practices. It does so by providing for density increases and modification of dimensional standards.</li> <li>• The HDDP expires at the end of 2016. The City should consider clarifying the HDDP process and making it a permanent option for innovative housing. <b>ACTION: adopt ordinance extending</b></li> </ul>	
7	Increased Floor Area Ratio (FAR) to incent affordable housing as part of mixed use projects	Winslow	<ul style="list-style-type: none"> <li>• Increase # of housing types</li> <li>• Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing the FAR in Winslow could be tied to the provision of affordable housing. A sliding scale of FAR could be established tied to specific levels of affordable housing as part of the mix.</li> <li>• Any increase in FAR would have to be accompanied by appropriate revisions to maximum building height and floor plate in order to accommodate the increased building envelope.</li> <li>• The most appropriate location for increased FAR and larger building envelopes would be the High School Road, Madison, Ferry Terminal and Erickson District <b>ACTION: craft and adopt code amendment</b></li> </ul>	

8	Adopt Tiny Houses regulations	Island-wide	<ul style="list-style-type: none"> <li>Increase # of housing types</li> <li>Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>Much interest has been expressed in “tiny houses” as a specific housing niche. Generally, these are quite small (under 600 square feet or less) which lowers the cost for materials and construction, but likewise limits the household size that can be accommodated. <b>See Attachment Attachment A6.</b></li> <li>The City could make available a small parcel in Winslow for a demonstration project. <b>ACTION: refer to staff for study.</b></li> </ul>	
9	Reduce or eliminate required parking where alternative transportation modes are available	Winslow	<ul style="list-style-type: none"> <li>Increase # of housing types</li> </ul>	<ul style="list-style-type: none"> <li>A key obstacle to infill development is the high cost of parking. Surface level parking is very land intensive and structured parking can cost \$40,000 per stall.</li> <li>A significant Increase in the supply of apartments would be facilitated by reducing or eliminating parking requirements.</li> <li>The degree of reduction could be tied to the availability of alternative modes of transportation (e.g., transit, walkable distances to services, bicycles, etc.) <b>ACTION: craft and adopt code amendment</b></li> </ul>	
10	Reform Accessory Dwelling Units (ADU) standards	Island-wide	<ul style="list-style-type: none"> <li>Increase # of housing types</li> <li>Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>Over 200 ADUs have been permitted since 1992.</li> <li>One way to reduce the cost of ADUs would be to enable the sharing of utility meters between the ADU and the larger house. <b>ACTION: craft and adopt code amendment</b></li> </ul>	
11	Revisit Zoning requirement for affordable units as a % in new multifamily	Winslow	<ul style="list-style-type: none"> <li>Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>Requiring the provision of affordable housing for detached housing subdivision was problematic. It resulted in very few units and was an administrative burden on the City.</li> <li>Bainbridge’s unsuccessful inclusionary zoning ordinance was repealed. <b>ACTION: refer to staff for study</b></li> </ul>	
12	Explore a future housing levy to fund construction of affordable housing	Island-wide	<ul style="list-style-type: none"> <li>Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>Engage a community discussion of the merits and costs of an affordable housing levy on the Island.</li> <li>COBI should participate in and support conversations about a Kitsap County levy or tax for affordable housing.</li> <li>Both Seattle and Bellingham have passed affordable housing levies. King and Pierce County are now considering levies. <b>ACTION: initiate study of options, merits and costs</b></li> </ul>	

13	Increase resources to the Housing Trust Fund	Island-wide	<ul style="list-style-type: none"> <li>Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>The Housing Trust Fund is the only existing source of public funding to support housing projects on the Island.</li> <li>Consider a special transfer of funds from the General Fund, to better capitalize new affordable housing projects.</li> <li>Identify new sources of funding to keep the HTF as a viable means of supporting projects.</li> </ul> <p><b>ACTION: refer to staff to prepare options</b></p>	
14	Streamline the permit process for projects with an affordable housing component	Island-wide	<ul style="list-style-type: none"> <li>Increase # of housing types</li> <li>Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>Two of the greatest impediments to the viability of any development, including affordable housing projects, are uncertainty and delay.</li> <li>Increase the viability for affordable housing projects by reducing uncertainty. Adopt clear standards so that a developer can rely on unambiguous requirements, not the vagaries of a discretionary permit process</li> <li>Eliminate advisory meetings by the planning commission and appeals to the council. Limit appeal to a single open record hearing before the hearing examiner.</li> </ul> <p><b>ACTION: craft and adopt code amendment</b></p>	
15	Waive development and utility fees for projects that have 100% affordable housing	Island-wide	<ul style="list-style-type: none"> <li>Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>The margin of viability for some affordable housing projects is thin, so that any reduction in cost can make an important difference.</li> <li>Some communities have either waived or reduced planning and development fees and/or water &amp; sewer fees for projects that provide 100% affordable housing. Bainbridge Island should consider expanding fee waivers to include these costs.</li> </ul> <p><b>ACTION: refer to staff to prepare program</b></p>	
16	Establish annual targets for addition of market rate and income eligible affordable housing units to the Island supply	Island-wide	<ul style="list-style-type: none"> <li>Increase # of housing types</li> <li>Increase the affordable housing supply</li> </ul>	<ul style="list-style-type: none"> <li>Numeric targets should be developed for new units built, number of affordable housing units built, vacancy rates, etc.</li> <li>An annual or semi-annual report should monitor progress, analyze reasons for success or lack of it, and recommend revisions to existing measures or adoption of new measures.</li> </ul> <p><b>ACTION: refer to staff to prepare program</b></p>	



# City of Bainbridge Island Public Lands and Churches

## Attachment A1 - City owned and Church owned properties in Winslow

### Legend

-  Churches
-  Publicly Owned Property
-  Winslow Urban Area

Yeomalt  
Pt.

0 0.075 0.15 0.3 0.45 0.6 Miles

Eagle

## Attachment A2- Ronald Commons Affordable Housing

# Ronald Commons

A New Shoreline Community

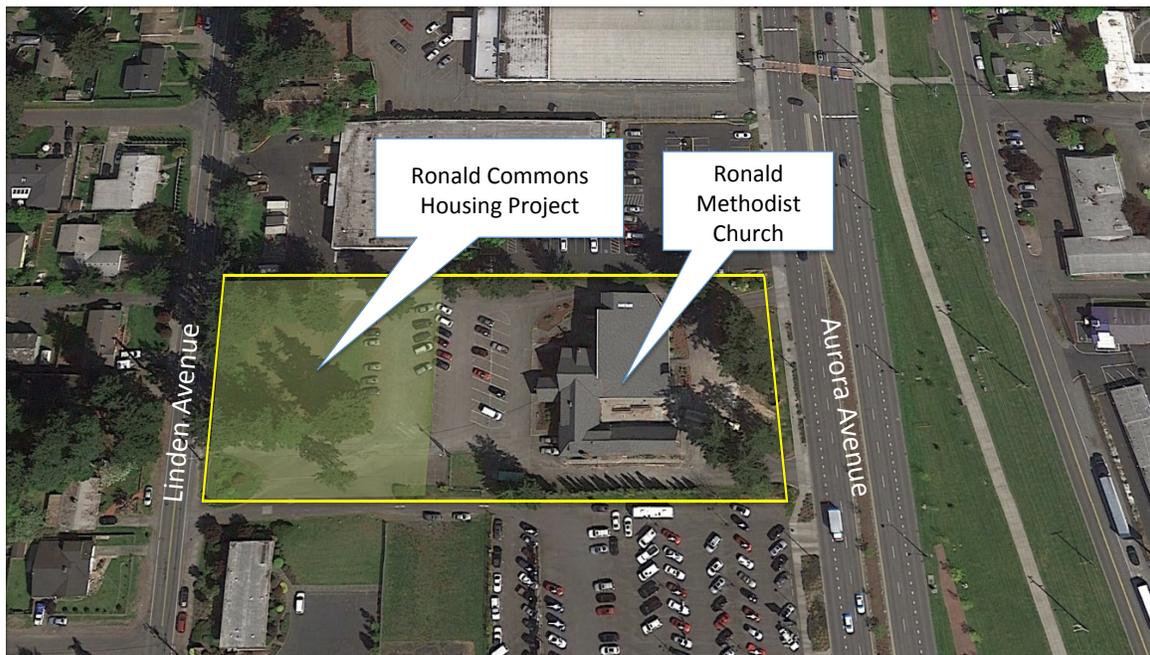


### *Ronald Commons will feature :*

60 affordable apartments, including 12 for veterans and their families, owned and operated by Compass Housing Alliance.

A 12,000 square foot integrated service center with support programs and a food bank, owned and operated by Hopelink.

A remodeled Ronald United Methodist Church, offering an expanded presence and a wider range of resources to the community.



# Attachment A3 - Multifamily Property Tax Exemption Article

Puget Sound Regional Council



## Featured Tool: Multifamily Tax Exemption\*

A state law (RCW 84.14) helps cities attract residential development. Cities may exempt multifamily housing from property taxes in urban centers with insufficient residential opportunities. The city defines a residential target area or areas within an urban center; approved project sites are exempt from *ad valorem* property taxation on the residential improvement value for a period of eight or 12 years. The 12-year exemption requires a minimum level of affordable housing to be included in the development (at least 20% of the units or 100% if the building is solely owner-occupied). The eight-year exemption leaves the public benefit requirement—in both type and size—to the jurisdiction’s discretion. The eight-year exemption carries no affordable housing requirement. Cities must pass an enabling ordinance to enact the MFTE and to allow applications for the exemption.

### ***What issue does a multifamily tax exemption address?***

This tool encourages multifamily development and redevelopment in compact mixed-use districts (urban centers) where housing and affordable housing options are deficient. Through the multifamily tax exemption, a jurisdiction can incentivize dense and diverse housing options in urban centers lacking in housing choices or affordable units. MFTE can also apply to rehabilitating existing properties and redeveloping vacant or underused properties.

### ***Where is the multifamily tax exemption most applicable?***

Cities planning under the Growth Management Act (RCW 36.70a) that have designated urban centers with a deficiency of housing opportunities are eligible to implement this tool. In King, Pierce, Snohomish and Kitsap counties, cities must have at least 5,000 in population. Cities must designate eligible areas that contain urban centers. Urban centers—in the context of the MFTE-enabling legislation—have a particular meaning:

“...a compact identifiable district where urban residents may obtain a variety of products and services. An urban center must contain:

- (a) Several existing or previous, or both, business establishments that may include but are not limited to shops, offices, banks, restaurants, governmental agencies;
- (b) Adequate public facilities including streets, sidewalks, lighting, transit, domestic water, and sanitary sewer systems; and
- (c) A mixture of uses and activities that may include housing, recreation, and cultural activities in association with either commercial or office, or both, use.” (RCW 84.14.010)

Based on the state law, designated districts are commercial or business districts with some mix of uses. Such areas may exist in downtowns, commercial corridors, or other intensively developed neighborhoods. Examples of designated districts throughout the central Puget Sound region are listed in the model policies, regulations and other information section below.

MFTEs have been effective in producing multifamily units in the region’s larger cities. Since its inception, the MFTE law has been expanded to include smaller cities. The effectiveness of this tool in larger jurisdictions could make it an attractive tool for smaller and moderate-sized cities that meet the population threshold.

### **Tool Profile**

#### **Focus Areas**

- [Urban Centers](#)
- [Transit Oriented Development](#)
- [Expensive Housing Markets](#)

#### **Housing Types**

- Multifamily
- Ownership
- Rental
- Market Rate
- Subsidized

#### **Affordability Level**

- 80 to 120% AMI
- Less than 80% AMI

#### **Goal**

- Affordability

*\* Tool considered very effective for producing units at less than 80% AMI.*

### **Case Studies**

- [Burien Multifamily Tax Exemption](#)
- [Lynnwood Multifamily Tax Exemption](#)
- [Tacoma Multifamily Tax Exemption](#)

Multifamily tax exemptions can encourage relatively dense attached flats or townhomes, in mixed-use projects or residential complexes, which means this tool is particularly useful in urban centers and transit-oriented developments. Dense development is also economically efficient in expensive housing markets, and can reduce housing costs.

### ***What do I need to know about using or developing a multifamily tax exemption?***

The MFTE implementation process is guided by state law in RCW 84.14. In general, the process includes preparing a resolution of intent to adopt a designated area, holding a public hearing and adopting and implementing standards and guidelines to be utilized in considering applications for the MFTE. Among other criteria, the designated area must lack “sufficient available, desirable, and convenient residential housing, including affordable housing, to meet the needs of the public who would be likely to live in the urban center, if the affordable, desirable, attractive, and livable places to live were available” (RCW 84.14.040). A property owner applying for an MFTE must meet the criteria (per RCW 84.14.030) summarized here:

- The new or rehabilitated multiple-unit housing must be located in city-designated residential target areas within the urban center.
- The project must meet local government requirements for height, density, public benefit features, number and size of proposed development, parking, income limits for occupancy, limits on rents or sale prices, and other adopted requirements.
- At least 50% of the space in the new, converted or rehabilitated multiple-unit housing must be for permanent residential occupancy. Existing occupied multifamily developments must also provide a minimum of four additional multifamily units.
- New construction multifamily housing and rehabilitation improvements must be completed within three years from approval.
- The applicant must enter into a contract with the city containing terms and conditions satisfactory to the local government.

The exemption is recorded with the County Assessor. Developments that violate the terms of the exemption are required to pay back the exempted tax amounts, plus interest, and a penalty fee.

Cities considering the program need to weigh the temporary (8-12 years) loss of tax revenue against the potential attraction of new investment to targeted areas. MFTE projects could be catalysts for other private investment if they help prove an area is desirable. Pairing the MFTE with other tools that affect density and cost reductions may help the city achieve higher density and affordable housing in designated mixed-use and commercial areas. These tools include:

#### **Featured Tools:**

- [Density Bonuses](#)
- [Transit Oriented Development Overlays](#)
- [Parking Reductions](#)

#### **Other Tools:**

- [Mixed-Use Development](#)
- [No Maximum Densities](#)
- [Planned Action EIS](#) (see in particular the SEPA residential and mixed-use exemption option)

## **Creating a Multifamily Tax Exemption Program**

A typical planning process (gathering information, conducting public outreach and considering ordinances), together with the specific requirements of state law, will guide the development of an MFTE program:

**Determine Residential Target Areas.** Cities will need to consider the state law’s “urban center” definition which addresses existing commercial businesses, mixed uses and infrastructure.

**Analysis.** To support the urban center and residential target area designations, a jurisdiction should map or collect data on current uses, services and capital facilities. The data and analysis should demonstrate that the area lacks sufficient residential housing, including affordable housing. Estimating the tax revenue and other cost-benefit implications of the MFTE program can help to determine whether the program would help achieve housing goals. For example, prior to adopting an MFTE ordinance, the City of Lynnwood prepared an analysis of tax revenue that would be foregone should the ordinance be adopted. In terms of other cost-benefits, jurisdictions can calculate the short-term construction and sales tax revenues and employment gains that stem from the development. (See case studies below.)

**Conduct Public Outreach.** The MFTE statute suggests that a jurisdiction considering an MFTE program issue a resolution of intention to designate an urban center and residential target area(s). The resolution should also identify the time and place of a hearing. Cities must hold a public hearing on the proposed MFTE ordinance and follow notification schedules listed in the statute. While crafting the ordinance, cities will also want to involve stakeholders, including developers of multifamily and condominium housing, affordable housing developers and advocacy groups, and major land owners and businesses in the residential target areas. See [Citizen Education and Outreach](#) for strategies to involve the public and stakeholders.

**Determine Standards.** The state affords jurisdictions wide latitude to design their MFTE laws to meet local planning goals. Proposals must meet local zoning and development standards and any affordability and occupancy criteria the jurisdiction sets. Based on the intent of the MFTE, key decisions to shape the ordinance include:

- **Encouraging more versus less participation from developers.** The threshold number of units to qualify for the exemption and public benefit requirements could influence the level of participation by developers. A low threshold and limited public benefit requirements, for example, might make the program more accessible to developers, but yield a smaller return in public benefit for foregone revenue. A high threshold and demanding public benefit requirement, however, might make the program unattractive to developers. Striking a balance between requirements, goals and attractiveness is essential to a successful MFTE program.
- **Encouraging affordable housing versus market-rate housing.** RCW 84.14 allows cities to provide a bonus for affordable housing provision by allowing 12 years of tax exemption, versus the eight years offered for market-rate developments. Cities could further encourage developers to opt for the 12-year exemption by setting a threshold number of units or public benefit to attract development. Offering other incentives (e.g., [density bonuses](#), [flexible single family development regulations](#)) along with the MFTE can strengthen interest in affordable development in the city.
- **Encouraging more rental or ownership housing.** The law provides incentives for affordable multifamily rental housing where the whole development is eligible for the tax exemption if at least 20% of the units are affordable to low- and moderate-income households. To receive the 12-year exemption, buildings intended to be entirely owner-occupied must price all of their units affordably for moderate-income households. Setting a threshold number of rental versus ownership units could influence the type of tax exemption applications received in favor of a particular tenure.
- **Ensuring that affordability endures.** Affordable units may be at risk of losing their affordable status both at the end of the MFTE time period and during its existence if a developer decides to opt out of the program. Requiring [affordability covenants](#) for these units is one method for preserving affordability.

**Implementation.** State law requires an application process and procedures. Cities will need to allocate staff and resources to reviewing applications. A fee may be charged for the request. The agency has 90 days to approve or deny the application.

**Monitoring.** The law requires regular reporting by applicants and by cities. Upon construction and annually thereafter, the property owner must file reports containing information such as occupancy, vacancy, and other

items required by the city. Cities will also want to make sure that these requirements are not too onerous. In some cases, partnerships between non-profits and for-profits to ensure secure income certifications and monitoring may be helpful.

Cities must report to the State of Washington Department of Commerce annually by December 31 regarding certificates granted, unit types, monthly rent and sales costs, and other information. Cities could use these regular reports to monitor the success of the program and build supporting data for future program goals. Some cities establish a sunset clause by which time the city may re-adopt or let expire the tax exemption program.

## Model Policies, Model Regulations, Other Information

**State of Washington:** [RCW 84.14](#)

See adopted ordinances of the following cities at: <http://www.mrsc.org/codes.aspx>

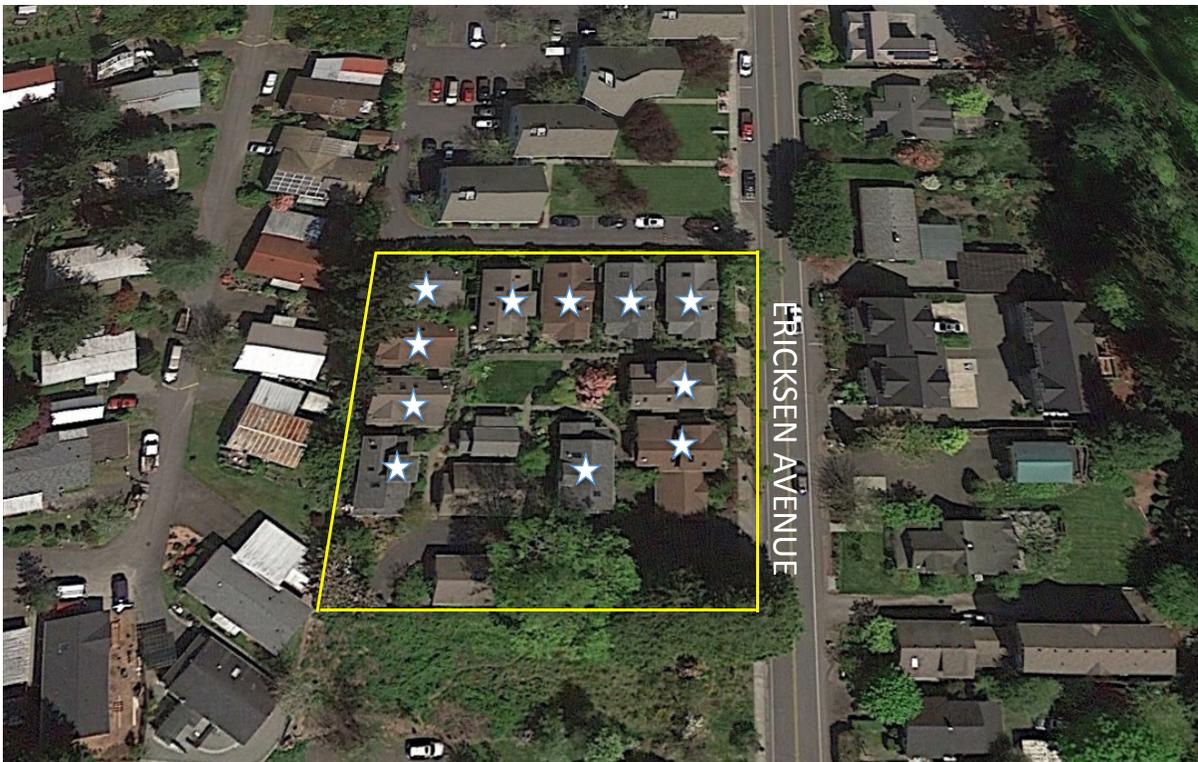
- Bremerton: Downtown Core and Multiple Residential Zones
- Burien: Downtown Commercial Zone
- Everett: Downtown and vicinity
- Kirkland: Central Kirkland/Houghton; Totem Lake and North Rose Hill; Juanita; and NE 85th Street
- Lynwood: City Center
- Puyallup: central business district (CBD) and certain areas south of the CBD
- SeaTac: 154th Street and SeaTac/Airport Station Areas
- Seattle: 39 neighborhoods or districts
- Shoreline: Ridgecrest District
- Tacoma: 17 mixed-use centers designated on the Generalized Land Use Plan and in the Comprehensive Plan

Attachment A4 – Two Cottage Housing Examples

**ERICKSEN AVENUE COTTAGES**



<b>Ericksen Avenue Cottages</b> Bainbridge Island, WA	
Site Size	.91 Acre
Dwelling Units/Acre	12
Number of Homes	11
Square Footage Range of Homes	1,049 to 1,099 Sq. Ft.



# GREENWOOD AVENUE COTTAGES



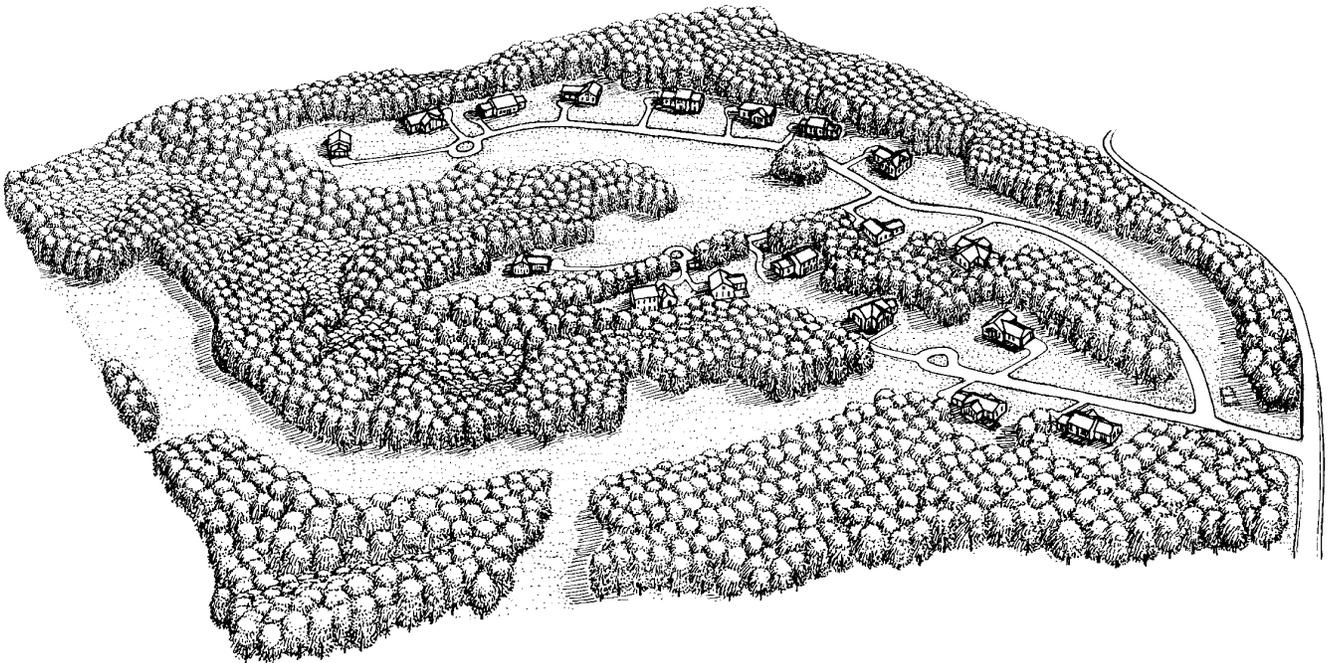
<b>Greenwood Avenue Cottages</b> Shoreline, WA	
Site Size	1.25 Acres
Dwelling Units/Acre	10
Number of Homes	8
Square Footage Range of Homes	768 to 998 Sq. Ft.



# Growing Greener

## PUTTING CONSERVATION INTO LOCAL CODES

**C**ommunities across Pennsylvania are realizing that they can conserve their special open spaces and natural resources **at the same time** they achieve their development objectives. The tools? Conservation zoning and conservation subdivision design, an approach we're calling *Growing Greener*.



These *Growing Greener* tools are illustrated in the above subdivision, where the developer builds the maximum number of homes permitted under the municipality's zoning, while at the same time permanently protecting over half of the property. The open space is then added to an interconnected network of community greenspaces.

If you want your community to take control of its destiny and ensure that new development creates more livable communities in the process, the *Growing Greener* approach might be right for you.

## Introduction

This booklet summarizes how municipalities can use the development process to their advantage to protect interconnected networks of open space: natural areas, greenways, trails and recreational land. Communities **can** take control of their destinies so that their conservation goals are achieved in a manner fair to all parties concerned. All that is needed are some relatively straight-forward amendments to municipal comprehensive plans, zoning ordinances, and subdivision ordinances. These steps are described in the sections that follow.

*Growing Greener* is a collaborative effort of the Pennsylvania Department of Conservation and Natural Resources, Natural Lands Trust, Pennsylvania State University Cooperative Extension and an advisory committee comprised of officials from the Department of Community and Economic Development, Center for Rural Pennsylvania, Lycoming County Planning Commission, Pennsylvania Environmental Council, Pennsylvania Planning Association and Department of Environmental Protection.

During 1997, Natural Lands Trust conducted

three *Growing Greener* pilot workshops hosted by the Centre County Planning Commission, Centre Region Planning Agency, Tri-County Regional Planning Commission and the Union County Planning Commission. Our focus during 1998 will be helping county planning agencies and other planning organizations build their capacity to help the communities they work with realize their conservation goals. In order to assist them, Natural Lands Trust has developed multi-media educational materials available for use by community planners across the state. We invite county planning agencies and interested planning consultants and conservancies to join us as *Growing Greener* partners.

### *How do I learn more?*

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# The Conservation Design Concept

Each time a property is developed into a residential subdivision, an opportunity exists for adding land to a community-wide network of open space. Although such opportunities are seldom taken in many municipalities, this situation could be reversed fairly easily by making several small but significant changes to three basic local land-use documents—the comprehensive plan, the zoning ordinance and the subdivision and land development ordinance. Simply stated, Conservation Design rearranges the development on each parcel as it is being planned so that half (or more) of the buildable land is set aside as open space. Without controversial “down zoning,” the same number of homes can be built in a less land-consumptive manner, allowing the balance of the property to be permanently protected and added to an interconnected network of community green spaces. This “density-neutral” approach provides a fair and equitable way to balance conservation and development objectives.

## Four Keys to Conservation

Communities protect open space because it protects streams and water quality, provides habitat for plants and animals, preserves rural “atmosphere,” provides recreational areas, protects home values and reduces costs of municipal services. In short, land conservation makes your community a better place to live. Four basic actions underlie the *Growing Greener* process:

**1 Envision the Future: Performing “community audits.”** Successful communities have a realistic understanding of their future. The audit projects past and current development trends into the future so that officials and residents may easily see the long-term results of con-

tinuing with current ordinance provisions. Communities use this knowledge to periodically review and adjust their goals and strategies for conservation and development.

**2 Protect Open Space Networks Through Conservation Planning.** Successful communities have a good understanding of their natural and cultural resources. They establish reasonable goals for conservation and development—goals that reflect their special resources, existing land use patterns and anticipated growth. Their comprehensive plans document these resources, goals and policies. The plan contains language about the kinds of

ordinance updating and conservation programs necessary for those goals to be realized. A key part of the Comprehensive Plan is a *Map of Potential Conservation Lands* that is intended to guide the location of open space in each new subdivision as it is being laid out.

**3 Conservation Zoning: A “Menu of Choices.”** Successful communities have legally defensible, well-written zoning regulations that meet their “fair share” of future growth and provide for a logical balance between community goals and private landowner interests. They incorporate resource suitabilities, flexibility, and incentives to require the

inclusion of permanent conservation lands into new subdivisions. The five zoning options summarized in this publication and described in detail in the *Growing Greener* manual respect the private property rights of developers without unduly impacting the remaining natural areas that make our communities such special places in which to live, work, recreate and invest in.

**4 Conservation Subdivision Design: A Four-Step Process.** Successful communities recognize that both design standards and the design process play an important part in conserving community resources. Such communities adopt subdivision codes which require detailed site surveys

and analyses identifying the special features of each property, and introduce a simple methodology showing how to lay out new development so that the majority of those special features will be permanently protected in designated conservation areas or preserves. To a

considerable extent, those preserves within new subdivisions can be pre-identified in the Comprehensive Plan so that each such area will form an integral part of a community-wide network of protected open space, as noted above.



**Figure 2**  
A matching pair of graphics, taken from an actual "build-out map," showing existing conditions (mostly undeveloped land) contrasted with the potential development pattern of "checkerboard suburbia" created through conventional zoning and subdivision regulations.

# 1 Envisioning the Future

## Performing "Community Audits"

The "community audit" visioning process helps local officials and residents see the ultimate result of continuing to implement current land-use policies.

The process helps start discussions about how current trends can be modified so that a greener future is ensured.

Sad but true, the future that faces most communities with standard zoning and subdivision codes is to witness the systematic conversion of every unprotected acre of buildable land into developed uses.

Most local ordinances allow or encourage standardized layouts of "wall-to-wall houselots." Over a period of decades this process produces a broader pattern of "wall-to-wall subdivisions" (see Figure 1). No community actively plans to become a bland suburb without open space. However, most zoning codes program exactly this outcome.

Municipalities can perform audits to see the future before it happens, so that they will be able to judge whether a mid-course correction is needed. A community audit entails:

### Numerical Analysis of Development Trends.

The first step involves a numerical analysis of growth projections, both in terms of the number of dwelling units and the number of acres that will probably be converted into houselots and streets under present codes.

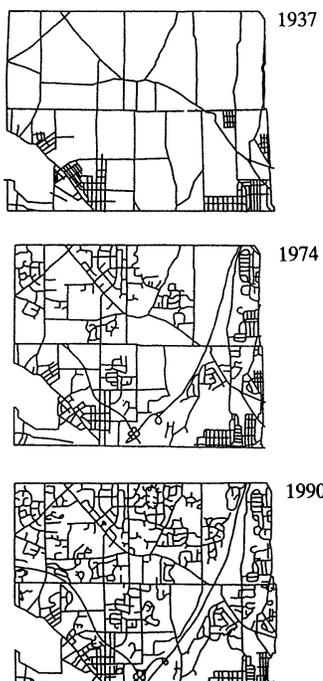
### Regulatory Evaluation.

The second step consists of an evaluation of the land-use regulations that are currently on the books, identifying their strengths and weaknesses and offering constructive recommendations about how they can incorporate the conservation techniques described in this booklet. It should also include a realistic appraisal of the extent to which private conservation efforts are likely to succeed in protecting lands from development through various nonregulatory approaches such as purchases or donations of easements or fee title interests.

### "Build-Out" Maps.

The third step entails mapping future development patterns on a map of the entire municipality (see Figure 2). Alternatively, the "build-out" map could focus only on selected areas in the municipality where development is of the greatest immediate concern, perhaps due to the presence of special features identified in the comprehensive plan or vulnerability due to development pressures.

*The following parts of this booklet describe practical ways in which communities can take control of their destinies so that conservation goals will be achieved simultaneously with development objectives, in a manner that is fair to all parties concerned. Three interrelated documents—the Comprehensive Plan, Zoning Code and Subdivision and Land Development Code, stand together like a three-legged stool providing a balanced footing for achieving a municipality's conservation goals.*



**Figure 1**  
The pattern of "wall-to-wall subdivisions" that evolves over time with zoning and subdivision ordinances which require developers to provide nothing more than houselots and streets.

## 2 Protecting Open Space Networks Through Conservation Planning

Although many communities have adopted either Comprehensive Plans or Open Space Plans containing detailed inventories of their natural and historic resources, very few have taken the next logical step of pulling together all that information and creating a *Map of Potential Conservation Lands*.

Such a map is vitally important to any community interested in conserving an interconnected network of open space. The map serves as the tool which guides decisions regarding which land to protect in order for the network to eventually take form and have substance.

A *Map of Potential Conservation Lands* starts with information contained in the community's existing planning documents. The next task is to identify two kinds of resource areas. *Primary Conservation Areas* comprise only the most severely constrained lands, where development is typically restricted under current codes and laws (such as wetlands, floodplains, and slopes exceeding 25%). *Secondary Conservation Areas* include all other locally noteworthy or significant features of the natural or cultural landscape—such as mature

woodlands, wildlife habitats and travel corridors, prime farmland, groundwater recharge areas, greenways and trails, river and stream corridors, historic sites and buildings, and scenic viewsheds. These *Secondary Conservation Areas* are often best understood by the local residents who may be directly involved in their identification. Usually these resource areas are totally unprotected and are simply zoned for one kind of development or another.

A base map is then prepared on which the *Primary Conservation Areas* have been added to an inventory of lands which are already protected (such as parks, land trust preserves, and properties under conservation easement). Clear acetate sheets showing each kind of *Secondary Conservation Area* are then laid on top of the base map in an order reflecting the community's preservation priorities (as determined through public discussion).

This overlay process will reveal certain situations where two or more conservation features appear together (such as woodlands and wildlife habitats, or farmland and scenic

viewsheds). It will also reveal gaps where no features appear.

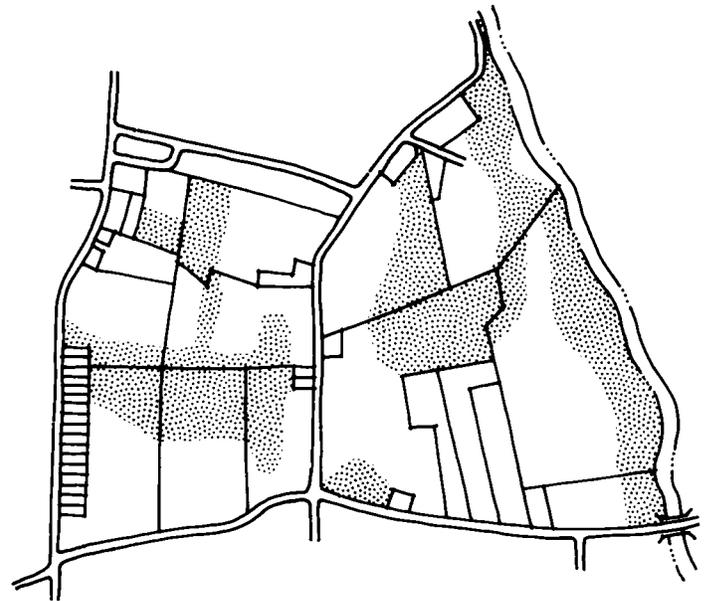
Although this exercise is not an exact science, it frequently helps local officials and residents visualize how various kinds of resource areas are connected to one another, and enables them to tentatively identify both broad swaths and narrow corridors of resource land that could be protected in a variety of ways.

Figure 3 shows a portion of a map prepared for one Chester County township which has followed this approach.

The planning techniques which can best implement

the community-wide *Map of Potential Conservation Lands* are *Conservation Zoning* and *Conservation Subdivision Design*. These techniques which work hand in hand are described in detail below. Briefly stated, conservation zoning expands the range of development choices available to landowners and developers. Just as importantly, it also eliminates the option of creating full-density "checkerboard" layouts that convert all land within new subdivisions into houselots and streets.

The second technique, "conservation subdivision design," devotes half or



**Figure 3**  
Part of a *Map of Potential Conservation Lands* for West Manchester Township, York County. West Manchester's map gives clear guidance to landowners and developers as to where new development is encouraged on their properties. Township officials engaged a consultant to draw, on the official tax parcel maps, boundaries of the new conservation lands network as it crossed various properties, showing how areas required to be preserved in each new development could be located so they would ultimately connect with each other. In this formerly agricultural municipality the hedgerows, woodland remnants, and the riparian buffer along the creek were identified as core elements of the conservation network.

more of the buildable land area within a residential development as undivided permanent open space. Not surprisingly, the most important step in designing a conservation subdivision is to identify the land that is to be preserved. By using the community-wide Map

of Potential Conservation Lands as a template for the layout and design of conservation areas within new subdivisions, these developments help to create an interconnected network of open space spanning the entire municipality.

Figure 4 shows how the open space in three adjoining subdivisions has been designed to connect, and illustrates the way in which the Map of Potential Conservation Lands can become a reality.

Figure 5 provides a bird's-eye view of a land-

scape where an interconnected network of conservation lands has been gradually protected through the steady application of conservation zoning techniques and conservation subdivision design standards.

## 3 Conservation Zoning A "Menu" of Choices

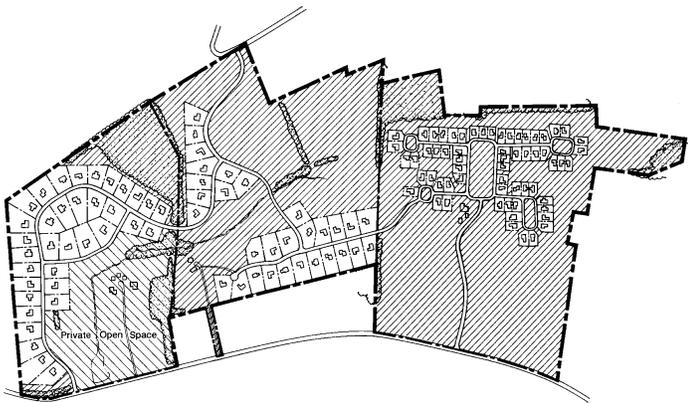
The main reason subdivisions typically consist of nothing more than houselots and streets is that most local land-use ordinances ask little, if anything, with respect to conserving open space or providing neighborhood amenities (see Figure 6).

Communities wishing to break the cycle of "wall-to-wall houselots" need to consider modifying their zoning to actively and legally encourage subdivisions that set aside at least 50 percent of the land as permanently protected open space and to incorporate substantial density disincentives for developers who do not conserve any significant percentage of land.

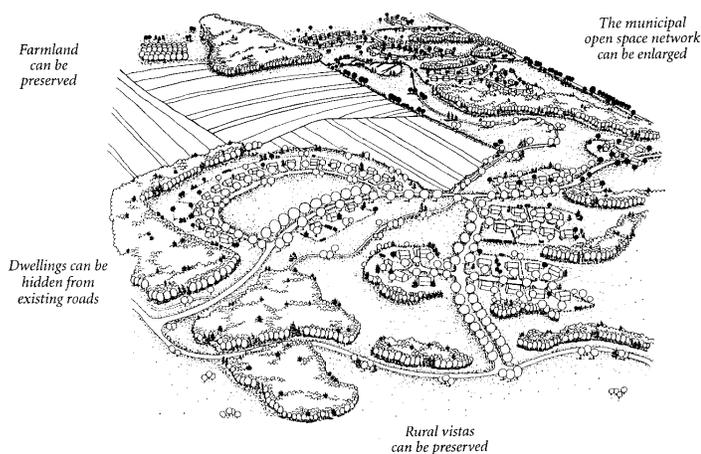
Following this approach, a municipality would first calculate a site's yield using traditional zoning. A developer would then be permitted full density *only* if at least 50 percent of the buildable land is maintained as undivided open space (illustrated in

Figure 7: "Option 1"). Another full-density option could include a 25 percent density bonus for preserving 60 percent of the unconstrained land (Figure 8: "Option 2"). Municipalities might also consider offering as much as a 100 percent density bonus for protecting 70 percent of that land (Figure 11: "Option 5").

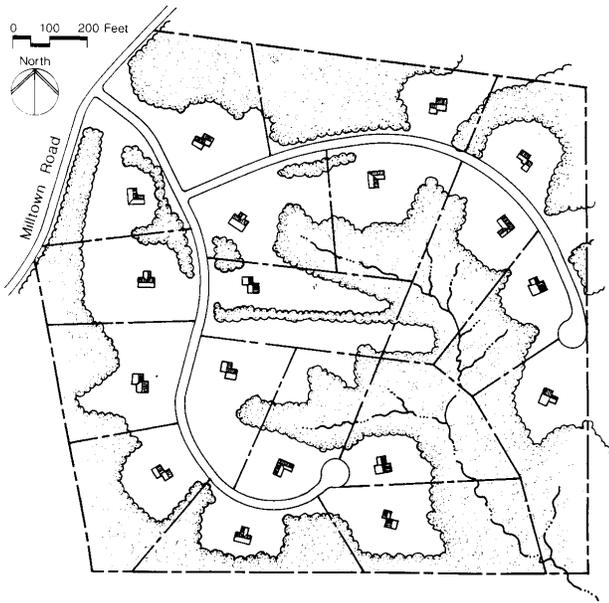
It is noteworthy that the 36 village-like lots in Option 5 occupy less land than the 18 lots in Option 1, and that Option 5 therefore contributes more significantly to the goal of creating community-wide networks of open space. The village-scale lots in Option 5 are particularly popular with empty-nesters, single-parent households, and couples with young children. Its traditional layout is based on that of historic hamlets and villages in the region, and new developments in this category could be controlled as Conditional



**Figure 4**  
The conservation lands (shown in gray) were deliberately laid out to form part of an interconnected network of open space in these three adjoining subdivisions.

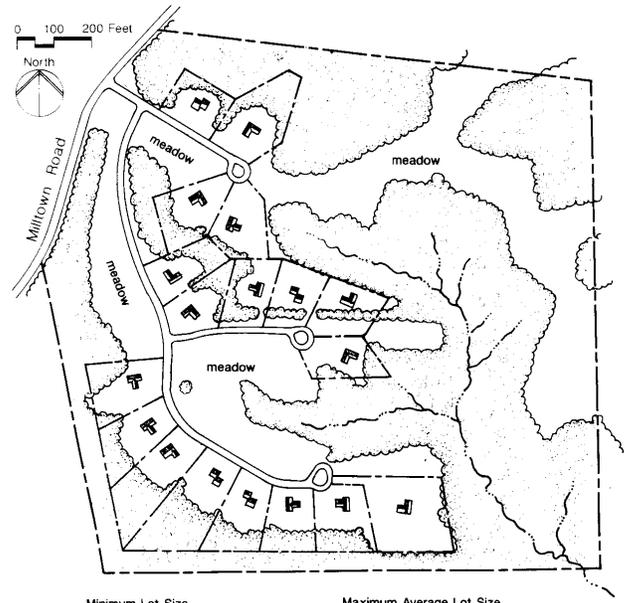


**Figure 5**  
This sketch shows how you can apply the techniques described in this booklet to set aside open space which preserves rural character, expands community parkland and creates privacy for residences. (Source: Montgomery County Planning Commission)



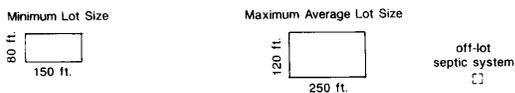
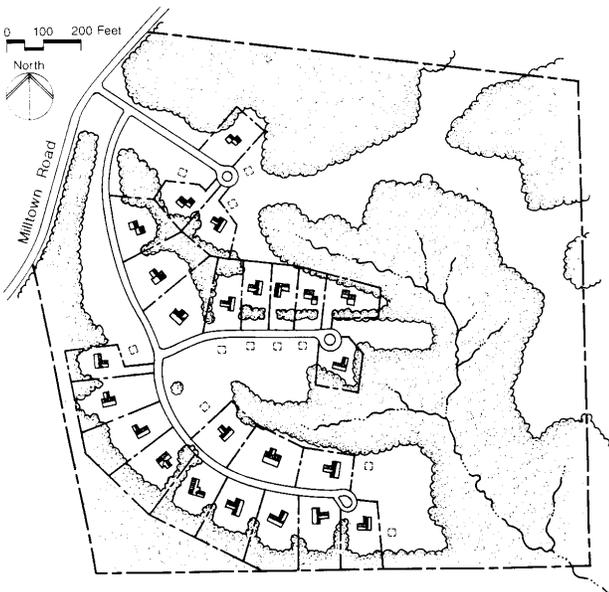
**Figure 6** YIELD PLAN

The kind of subdivision most frequently created in Pennsylvania is the type which blankets the development parcel with houselots, and which pays little if any attention to designing around the special features of the property. In this example, the house placement avoids the primary conservation areas, but disregards the secondary conservation features. However, such a sketch can provide a useful estimate of a site's capacity to accommodate new houses at the base density allowed under zoning—and is therefore known as a "Yield Plan."



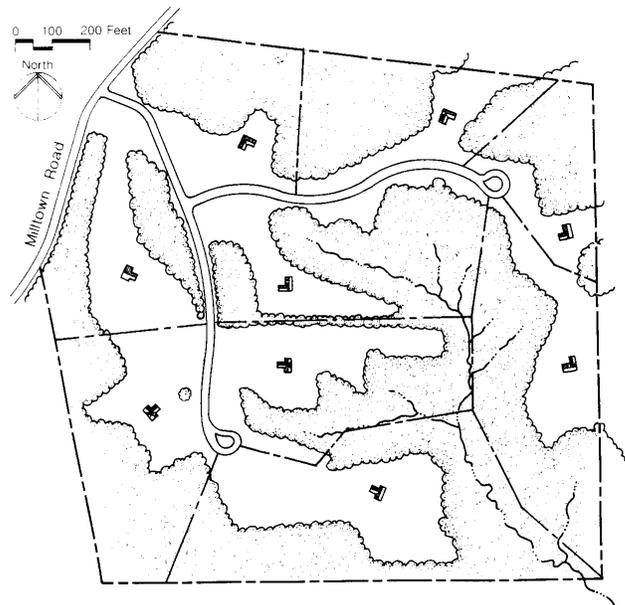
**Figure 7** OPTION 1

Density-neutral with Pre-existing Zoning  
18 lots  
Lot Size Range: 20,000 to 40,000 sq. ft.  
50% undivided open space



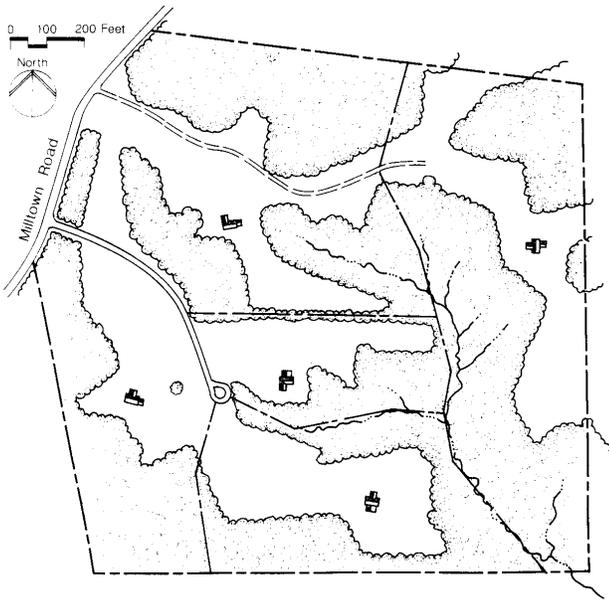
**Figure 8** OPTION 2

Enhanced Conservation and Density  
24 Lots  
Lot Size Range: 12,000 to 24,000 sq. ft.  
60% undivided open space

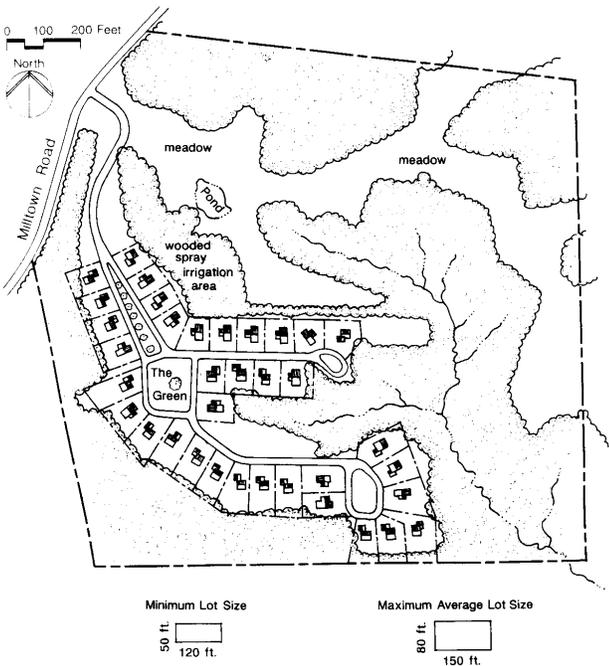


**Figure 9** OPTION 3

50% Density Reduction  
9 Lots  
Typical Lot Size: 160,000 sq. ft. (4 acres)  
Estate Lots



**Figure 10** OPTION 4  
Country Properties  
5 Lots  
Maximum Density: 10 acres per principal dwelling  
70% density reduction



**Figure 11** OPTION 5  
Hamlet or Village  
36 Lots  
Lot Size Range: 6,000 to 12,000 sq. ft.  
70% undivided open space

Uses subject to a set of extensively illustrated design standards.

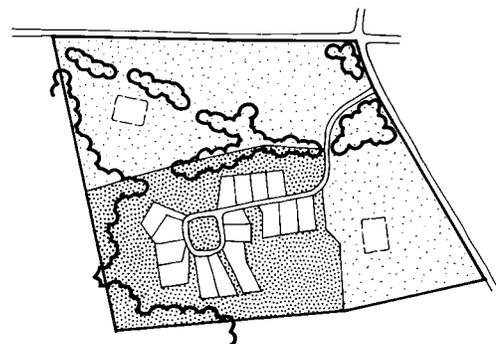
Developers wishing to serve the “estate lot” market have two additional options. One involves lots containing at least four acres of unconstrained land (Figure 9: “Option 3”). The other is comprised of “country properties” of at least 10 acres, which may be accessed by gravel drives built to new township standards for very low-volume rural lanes (Figure 10: “Option 4”). An additional incentive to encourage developers to choose this fourth option would typically be permission to build up to two accessory dwellings on these properties. Those units would normally be limited in size, subject to architectural design standards to resemble traditional estate buildings, and restricted from further lot division.

Two or more of these options could be combined on a single large property. One logical approach

would combine Options 4 and 5, with the Option 4 “country properties” comprising part of the required greenbelt open space around an Option 5 village (see Figure 12).

Conspicuously absent from this menu of choices is the conventional full-density subdivision providing no unfragmented open space (Figure 6). Because that kind of development causes the largest loss of resource land and poses the greatest obstacle to conservation efforts, it is not included as an option under this approach.

For illustrative purposes, this booklet uses a one dwelling unit per two acre density. However, conservation zoning is equally applicable to higher density zoning districts of three or four units per acre. Such densities typically occur in villages, boroughs, urban growth boundary areas and TDR receiving areas where open space setbacks are critical to the residents’ quality of life.



**Figure 12**  
An Option 5 village surrounded by its own open space and buffered from the township road by two “country properties” (Option 4).

# 4 Conservation Subdivision Design

## A Four-Step Process

Designing subdivisions around the central organizing principle of land conservation is not difficult. However, it is essential that ordinances contain clear standards to guide the conservation design process. The four-step approach described below has been proven to be effective in laying out new full-density developments where all the significant natural and cultural features have been preserved.

**Step One** consists of identifying the land that should be permanently protected. The developer incorporates areas pre-identified on the community-wide *Map of Potential Conservation Lands* and then performs a detailed site analysis in order to precisely locate features to be conserved. The developer first identifies all the constrained lands (wet, floodprone, and steep), called *Primary Conservation Areas* (Figure 13). He then identifies *Secondary Conservation Areas* (Figure 14) which comprise noteworthy features of the property that are typically unprotected under current codes: mature woodlands, greenways and trails, river and stream corridors, prime farmland, hedgerows and

individual free-standing trees or tree groups, wildlife habitats and travel corridors, historic sites and structures, scenic viewsheds, etc. After “greenlining” these conservation elements, the remaining part of the property becomes the *Potential Development Area* (Figure 15).

**Step Two** involves locating sites of individual houses within the Potential Development Area so that their views of the open space are maximized (Figure 16). The number of houses is a function of the density permitted within the zoning district, as shown on a *Yield Plan* (Figure 6). (In unsewered areas officials should require a 10 percent sample of the most questionable lots—which they would select—to be tested for septic suitability. Any lots that fail would be deducted and the applicant would have to perform a second 10 percent sample, etc.)

**Step Three** simply involves “connecting the dots” with streets and informal trails (Figure 17), while **Step Four** consists of drawing in the lot lines (Figure 18).

This approach reverses the sequence of steps in laying out conventional subdivisions, where the

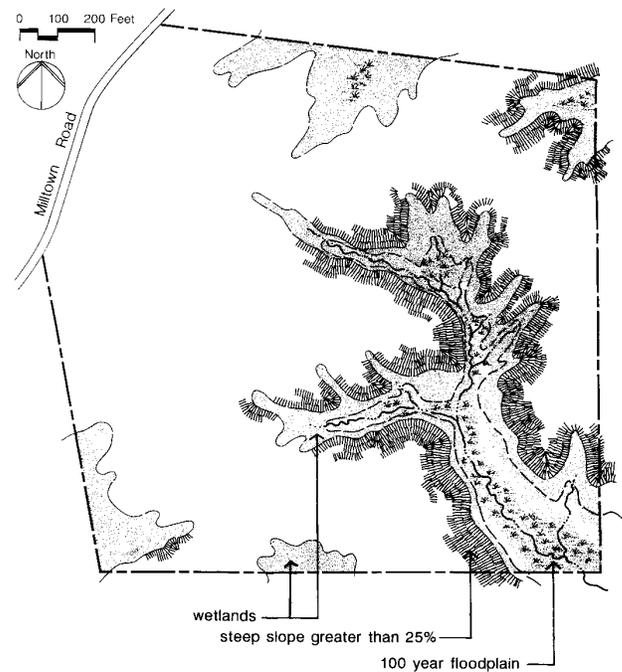


Figure 13 STEP ONE, Part One  
Identifying Primary Conservation Areas

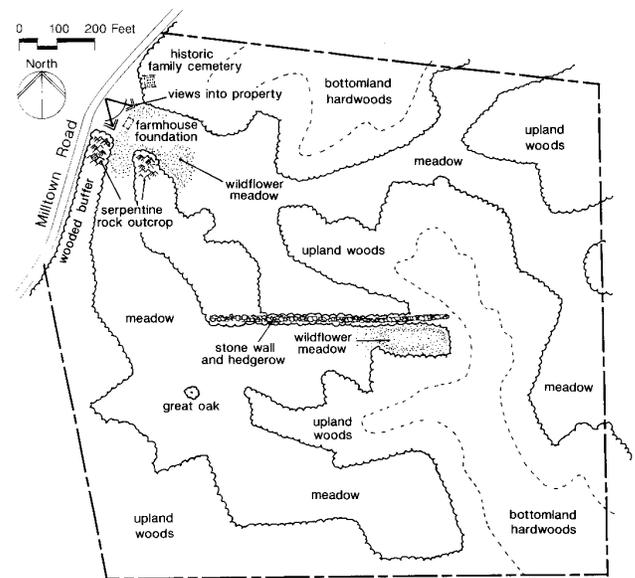
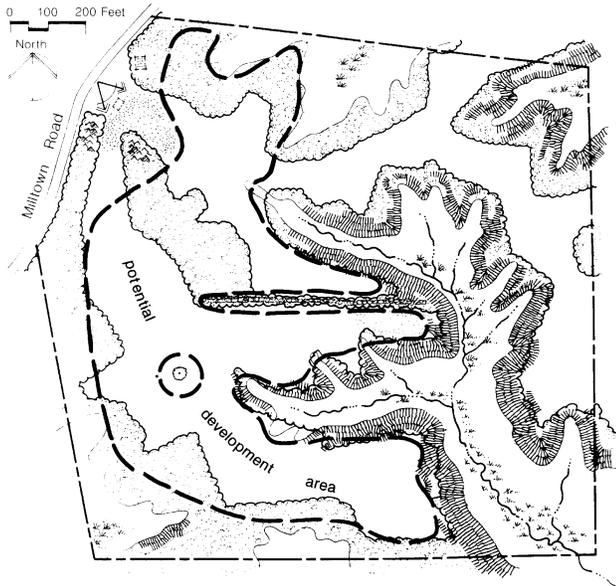
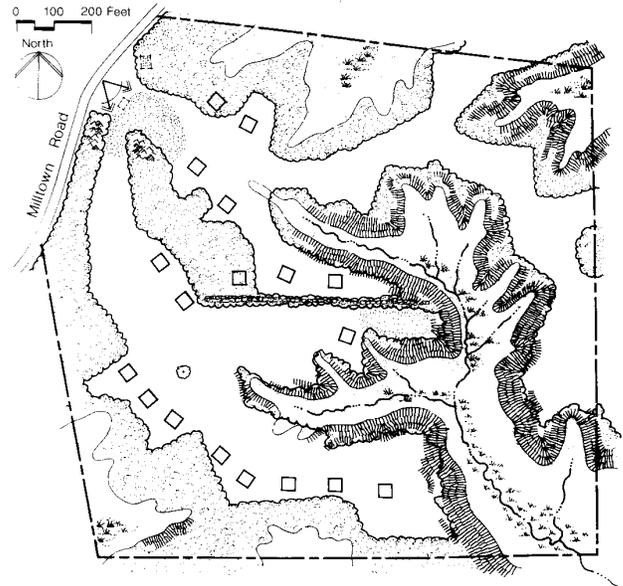


Figure 14 STEP ONE, Part Two  
Identifying Secondary Conservation Areas

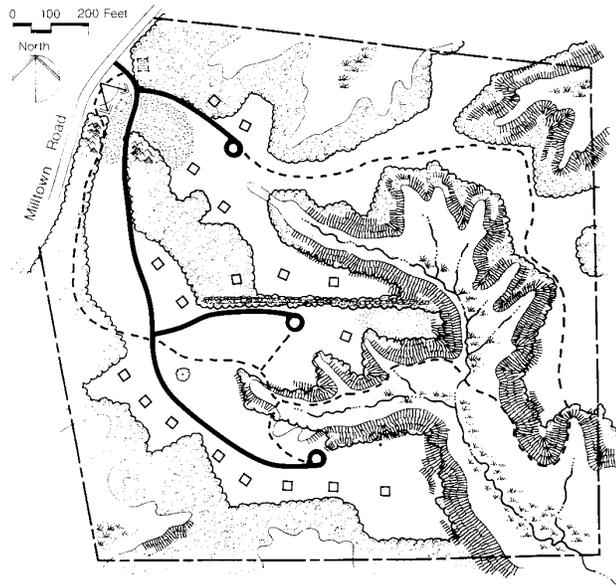
Typically unprotected under local codes, these special features constitute a significant asset to the property value and neighborhood character. Secondary conservation areas are the most vulnerable to change, but can easily be retained by following this simple four-step process.



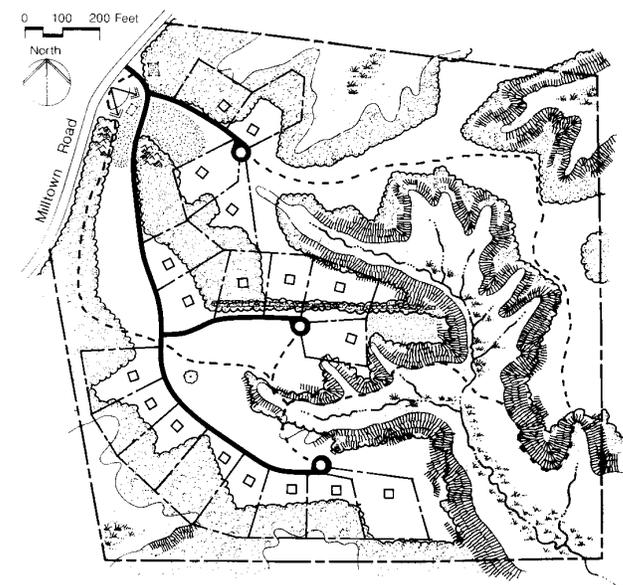
**Figure 15** STEP ONE, Part Three  
Potential Development Areas  
for Options 1, 2, and 5



**Figure 16** STEP TWO  
Locating House Sites



**Figure 17** STEP THREE  
Aligning Streets and Trails



**Figure 18** STEP FOUR  
Drawing in the Lot Lines

street system is the first thing to be identified, followed by lot lines fanning out to encompass every square foot of ground into houselots. When municipalities require nothing more than “houselots and streets,” that is all they receive. But by setting community standards higher and requiring 50 to 70 percent

open space as a precondition for achieving full density, officials can effectively encourage conservation subdivision design. The protected land in each new subdivision would then become building blocks that add new acreage to community-wide networks of interconnected open space each time a property is developed.

landowner or developer wants it to be. In the vast majority of situations, municipalities themselves have no desire to own and manage such conservation land, which they generally feel should be a neighborhood responsibility. In cases where local officials wish to provide township recreational facilities (such as ballfields or trails) within conservation subdivisions, the municipality must negotiate with the developer for the purchase of that land on a “willing seller/willing buyer” basis. To facilitate such negotiations, conservation zoning ordinances can be written to include density incentives to encourage developers to designate specific parts of their conservation land for public ownership or for public access and use.

A legal analysis of the *Growing Greener* workbook, by Harrisburg land use attorney Charles E. Zaleski, Esq., is reprinted on the last page of this booklet.

### *How can a community ensure permanent protection for conservation lands?*

The most effective way to ensure that conservation land in a new subdivision will remain undeveloped forever is to place a permanent conservation ease-

ment on it. Such easements run with the chain of title, in perpetuity, and specify the various conservation uses that may occur on the property. These restrictions are separate from zoning ordinances and continue in force even if legal densities rise in future years. Easements are typically held by land trusts and units of government. Since political leadership can change over time, land trusts are the most reliable holder of easements, as their mission never varies. Deed restrictions and covenants are, by comparison, not as effective as easements, and are not recommended for this purpose. Easements can be modified only within the spirit of the original agreement, and only if the co-holders agree. In practice, while a proposal to erect another house or a country club building on the open space would typically be denied, permission to create a small ballfield or a single tennis court in a corner of a large conservation meadow or former field might well be granted.

### *What are the ownership, maintenance, tax and liability issues?*

Among the most commonly expressed concerns about subdivisions which conserve open space are questions about who will

## Frequently Asked Questions About Conservation Subdivision Design

### *Does this conservation-based approach involve a “taking”?*

No. People who do not fully understand this conservation-based approach to subdivision design may mistakenly believe that it constitutes “a taking of land without compensation.” This misunderstanding may stem from the fact that conservation subdivisions, as described in this booklet, involve either large percentages of undivided open space or lower overall building densities.

There are two reasons why this approach does *not* constitute a “taking.”

*First, no density is taken away.* Conservation zoning is fundamentally fair because it allows landown-

ers and developers to achieve full density under the municipality’s current zoning—and even to increase that density significantly—through several different “as-of-right” options. Of the five options permitted under conservation zoning, three provide for either full or enhanced densities. The other two options offer the developer the choice to lower densities and increase lot sizes. Although conservation zoning precludes full-density layouts that do not conserve open space, this is legal because there is no constitutional “right to sprawl.”

*Second, no land is taken for public use.* None of the land which is required to be designated for conservation purposes becomes public (or even publicly accessible) unless the

own and maintain the conservation land, and who will be responsible for the potential liability and payment of property taxes. The short answer is that whoever owns the conservation land is responsible for all of the above. But who owns this land?

**Ownership Choices.**

There are basically four options, which may be combined within the same subdivision where that makes the most sense.

• *Individual Landowner*

At its simplest level, the original landowner (a farmer, for example) can retain ownership to as much as 80 percent of the conservation land to keep it in the family. (At least 20 percent of the open space should be reserved for common neighborhood use by subdivision residents.) That landowner can also pass this property on to sons or daughters, or sell it to other individual landowners, with permanent conservation easements running with the land and protecting it from development under future owners. The open space should not, however, be divided among all of the individual subdivision lots as land management and access difficulties are likely to arise.

• *Homeowners' Associations*

Most conservation land within subdivisions is owned and managed by homeowners' associations

(HOAs). A few basic ground rules encourage a good performance record. First, membership must be automatic, a precondition of property purchase in the development. Second, zoning should require that bylaws give such associations the legal right to place liens on properties of members who fail to pay their dues. Third, facilities should be minimal (ball fields and trails rather than clubhouses and swimming pools) to keep annual dues low. And fourth, detailed maintenance plans for conservation areas should be required by the municipality as a condition of approval. The municipality has enforcement rights and may place a lien on the property should the HOA fail to perform their obligations to maintain the conservation land.

• *Land Trusts*

Although homeowners' associations are generally the most logical recipients of conservation land within subdivisions, occasionally situations arise where such ownership most appropriately resides with a land trust (such as when a particularly rare or significant natural area is involved). Land trusts are private, charitable groups whose principal purpose is to protect land under its stewardship from inappropriate change. Their most common role is to hold easements or fee simple title on conservation lands

within new developments and elsewhere in the community, to ensure that all restrictions are observed. To cover their costs in maintaining land they own or in monitoring land they hold easements on, land trusts typically require some endowment funding. When conservation zoning offers a density bonus, developers can donate the proceeds from the additional "endowment lots" to such trusts for maintenance or monitoring.

• *Municipality or Other Public Agency*

In special situations a local government might desire to own part of the conservation land within a new subdivision, such as when that land has been identified in a municipal open space plan as a good location for a neighborhood park or for a link in a community trail network. Developers can be encouraged to sell or donate certain acreage to municipalities through additional density incentives, although the final decision would remain the developer's.

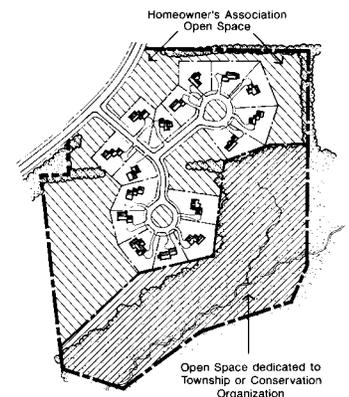
• *Combinations of the Above*

As illustrated in Figure 19, the conservation land within new subdivisions could involve multiple ownerships, including (1) "non-common" open space such as cropland retained by the original farmer, (2) common open space such as ballfields owned by an HOA, and (3) a trail

corridor owned by either a land trust or by the municipality.

**Maintenance Issues.**

Local officials should require conservation area management plans to be submitted and approved prior to granting final subdivision approval. In Lower Merion Township, Montgomery County, the community's "model" management plan is typically adopted by reference by each subdivision applicant. That document identifies a dozen different kinds of conservation areas (from woodlands and pastures to ballfields and abandoned farmland that is reforesting) and describes recommended management practices for each one. Farmland is typically leased by HOAs and land trusts to local farmers, who often agree to modify some of their agricultural practices



**Figure 19**  
Various private and public entities can own different parts of the open space within conservation subdivisions, as illustrated above.

to minimize impacts on nearby residents. Although ballfields and village greens require weekly mowing, conservation meadows typically need only annual mowing. Woodlands generally require the least maintenance: trimming bushes along walking trails, and removing invasive vines around the outer edges where greater sunlight penetration favors their growth.

**Tax Concerns.** Property tax assessments on conservation subdivisions should not differ, in total, from those on conventional developments. This is because the same number of houses and acres of land are involved in both cases (except when part of the open space is owned by a public entity, which is uncommon). Although the open space in conservation subdivisions is taxed low because easements prevent it from being developed, the rate is similar to that applied to land in conventional subdivisions where the larger houselots are not big enough to be further subdivided. (For example, the undeveloped back half of a one-acre lot in a one-acre zoning district is subject to minimal taxation because it has no further development value.)

**Liability Questions.** The Pennsylvania Recreation Use of Land and Water Act protects owners of undevel-

oped land from liability for negligence if the landowner does not charge a fee to recreational users. A tree root or rock outcropping along a trail that trips a hiker will not constitute landowner negligence. To be sued successfully in Pennsylvania, landowners must be found to have "willfully or maliciously failed to guard against a dangerous condition." This is a much more difficult case for plaintiffs to make. Even so, to cover themselves against such situations, owners of conservation lands routinely purchase liability insurance policies similar to those that most homeowners maintain.

### *How can on-site sewage disposal work with conservation subdivisions?*

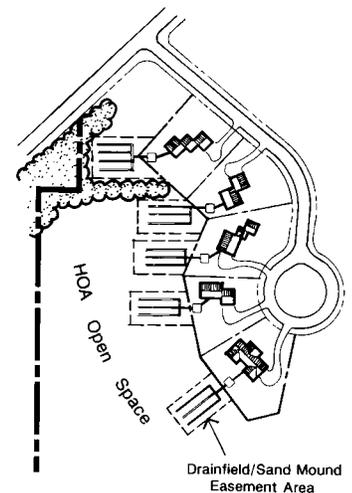
The conventional view is that the smaller lots in conservation subdivisions make them more difficult to develop in areas without sewers. However, the reverse is true. The flexibility inherent in the design of conservation subdivisions makes them superior to conventional layouts in their ability to provide for adequate sewage disposal. Here are two examples:

**Utilizing the best soils.** Conservation design requires the most suitable soils on the property to be identified at the outset, enabling houselots to be arranged to take the best advantage of them. If one end of a property has deeper, better drained soils, it makes more sense to site the homes in that part of the property rather than to spread them out, with some lots located entirely on mediocre soils that barely manage to meet minimal standards for septic approval.

**Locating individual systems within the open space.** Conventional wisdom also holds that when lots become smaller, central water or sewage disposal is required. That view overlooks the practical alternative of locating individual wells and/or individual septic systems within the permanent open space adjacent to the more compact lots typical of conservation subdivisions, as shown in Figure 20. There is no engineering reason to require that septic filter beds must be located within each houselot. However, it is essential that the final approved subdivision plan clearly indicate which parts of the undivided open space are designated for septic disposal, with each lot's disposal area graphically indicated through dotted lines extending out

into the conservation land. These filter beds can be located under playing fields, or conservation meadows in the same way they typically occupy positions under suburban lawns. (If mound systems are required due to marginal soil conditions, they are best located in passive use areas such as conservation meadows where the grass is cut only once a year. Such mounds should also be required to be contoured with gently sloping sides to blend into the surrounding landscape wherever possible.)

Although maintenance and repair of these septic systems remains the responsibility of individual lot owners, it is recommended that HOAs be authorized to pump individual septic tanks on a



**Figure 20**  
A practical alternative to central water or sewage disposal facilities are individually-owned wells and/or septic systems located within conservation areas, in places specifically designated for them on the final plan.

regular basis (every three or four years) to ensure that the accumulated sludge never rises to a level where it can flow into and clog the filter beds. This inexpensive, preventive maintenance greatly extends the life of filter beds.

### How does this conservation approach differ from “clustering”?

The *Growing Greener* conservation approach described here differs dramatically from the kind of “clustering” that has occurred in many communities over the past several decades. The principal points of difference are as follows:

**Higher Percentage and Quality of Open Space.** In contrast with typical cluster codes, conservation zoning establishes higher standards for both the quantity and quality of open space that is to be preserved. Under conservation zoning, 50 to 70 percent of the unconstrained land is permanently set aside. This compares with cluster provisions that frequently require only 25 to 30 of the gross land area be conserved. That minimal open space often includes all of the most unusable land as open space, and sometimes also includes undesirable, left-over areas such as

stormwater management facilities and land under high-tension power lines.

**Open Space Pre-Determined to Form Community-wide Conservation Network.** Although clustering has at best typically produced a few small “green islands” here and there in any municipality, conservation zoning can protect blocks and corridors of permanent open space. These areas can be pre-identified on a comprehensive plan *Map of Potential Conservation Lands* so that each new development will add to—rather than subtract from—the community’s open space acreage.

**Eliminates the Standard Practice of Full-Density with No Open Space.** Under this new system, full density is achievable for layouts in which 50 percent or more of the unconstrained land is conserved as permanent, undivided open space. By contrast, cluster zoning provisions are typically only optional alternatives within ordinances that permit full density, by right, for standard “cookie-cutter” designs with no open space.

Simply put, the differences between clustering and conservation zoning are like the differences between a Model T and a Taurus.

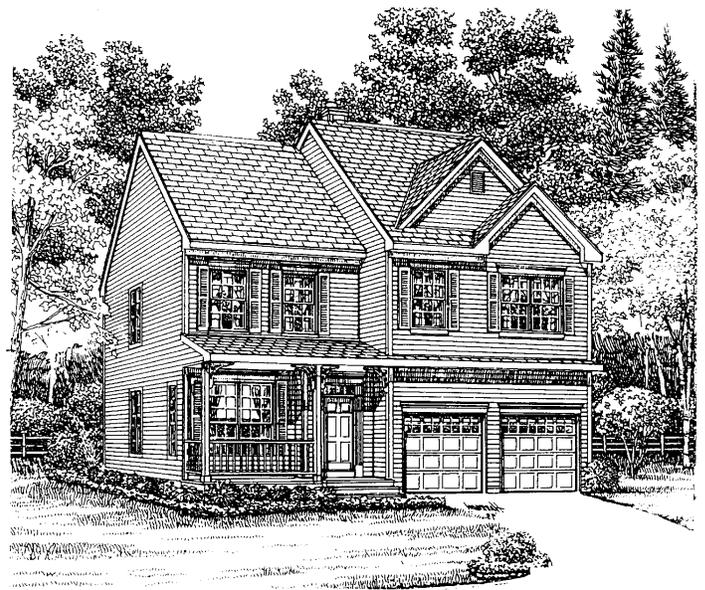
### How do residential values in conservation subdivisions compare to conventional subdivisions?

Another concern of many people is that homes in conservation subdivisions will differ in value from those in the rest of the community. Some believe that because so much land is set aside as open space, the homes in a conservation subdivision will be prohibitively priced and the municipality will become a series of elitist enclaves. Other people

take the opposite view, fearing that these homes will be smaller and less expensive than their own because of the more compact lot sizes offered in conservation subdivisions.

Both concerns are understandable but they miss the mark. Developers will build what the market is seeking at any given time, and they often base their decision about selling price on the character of surrounding neighborhoods and the amount they must pay for the land.

In conservation subdivisions with substantial open space, there is little or no correlation between lot size and price. These developments have sometimes been described as “golf



**Figure 21**  
This house design fits comfortably on lots 45 to 50 feet wide, demonstrating that homes with 2,400 sq. ft. of floorspace and a two-car garage can be built within the village-scale lots featured in the “Option 5” zoning alternative. (Courtesy of Hovnanian Homes, Fox Heath subdivision, Perkiomen Township, Montgomery County.)

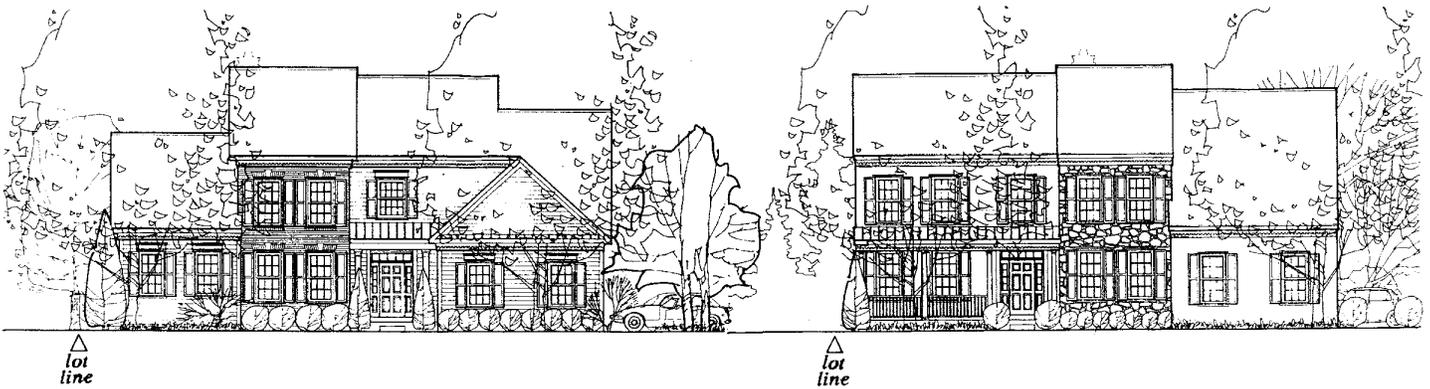


Figure 22

Developers who wish to build larger homes will find this example interesting. Although it contains nearly 3,000 sq. ft. and features an attractive side-loaded garage, it fits onto lots just 100 feet wide. This has been achieved by positioning the homes off-center, with 30 feet of side yard for the driveway and five feet of yard on the opposite side. This ensures 35 feet spacing between homes. (Courtesy of Realen Homes, Ambler)

course communities without the golf course,” underscoring the idea that a house on a small lot with a great view is frequently worth as much or more than the same house on a larger lot which is boxed in on all sides by other houses.

It is a well-established fact of real estate that people pay more for park-like settings, which offset their tendency to pay less for smaller lots. Successful developers know how to

market homes in conservation subdivisions by emphasizing the open space. Rather than describing a house on a half-acre lot as such, the product is described as a house with 20 and one-half acres, the larger figure reflecting the area of conservation land that has been protected in the development. When that conservation area abuts other similar land, as in the township-wide open space network, a further marketing advantage exists.

involving density shifts among contiguous parcels. Other techniques can be effective, but their potential for influencing the “big picture” is limited. The *Growing Greener* approach offers the greatest potential because it:

- does not require public expenditure,
- does not depend upon landowner charity,
- does not involve complicated regulations for shifting rights to other parcels, and
- does not depend upon the cooperation of two or more adjoining landowners to make it work.

Of course, municipalities should continue their efforts to preserve special properties in their entirety whenever possible, such as by working with landowners interested in donating easements or fee title to a local conservation group, purchasing development

rights or fee title with county, state or federal grant money, and transferring development rights to certain “receiving areas” with increased density. However, until such time as more public money becomes available to help with such purchases, and until the Transfer of Development Rights mechanism becomes more operational at the municipal level, most parcels of land in any given community will probably eventually be developed. In that situation, coupling the conservation subdivision design approach with multi-optioned conservation zoning offers communities the most practical, doable way of protecting large acreages of land in a methodical and coordinated manner.

## Relationship of the *Growing Greener* Approach to Other Planning Techniques

Successful communities employ a wide array of conservation planning techniques simultaneously, over an extended period of time. Complementary tools which a community should consider adding to its

“toolbox” of techniques include the purchase of development rights; donations of sales to conservancies; the transfer of development rights; and “landowner compacts”

tot lot and an informal picnic grove provide additional amenities to the residents. At *Farmview*, 137 acres of productive farmland were permanently protected, in addition to most of the woodlands. This subdivision prompted the township to revise its conventional zoning so that the developer's creative design could be approved. Since that time over 500 acres of prime farmland has been preserved in this community through conservation subdivision design representing a \$3.5 million conservation achievement (at an average land value of \$7,000) and these figures continue to grow as further subdivisions are designed. The potential for replicating this and achieving similar results throughout the Commonwealth is enormous.

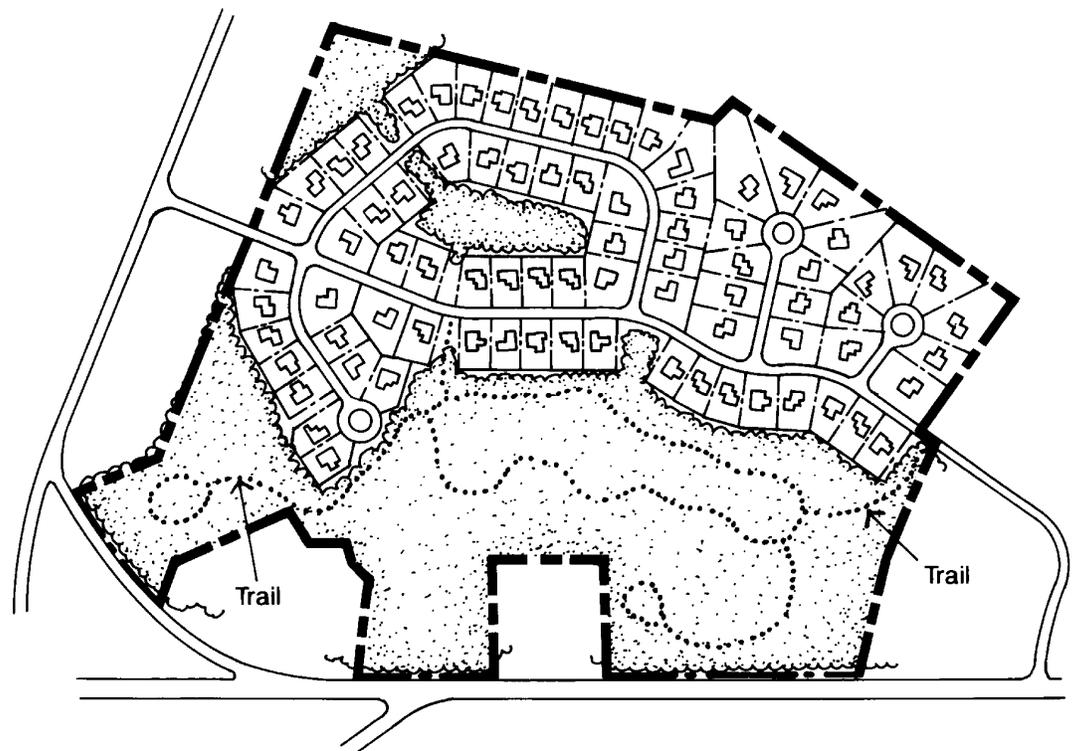
### Garnet Oaks

*Foulk Road, Bethel Township, Delaware County*

Developer: Realen Homes, Ambler

Development Period: 1993–94

Just over half of this 58-acre site has been conserved as permanent privately-owned open space through the simple expedient of reducing lot sizes to the 10,000–12,000 sq. ft. range (approximately 1/4 acre). The developer reports that these lot sizes did not hinder sales because about two-thirds of the lots directly abut the densely wooded open space, which gives them the feel and privacy of larger lots. In fact, the evidence indicates that the open space definitely enhanced sales in two ways: increased absorption rates and higher



prices (through premiums added to the prices of lots which abut the conservation areas).

The locations of these conservation areas were carefully selected after a comprehensive analysis of the site's natural and historic features had been conducted. Those secondary features that were identified for preservation included a line of mature sycamore trees along an existing farm lane, a stone wall and springhouse, and several areas of healthy deciduous upland woods, in addition to the site's delineated wetlands. Based on information received from post-sales interviews in its previous developments, Realen's staff learned that today's

homebuyers are considerably more discerning than they were 10 and 20 years ago, and now look for extra amenities not only in the houses but also in the neighborhood setting. This knowledge led Realen to take special measures to protect trees on individual houselots and within the street right-of-way. Their approach included collaborating with the Morris Arboretum in preparing a training manual for subcontractors and conducting training sessions in tree conservation practices, attendance at which was required of all subcontractors.

The centerpiece of Garnet Oaks' open space is the near mile-long wood-

land trail which winds its way through the 24-acre conservation area, connecting a well-equipped playground and a quiet picnic grove to the street system in three locations. Where the trail traverses areas of wet soils it is elevated on a low wooden boardwalk. This trail, which was cleared with assistance from a local Boy Scout Troop, features numerous small signs identifying the common and botanical names of the various plants and trees along the trail. Realen's staff also designed and produced an attractive eight-page trail brochure that illustrates and de-

scribes the flora, fauna, environmental areas, and historic features along the trail. The guide also explains the developer's creative use of low-lying woods as a temporary detention area for storm-water runoff, a naturalistic design that helped avoid a more conventional approach in which many trees within the preserve would have been removed to provide for a conventionally engineered basin. Realen's sales staff reported that prospective buyers who picked up a copy of the trail brochure and ventured out onto the trail typically decided to make their home purchase in Garnet Oaks.

## Farmview

*Woodside Road and Dolington Road, Lower Makefield Township, Bucks County*

Developer: Realen Homes, Ambler

Development Period: 1990-96

Located on a 418-acre site, Farmview is a 322-lot "density-neutral" subdivision whose layout was designed to conserve 213 acres of land (51 percent of the property), including 145 acres of cropland and 68 acres of mature woods. While 59 percent of the original farmland was needed for development, 41 percent categorized as prime agricultural and farmland of statewide importance was able to be

preserved in addition to nearly all of the wooded areas.

The 145 acres of farmland that have been saved were donated by the developer to the Lower Makefield Farmland Preservation Corporation, a local conservation organization whose members include local farmers, township residents and an elected official liaison. This cropland is leased to farmers in the community through multi-year agree-

ments that encourage adaptation of traditional farming practices to minimize impacts on the residents, whose yards are separated from their operations by a 75-foot deep hedgerow area thickly planted with native species trees and shrubs.

Realen Homes also donated the 68 acres of woodland to the township to support local conservation efforts in creating an extended network of forest

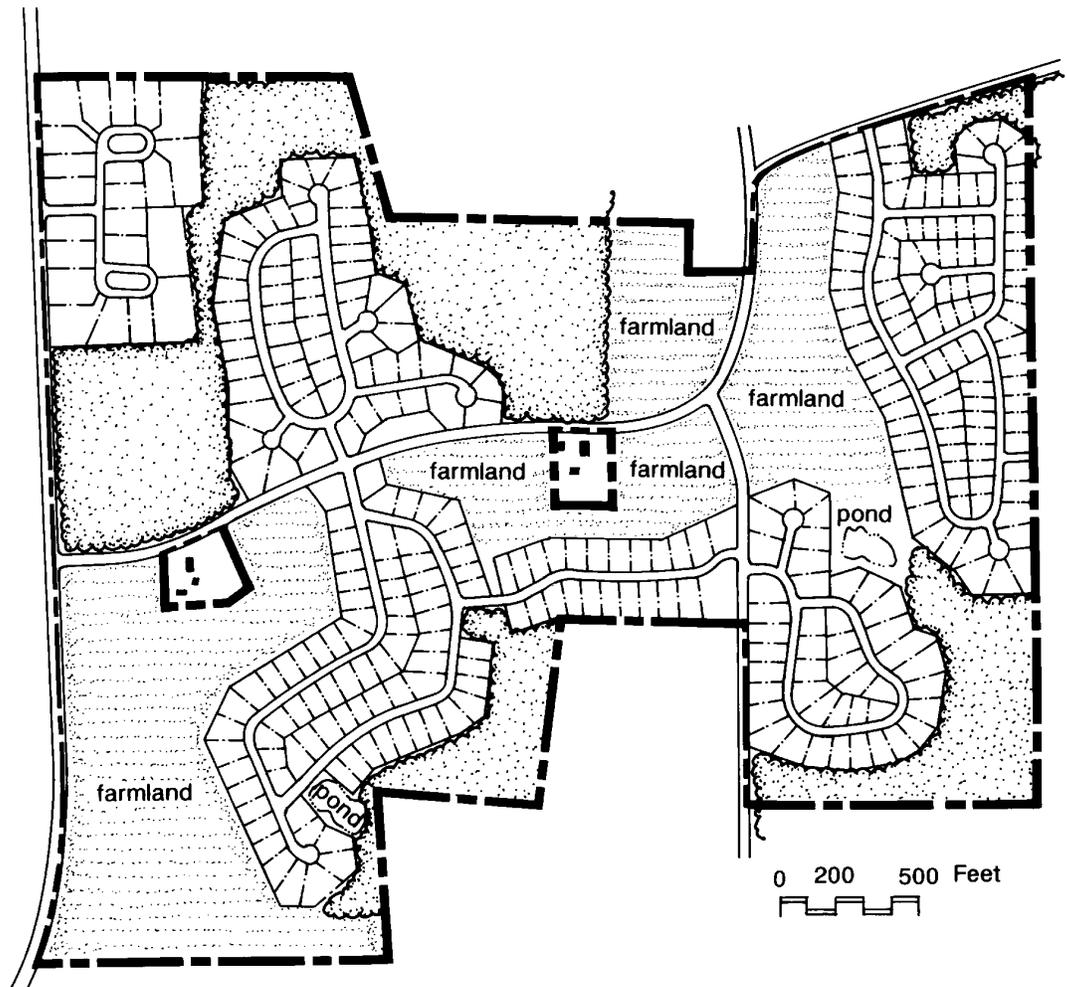
habitat and wildlife travel corridors. These areas also offer potential for an informal neighborhood trail system in future years. (The developer's offer to construct such trails was declined by the supervisors, citing liability concerns, despite the fact that other townships in the region actively encourage such trails in new subdivisions and also on township conservation lands.)

Had it not been for the developer's initiative and continued interest, this subdivision would have been developed into the same number of standard-sized one-acre lots, which was the only option permitted under the township's zoning ordinance in 1986 when Realen purchased the property. After 18 months of discussing the pros and cons of allowing smaller lots in exchange for serious land conservation benefits, the supervisors adopted new zoning provisions permitting such layouts specifically to preserve farmland when at least 51

percent of a property would be conserved. These regulations target the most productive soils as those which should be "designed around."

Although other developers were at first skeptical of Realen's proposal to build large homes (2,600–3,700 sq. ft.) on lots which were typically less than a half an acre in a marketplace consisting primarily of one acre zoning, the high absorption rate helped

convince them that this approach was sound. Contributing to the project's benefits to both the developer and the township were reduced infrastructure costs (for streets, water, and sewer lines). Premiums added to "view lots" abutting the protected fields or woods also contributed to the project's profitability.



ECKERT SEAMANS CHERIN & MELLOTT, LLC

ATTORNEYS AT LAW

October 16, 1997

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Post Office Box 1248  
Harrisburg, PA 17108

Randall G. Arendt, Vice President  
Conservation Planning  
Natural Lands Trust, Inc.  
1031 Palmers Mill Road  
Media, PA 19063

Re: Conservation Planning Documents and  
*Growing Greener* Workbook

Dear Mr. Arendt:

I have had the opportunity to review the *Growing Greener* workbook and the proposed conservation planning concepts set forth in that workbook for compliance with the provisions of the United States Constitution, the Pennsylvania Constitution, and the Pennsylvania Municipalities Planning Code (the "MPC"). In my opinion, the conservation planning concepts as set forth in the *Growing Greener* workbook are constitutional land use control concepts and the provisions comport with the requirements of the Pennsylvania Municipalities Planning Code.

The subdivision concept which provides for a conceptual preliminary plan and standards for that plan is authorized specifically under the MPC as part of the two-stage planning process allowed by Section 503(1) of the MPC. The Zoning Ordinance concept utilizes a multi-tiered zoning system with options available to the landowner under the Zoning Ordinance. Such a device is specifically authorized under Section 605 of the MPC which specifically encourages innovation and promotion of flexibility, economy and ingenuity in development based upon express standards and criteria. The proposed ordinances contained in the workbook satisfy that specific requirement.

The provisions of both the United States Constitution and the Pennsylvania Constitution require that the land use regulations be reasonable and be intended to benefit the public health, safety and welfare. The concept of providing a variety of options for choices by the landowner meets both the reasonableness and public purpose tests of constitutionality. The benefit of the *Growing Greener* concept is that there will be a greater amount of usable open space, while at the same time the landowners will be able to make reasonable use of their property under the options available as proposed in the workbook.

Individual municipalities within the Commonwealth of Pennsylvania will have to apply the concepts and will have to establish their own densities based upon the unique circumstances in each particular municipality. There can be no guarantee that all such ordinances will be constitutional unless they satisfy the requirements of being reasonable with regard to the locational circumstances of the particular property and community in question. However, it is my opinion that if the concepts and procedures set forth in the *Growing Greener* workbook are followed and that the densities and requirements reflect the unique circumstances of the individual municipality, that the *Growing Greener* concept is lawful and constitutional in the Commonwealth. The concepts set forth in the *Growing Greener* workbook provide a new method of addressing the pressures of growth and development throughout both the urban and rural portions of the Commonwealth of Pennsylvania, and I urge the municipal officials to give full consideration to these exciting new concepts.

Very truly yours,



Charles E. Zaleski

CEZ/ljr

Harrisburg  
Pittsburgh  
Allentown  
Philadelphia  
Boston  
Fort Lauderdale  
Boca Raton  
Miami  
Tallahassee  
Washington, D.C.



# ZONING PRACTICE

NOVEMBER 2015



AMERICAN PLANNING ASSOCIATION

➔ ISSUE NUMBER 11

## PRACTICE TINY HOUSES



# Tiny Houses, and the Not-So-Tiny Questions They Raise

By Donald L. Elliott, FAICP, and Peter Sullivan, AICP

Where did they come from—those cute little “cabins-on-wheels” that you see being pulled down the road or sitting on a lot?

With wood siding, a pitched roof, gable windows . . . and even a porch with a railing. All that’s missing is the dog in the yard (presumably a small dog in a small yard).

Tiny houses are the latest vehicle/structures to join the small house movement, and are now trending due to television programs like *Tiny House Nation*. Many individuals and couples seem proud to say they live a small but sophisticated lifestyle in less than 500 square feet. Often their stated motivation is to declutter and live a simpler life—maybe even a life “off the grid.”

Cuteness aside, tiny houses raise some interesting questions for planners. Questions like . . .

“Is this a house, or a trailer, or . . . just what is it?”

“Would this qualify as an accessory dwelling unit?”

“Does this meet the residential building code?”

“Where should we allow this to be parked . . . or occupied . . . and for how long?”

This article attempts to answer some of those questions for the types of small, trailer-mounted units described above. The sections below review how these units fit into the general U.S. system of land-use control through building codes, zoning ordinances, subdivision regulations, and private



restrictive covenants. In addition to addressing individual tiny homes, we also address how small communities of tiny homes might be created.

## WHAT ARE THEY?

What are tiny houses? The answer is simpler than you think. They’re recreational vehicles (RVs), and a careful read of the manufacturers’ websites makes that clear. One manufacturer, Tumbleweed Tiny House Company, states that their product is “an RV like you’ve never seen before.”

For planners, this makes things simpler. The question then becomes, “Where do we allow RVs to be occupied?” Traditionally, the answer has been campgrounds (for temporary living) and RV parks (for longer-term living). Most communities typically limit temporary RV occupancy (in a campground or elsewhere) to 30 days, and the logic behind this is that RVs are not permanent dwellings. They have electric systems and water tanks and sewage tanks (or composting toilets) that can only operate for a while before they need to be hooked up to support systems or emptied.

But this answer doesn’t satisfy everyone, especially tiny-house proponents and anyone else interested in living smaller, more simply, and (presumably) more affordably (more on that later).

➡ Most localities have no specific provisions in their subdivision or zoning codes to accommodate small trailer-mounted homes outside of recreational vehicle parks.

**Donald L. Elliott, FAICP, is a director in the Denver office of Clarion Associates, a former chapter president of APA Colorado, and a former chair of the APA Planning and Law Division. As a planner and lawyer he has assisted more than 40 North American cities and counties reform and update their zoning, subdivision, housing, and land-use regulations. He has also consulted in Russia, India, Lebanon, and Indonesia, and served as USAID Democracy and Governance Advisor in Uganda for two years. Elliott is a member of the Denver Planning Board.**

**Peter Sullivan, AICP, is a senior associate in the Chapel Hill, North Carolina, office of Clarion Associates. His specializations include zoning and comprehensive planning. A Pacific Northwest native, his professional background includes policy and environmental planning and development review. Sullivan is a former officer with Toastmasters International and former member of the University of Washington’s Urban Design and Planning Professionals Council. He is currently a correspondent for Planetizen.com and enjoys speaking as academic guest lecturer, webinar host, and conference presenter. Sullivan’s project work has been recognized by the Washington State Governor’s Office, Puget Sound Regional Council, and the Washington Chapter of APA.**



➔ This tiny house is the star of its own YouTube channel, Tiny House Giant Journey.

Here’s why tiny houses are so tricky. Although tiny houses are not generally designed for permanent occupancy, some of them are being purchased by people who intend to use them that way. Most zoning ordinances don’t resolve this tension, because they don’t address where or how tiny houses can be used for long-term or permanent occupancy.

**BUILDING AND OCCUPANCY CODES**

With the exception of some very rural communities, most cities and counties require that long-term or permanent residential units meet either the locally or state-adopted residential building code (usually some version of the International Residential Code), or the U.S. Department of Housing and Urban Development (HUD) national standards for manufactured housing safety. Since manufactured homes are obviously not constructed like stick-built housing—and since (unlike stick-built housing) they can be moved across state lines in interstate commerce—back in 1974 HUD adopted national safety standards for this type of housing. As a general rule, residential units for long-term occupancy need to meet one of these two sets of standards.

Unfortunately for many purchasers, some tiny houses do not meet these requirements. While tiny houses might meet the Recreational Vehicle Industry Association (RVIA) safety standard for highway travel and temporary living, these standards are not the same as the HUD manufactured housing standards for permanent living. In fact, the website for CAVCO (a manufacturer of “park model” recreational vehicles—which are similar to and sometimes in-

clude tiny houses)—states that these vehicles “are not intended for, nor should they be used for, anything other than recreational camping or seasonal use. They are not permanent residences and should not be used as such.”

**For those intending to live in their tiny house full time, the trick is to find a tiny house that not only meets the RVIA standards but also the residential building code or manufactured housing standards.**

For those intending to live in their tiny house full time, the trick is to find a tiny house that not only meets the RVIA standards but also the residential building code or manufactured housing standards. Or to look for a community that has adopted a building code allowing long-term occupancy of tiny houses. Some communities have done this, and in many communities the ability to use a tiny house for long-term occupancy turns on whether it will be mounted on a permanent foundation and connected to utilities.

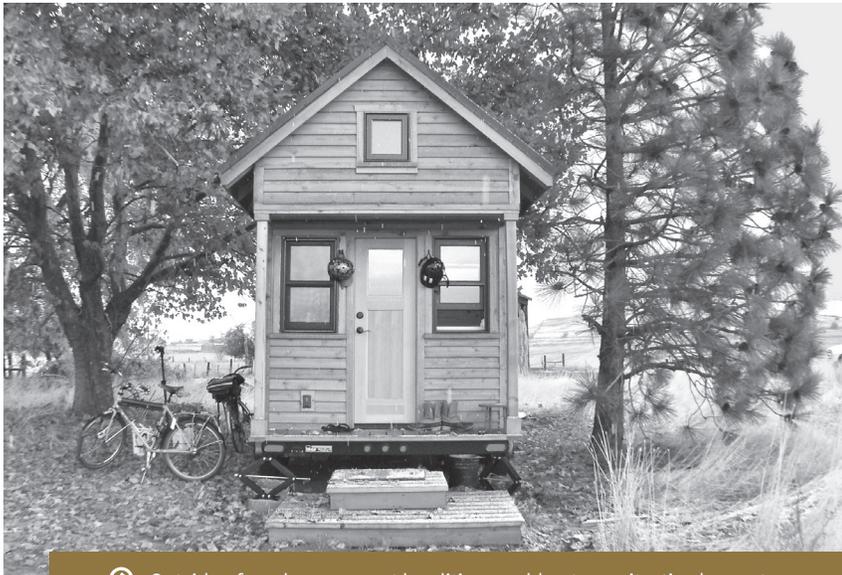
**FOUNDATIONS MATTER**

Let’s assume a potential buyer doesn’t want to install a tiny house in a campground or RV park, but rather a traditional residential lot. Some communities allow this if the owner removes the wheels (and sometimes the axles); installs the unit on a permanent foundation (or at a minimum uses secure tie-downs); and connects the unit to public water, sewer, and electric systems.

The logic behind these requirements is that they convert a mobile housing unit into a stationary unit, protect against “blowovers” and other wind-related damage (to the occupants and to neighboring property owners), and make the utility systems safe for long-term operation.

As an example, the small community of Spur, Texas, (population 1,245) has marketed itself as the “First Tiny House Friendly City.” Spur permits tiny houses to be used as permanent, primary dwellings by creating an exception to the general building code/manufactured home standard compliance requirement. However, even in this deliberately welcoming community, wheels must be removed, a foundation must be constructed, and the unit tied to the foundation with “hurricane straps,” and the unit must be hooked up to local sewer, water, and electric systems. In one well-documented case the cost of the foundation and connections came to about \$5,700 (McCann 2015). In some Spur zoning districts, tiny houses are permitted by right, but in others a variance is required.

Again, there are exceptions. A tiny-house owner might be successful living an off-the-grid lifestyle in areas that are literally far from the grid. In some very rural communities, stick-built



"Fall and winter, side by side" by Tammy Strobel, Flickr (CC BY 2.0)

➡ Outside of rural areas, most localities would not permit a tiny house to serve as a primary dwelling unit unless it was mounted on a permanent foundation and connected to local utilities.

homes do not need to connect to water and sewer systems (i.e., they permit well and septic systems) or electric systems (i.e., they allow off-the-grid power), and those communities would presumably allow the same exceptions for tiny houses.

**NOW, ABOUT THOSE ZONING RULES**

So, if a buyer doesn't want to live in an RV park, *and* is willing to remove the wheels, install a foundation, and connect to utilities, *and* the local government allows long-term occupancy of tiny houses under those conditions, where can the unit be located? The answer depends on local zoning regulations. Most zoning ordinances do not list tiny houses by name; they simply treat them like other housing uses.

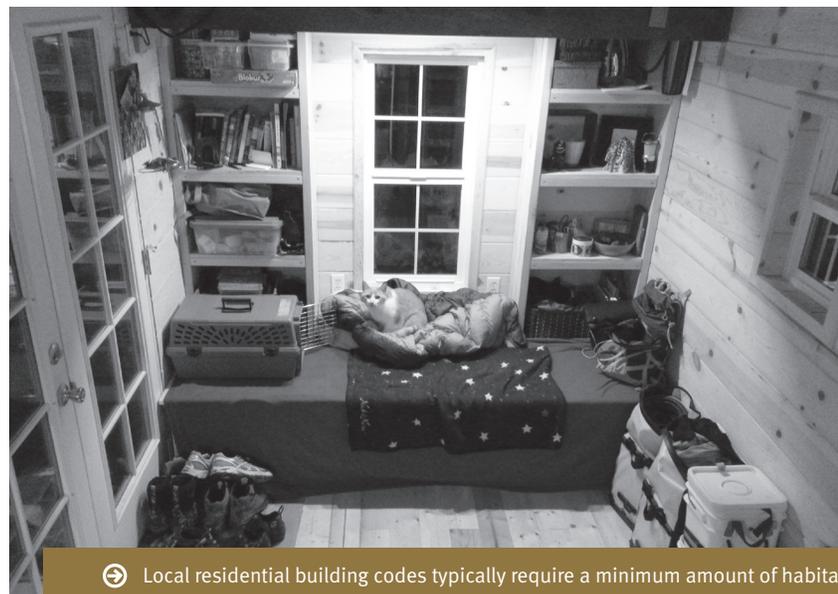
For a tiny house to be used as a primary dwelling unit (i.e., there is no other house or primary use on the property), the question is whether the lot is zoned for single-family homes and whether the tiny house meets any minimum size requirements for houses in that zone. Most zoning codes across the U.S. do not include minimum floor space requirements for single-family homes. But some do, and that can be a barrier to installing tiny houses. Generally this occurs when a residential neighborhood has been developed for—or with—large homes, and some of the lots already have large homes on them. In those circumstances, the local government or neighborhood residents may want to protect against the remaining lots being

occupied by smaller homes that they fear will reduce the neighborhood quality or character. Some communities, for example, have adopted minimum width or length-to-width requirements for single-family homes in an attempt to keep "single-wide" manufactured homes out of neighborhoods where the housing stock is of a different character. Those requirements would likely prohibit the installation of a tiny house, despite their charming appearance.

Whether this is fair to the tiny-house (or manufactured home) buyer, and whether it represents sound land-use policy, are emerging issues for debate. Minimum residential size limits are already in poor repute these days because they tend to drive housing prices up; however, these types of requirements are generally not illegal.

One work-around for the eager tiny-house buyer may be to install a tiny house as an accessory dwelling unit (ADU) (i.e., a second housing unit on a lot that already has a primary housing unit or another primary use of land). While ADUs are a fairly recent development, an increasing number of zoning ordinances now address where and under what conditions an ADU can be installed. Again, since most zoning ordinances do not address tiny houses by name, the question is whether your tiny house meets the requirements applicable to other forms of ADUs. One threshold question is whether the community allows detached ADUs or only allows internal ADUs constructed within the building envelope of an existing home. If the latter is true, a tiny house ADU will not be allowed. If the community allows detached ADUs, they often attach conditions like the following:

- Either the primary housing unit or the ADU must be occupied by the owner of the land.
- The ADU must not exceed a maximum size (generally 400 or 600 or 800 square feet).
- An extra on-site parking space for the ADU occupant may be required.



"Tiny house" by Tomas Quinones, Flickr (CC BY SA 2.0)

➡ Local residential building codes typically require a minimum amount of habitable space per occupant, which may prevent legal habitation of tiny houses by more than one person.

- The ADU may not be allowed to have its entrance door facing the street.
- The part of the lot containing the ADU cannot be carved off and sold as a separate lot.
- If the tiny house can meet these requirements, it may be acceptable as an ADU, even if it would not be approved as a primary home on the same lot. In some cases, however, ordinances that allow detached ADUs limit them to existing structures like carriage houses, garages, or barns, which would prohibit tiny-house ADUs.

Finally, it is important to realize that most communities apply the same building, foundation, and utility requirements to ADUs that they do to primary structures. So if the question is, “can I park my tiny house in my parents’ backyard and live in it without installing a foundation or hooking up to utilities?” the answer is probably *no*. Long-term occupancy of a recreational vehicle in a residential zone district (say, for more than 30 days) is usually illegal regardless of whether you have the property owner’s consent or you are related to them.

So tiny-house owners need to be thoughtful about where they intend to install the unit, and need to read the zoning ordinance carefully to ensure it is allowed in the area where they want to live. The good news (for planners) is that it is fairly easy to review the existing zoning code and see whether the code permits tiny houses as primary units or ADUs in those locations where the community wants to allow them. Planners might also want to promote more permissive regulations if the community is ready to remove a potential housing barrier.

#### OTHER POTENTIAL BARRIERS

OK. So you have decided that your community wants to allow long-term occupancy of a tiny house, and you have modified the zoning ordinance to clarify where they are allowed. There are still three other potential barriers to think about.

First, unless you want to install the tiny house in a very rural area, the parcel of land where the tiny house will be located generally needs to be a subdivided lot. Subdivision regulations ensure that each parcel of land that will be developed with something other than open space or agriculture has access to a street and has utilities in place (if utilities are required in that location). This could be an issue if the tiny-house owner wants to buy 1,000



“Tiny house” by Hitenemo, Flickr (CC BY-NC-SA 2.0)

➔ This tiny house, with a bathroom and a sleeping loft, serves as an accessory dwelling unit.

**Tiny-house owners need to be thoughtful about where they intend to install the unit, and need to read the zoning ordinance carefully to ensure it is allowed in the area where they want to live.**

square feet of land from a property owner—just enough to accommodate the tiny house and a “livin’ small” lifestyle—but the subdivision regulations require a minimum lot size of 5,000 square feet. Or it could be an issue if the tiny house must be connected to utilities but the land in question does not yet have utilities in place to connect to.

Second, the community should probably advise the tiny-house owner to check that private restrictive covenants attached to the land do not prohibit tiny houses in that area. Again, *tiny house* will probably not be listed by name, but it is not uncommon to find private covenants that contain minimum house size requirements even if the zoning ordinance does not. While it is generally not the city or

county planner’s job to check on the existence of private covenants when issuing a zoning approval or a building/installation permit, and local governments are generally not responsible for enforcing those covenants, advising the tiny-house owner to check on this is just good customer service. In the end, the fact that the city or county issues a permit to install a tiny house with a foundation does not protect the owner against a suit from other property owners pointing out that the tiny house does not meet restrictive covenant minimum-size requirements.

Third, even if neither the zoning ordinance nor private restrictive covenants prohibit the tiny house because of its size, many communities have residential occupancy codes to prevent overcrowding. While occupancy codes vary, it is not uncommon to find a requirement that the unit contain 125 square feet of living area per occupant, or that it not contain more than two occupants per bedroom. That could be a problem if the owner intends to house his or her family of four in a 400-square-foot tiny house, no matter how well they get along. Since occupancy of the unit may change in the future (the owner’s out-of-work cousin may move in), it is hard to ensure against overcrowding when the installation permit is issued, but making the owner aware of these requirements is good customer service.

#### WHAT ABOUT A TINY HOUSE COMMUNITY?

What about a whole group of folks (or a developer) who want to create an entire neighbor-

hood of tiny houses as a source of affordable housing, or just to accommodate a different lifestyle?

That is a bit tougher. While the Internet has many stories of individuals or property owners intending to create tiny house communities, it seems that few if any have been created to date. And some of the existing communities have been created for unique reasons and through “one-off” procedures.

For example, places like Opportunity Village in Eugene, Oregon, or Quixote Village in Olympia, Washington, have been created as alternatives to homeless camps in or near the same location. In both cases, it appears that the local government adopted a contract or resolution approving the use of land for tiny houses without requiring it to comply with some standard utility or construction requirements precisely because it would house very low-income households under better living conditions than the occupants had previously. While inspiring as initiatives to address the challenges of housing affordability and homelessness, both of these examples required individualized negotiations and agreements to vary from normally applicable public health and safety standards—flexibility that might not have been approved for a market-rate housing development.

However, there are at least three different ways in which a tiny-house community for the general public could be created—each modeled on an existing form of land-use approval. The choice of an appropriate tool turns heavily on the question of whether you intend the occupants to be able to sell the house and the piece of land it occupies to someone else in the future.

#### **A Tailored Zoning and Subdivision of Land**

If tiny-house owners are going to be able to sell their lots and homes to others, then the community will need to be subdivided into individual lots, and those lots will need to meet the minimum size and dimension requirements of the zone district where they are located. If you want to allow tiny house community developers to create very small lots (say 1,000 to 2,000 square feet), it is likely that your city or county does not have a residential zone district allowing lots of that size. So the local government will have to create a zone district allowing that type of lot. If the roads within the community are going to be narrower or more lightly constructed than those in stick-built



Andrew Heben

➡ Quixote Village in Olympia, Washington, provides housing for 30 previously homeless adults. Photo from *Tent City Urbanism: From Self-Organized Camps to Tiny House Villages* by Andrew Heben.

subdivisions, then the community will have to adopt subdivision standards (or exceptions to the current standards) allowing those types of construction. In many cases, the local government is only willing to allow “lower-than-normal-standard” infrastructure if the property

**A PUD for a tiny-house community should be drafted assuming that conditions will change in the future, and to avoid locking in an overly specific development plan.**

owners agree to own and maintain it over time (i.e., the city or county will not accept it as dedicated infrastructure for public maintenance), so the developer will likely have to create a home owners association to do so. These types of specialized standards have been adopted before, however, for unique forms of housing like manufactured home subdivisions or cottage

home subdivisions, and those types of standards are good places to look for guidance.

#### **A Planned Unit Development**

If the community expects that there will be only one of these communities or it does not want to create a new zone district or subdivision regulations to address tiny houses in general, the tailoring of zoning and subdivision standards described above could be accomplished through a planned unit development (PUD) tailored to a single development and a single developer. While single-project PUDs are relatively easy to adopt, they often reflect a very specific picture of the approved development that is hard to amend over time as conditions change. A PUD for a tiny-house community should be drafted assuming that conditions will change in the future, and to avoid locking in an overly specific development plan. For example, it may not be wise to require a community building of a certain size, or a park or storage area of a specific design in a specific location, because those items may need to be moved or resized in the future.

Similarly, if the home owners association is responsible for roads and utilities, it may be wise to offer some flexibility to relocate or resize those facilities in the future as needs change. The Greater Bemidji Area of Minnesota has thought through these issues and adopted a PUD approach for tiny-home subdivisions (§1101.F).

### A Condominium or Cohousing Development

If the occupants of tiny houses in the community do not need to have the right to sell individual lots to others in the future, then a tiny house community could be structured as a condominium or cohousing development. Under this model, the land remains unsubdivided. Instead, a development plan is approved allowing many tiny houses, and perhaps support facilities like community buildings or shared parking areas, to occupy a single parcel of land. Instead of owning individual lots, residents own shares in the development as a whole. If structured as a condominium, each resident's share includes the exclusive rights to occupy their individual tiny house and a parking space, and also a proportionate share in the land, community buildings, roads, and infrastructure serving the area. As with a nontraditional subdivision described above, the local government may well require that the roads and utilities be owned and maintained by the condominium association. Under this approach, residents who decide to sell their tiny house in the future are actually selling their package of rights in the development (and the maintenance obligations that go along with them)—they are not selling the land. Again, it is usually wise to avoid overregulating or “zoning to a picture” in ways that may require additional governing body approval for minor changes in the future.

### CONCLUSION

At this point, most city and county zoning and subdivision ordinances are unprepared for tiny houses. Answers to questions about what tiny houses are, where they can be installed, and under what conditions can be found if you search hard enough—but they are not clear or obvious. The good news is that there are several examples of how land-use controls can

be developed or modified to accommodate new and creative forms of housing and land development. RV park, manufactured home park, and subdivision, cohousing, and cottage development standards provide a deep pool of content from which tiny-house regulations can be tailored and developed.

As with most land-use questions, however, the appropriate tools cannot be crafted until some policy questions have been answered. To prepare for the arrival of tiny-house owners and community developers in the future, local governments should be prepared to answer these questions:

- Do we want to allow the installation of tiny houses for long-term occupancy, and if so, in what parts of our community?
- Do we want to accommodate only those tiny houses that meet our current building code or the federal manufactured home standards, or do we want to create exceptions for other tiny houses that can be made safe for long-term occupancy in other ways?
- Do all tiny houses need to be installed on foundations and with connections to our electric, water, and sewer systems, or are there some areas (maybe rural areas) where we would allow them under other circumstances?
- Are there areas of the community where they should be permitted as primary dwelling units?
- Are there areas of the community where they should not be permitted as primary dwelling units, but would be acceptable as accessory dwelling units?
- What changes to our building code, zoning ordinance, and subdivision regulations need to be made to achieve those results?

- With a little forethought, you can be prepared for the day a tiny-house owner shows up with some or all of the questions discussed above—and avoid that “deer-in-the-headlights” look that so annoys the town council.

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Cover: “Tiny house, Portland” by Tammy (Weekend with Dee), Wikimedia (CC-by-2.0); design concept by Lisa Barton.

### REFERENCES

- Bemidji (Minnesota), City of. 2015. Greater Bemidji Area Zoning and Subdivision Ordinance. Article XI: Subdivisions and Planned Unit Developments. Section 1101: Subdivisions of Land. Part F: Tiny House Subdivision. Available at [tinyurl.com/pzlj9uf](http://tinyurl.com/pzlj9uf).
- Mccann, Conor. 2015. “The Workhouse Postmortem.” May 27. Available at [theworkhouse.co/postmortem](http://theworkhouse.co/postmortem).
- Spur (Texas), City of. 2014. “A Resolution Establishing the Designation of the City of Spur, as America’s First ‘Tiny’ House Friendly Town,” July 17. Available at [spurfreedom.org/hooray-for-our-city-council](http://spurfreedom.org/hooray-for-our-city-council).
- Tumbleweed Tiny House Company: [tumbleweedhouses.com](http://tumbleweedhouses.com).

**Attachment B**

**HOUSING ELEMENT**

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# HOUSING ELEMENT

## INTRODUCTION

Decent and safe housing is a basic human need increasingly unavailable to many Americans, including many Bainbridge Island resident and workers. The Washington State Growth Management Act (GMA) provides direction for cities to address these needs in the Housing Element of the Comprehensive Plan. Many of the Plan's Guiding Principles and Policies carry this direction forward to be addressed in various Elements, including Housing. This reality applies increasingly to certain segments of Bainbridge Island's population as well as to many of those who work on the Island.

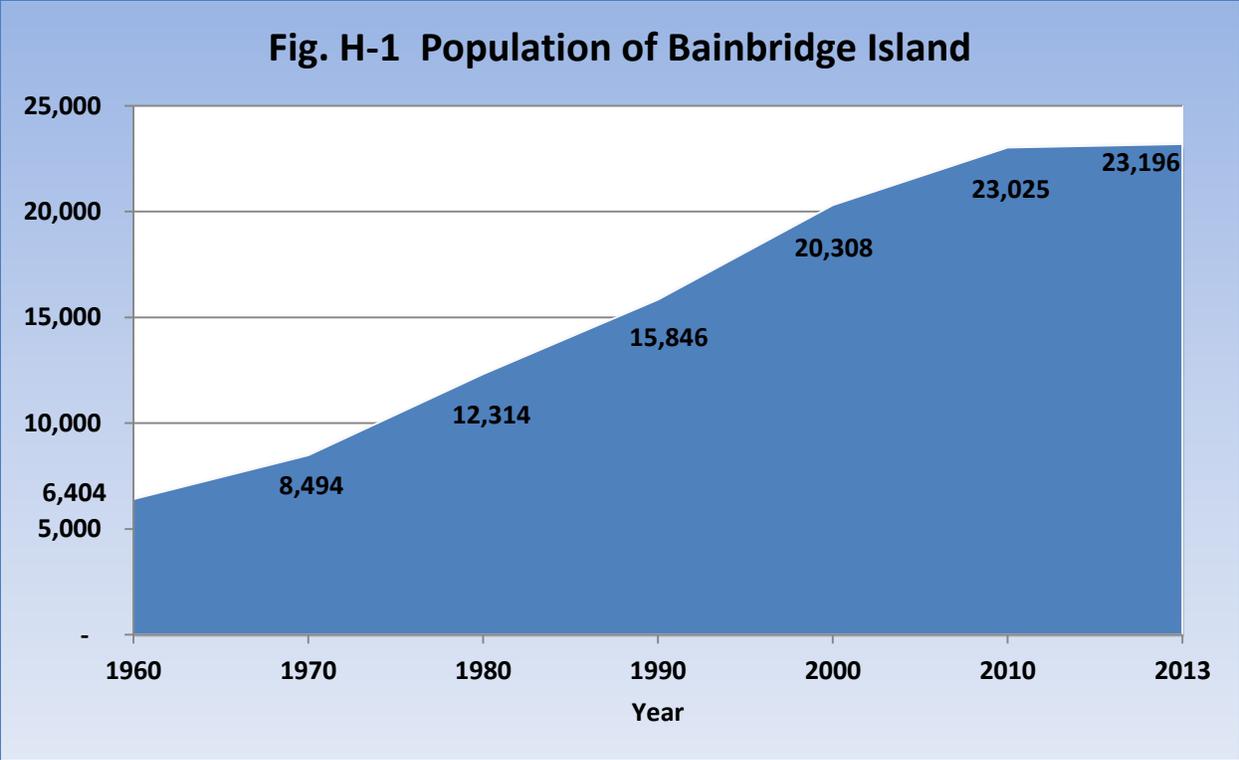
The City's Housing Needs Assessment (HNA) adopted in December of 2015, documents current housing conditions on the Island, and identifies trends and specific needs. Portions of the HNA are excerpted in this Element, while the entire HNA is adopted as an Appendix. The Element follows with goals and policies to address the identified housing needs and concludes with a series of implementation strategies to prioritize action by the City and others.

the disparity between Kitsap County TRENDS Reports, which track the average home sale price in Kitsap County, document that between 1990 and 2003 the average Bainbridge Island home price escalated dramatically from \$232,687 to \$478,000.

### I. PROFILE: BAINBRIDGE ISLAND POPULATION AND DEMOGRAPHICS

In 2015, Bainbridge Island had a population of 23,300. The 20-year growth target assigned to the Island is an additional 5,635 people, so this comprehensive plan is written to accommodate a population of 28,935 by the year 2036.

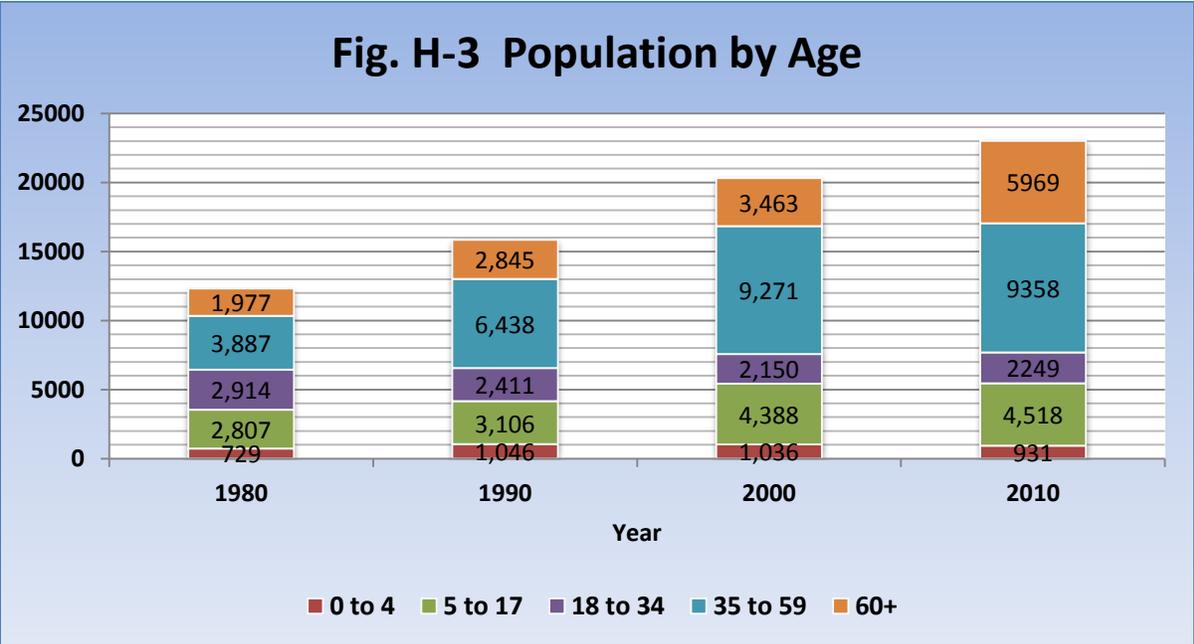
The Island saw significant population increases between 1960 and 2000, which then slowed to a relaxed but still positive rate. The Island's population grew rapidly between 1960 and 1980 by 77.6%. The following two decades showed a consistent rate of growth around 28.5% per decade. Between 2000 and 2010, the 3% annual population growth of the previous decades slowed to an approximate 13.5% increase in population for the whole decade. Population growth between 2010 and 2013 has slowed even further to below 1% percent growth (0.72%). This historical trend is illustrated in Table H-1.



Source: Decennial United State Census (1960 – 2010)

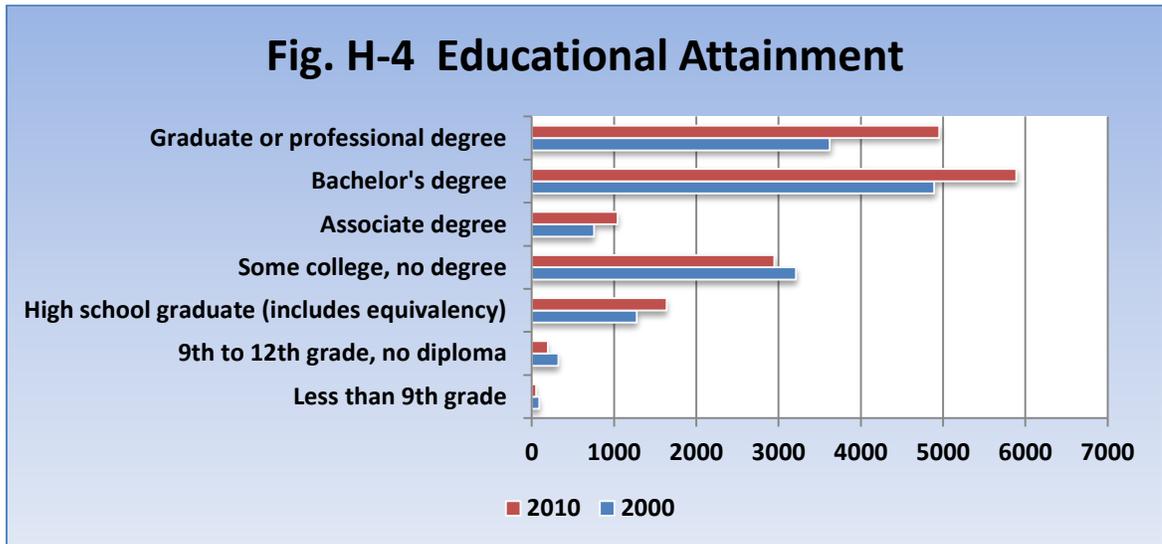
**Age Distribution**

As shown in Fig. H-3, and detailed in the HNA, the age groups five to seventeen, thirty-five to fifty-nine, and the sixty and over age groups, make up 86% of the population. The “young adult” cohort (18 to 34 years old) makes up less than 10% of the Island’s population, which is a decline from 15% in 1990.



## Educational Attainment

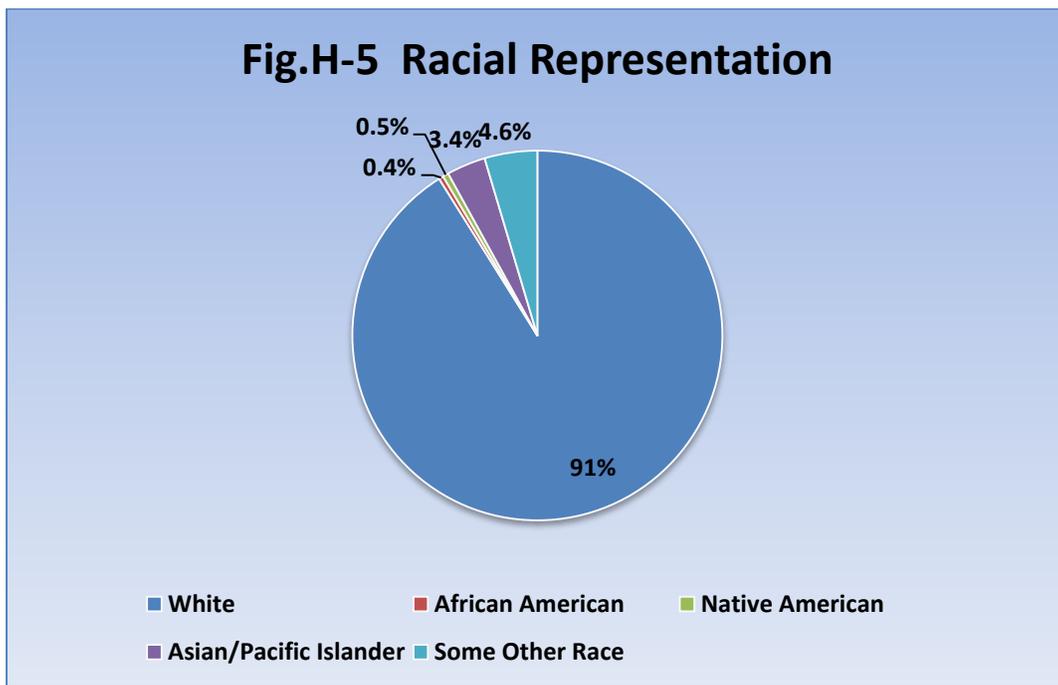
The population of the Island has a relatively high degree of educational attainment, with significant increases between 2000 and 2010 in the numbers of people with advanced degrees.



Source: Decennial United State Census (1980 – 2010)

## Racial Distribution

Bainbridge Island has a predominantly white population.



## **Household Income**

The Bainbridge Island Median Household Income, according to the 2010 Census, was \$92,558.00 compared to the Kitsap County Median Household Income of \$61,776.00. Between 2000 and 2010, the Bainbridge Median Income jumped \$22,447 compared to Kitsap’s increase of \$14,802. However, the percentage increase in Median Income was consistent between Bainbridge Island and the rest of Kitsap County.

## **Poverty Status**

Fig. H-6 shows the percentages of families and individuals whose incomes in the last year were below the poverty line in the years 2000 and 2010. Almost every category within the Poverty Status Table was higher in the 2010 census versus the 2000 census, but this seems expected at the height of the recession in 2010.

**Fig. H-16**

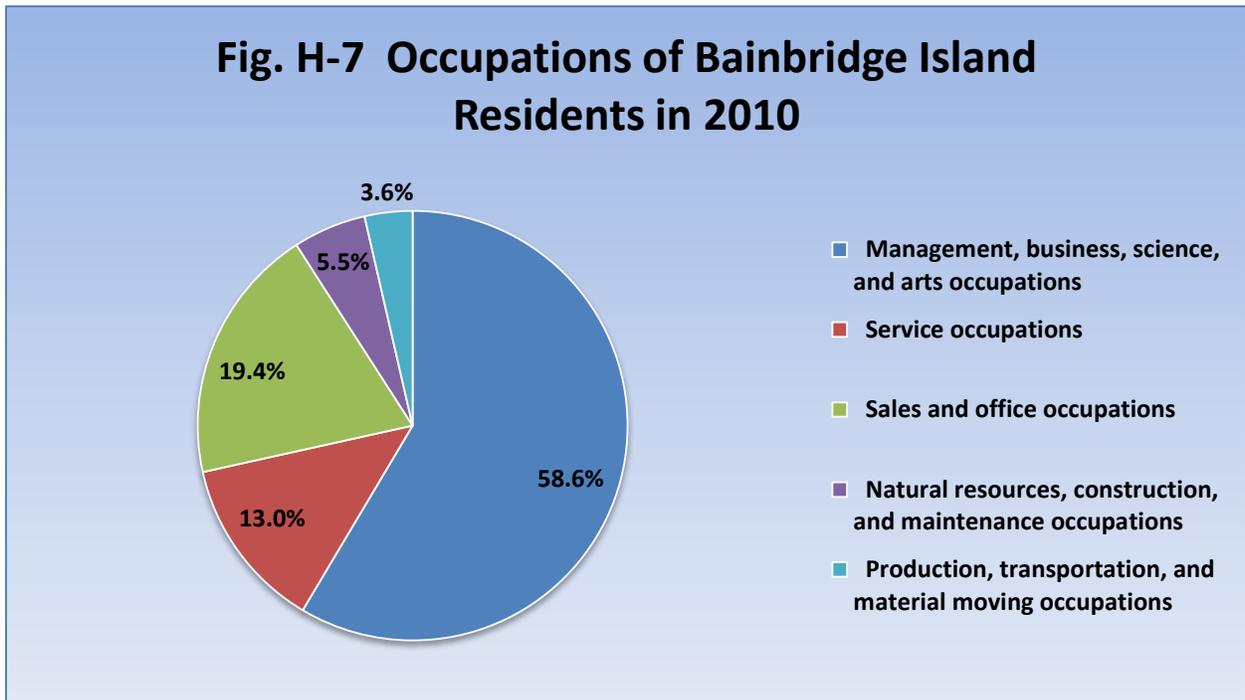
	2000		2010	
	Number	Percent	Number	Percent
<b>All families</b>	171	3%		3.3%
<b>With related children under 18 years</b>	115	3.9%		4.5%
<b>With related children under 5 years only</b>	36	4.1%		10.9%
<b>Married couple families</b>				2.0%
<b>With related children under 18 years</b>				2.6%
<b>With related children under 5 years only</b>				7.5%
<b>Families with female householder, no husband present</b>	72	12.1%		12.9%
<b>With related children under 18 years</b>	55	14%		12.2%
<b>With related children under 5 years only</b>	18	31%		22.9%
<b>All people</b>	896	4.4%		5.4%
<b>Under 18 years</b>				5.9%
<b>Related children under 18 years</b>	206	3.8%		5.4%
<b>Related children under 5 years</b>				14.1%
<b>Related children 5 to 17 years</b>	168	3.9%		3.5%
<b>18 years and over</b>	686	4.7%		5.3%
<b>18 to 64 years</b>				6.2%
<b>65 years and over</b>	81	3.3%		2.1%
<b>People in families</b>				3.4%
<b>Unrelated individuals 15 years and over</b>	362	12.8%		16.5%

Source: Decennial United State Census (2000 – 2010)

The number of employed residents who are sixteen years and over increased from 9,670 in 2000 to 10,284 in 2010. While the majority of occupational categories were consistent, “Natural Resources, Construction, and Maintenance” occupations decreased by a three-fourths and “Production, Transportation, and Material Moving” occupations decreased by nearly half over the decade.

### **Occupations of Bainbridge Island Residents**

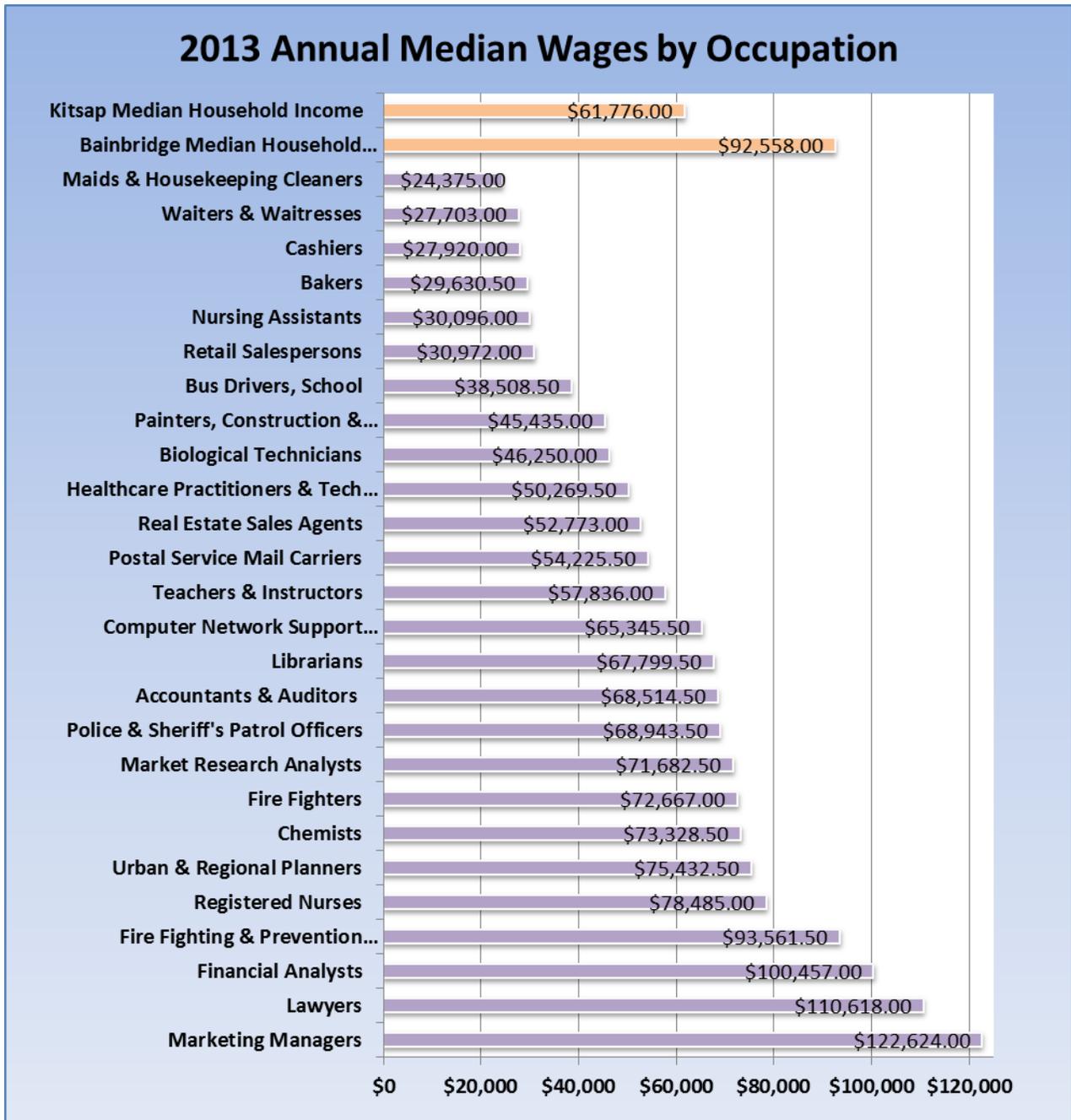
Over half of all Island residents are in management, business, science, and arts occupations. Service, sales and office occupations total almost a third of all Island residents.



Source: Decennial United State Census (2010)

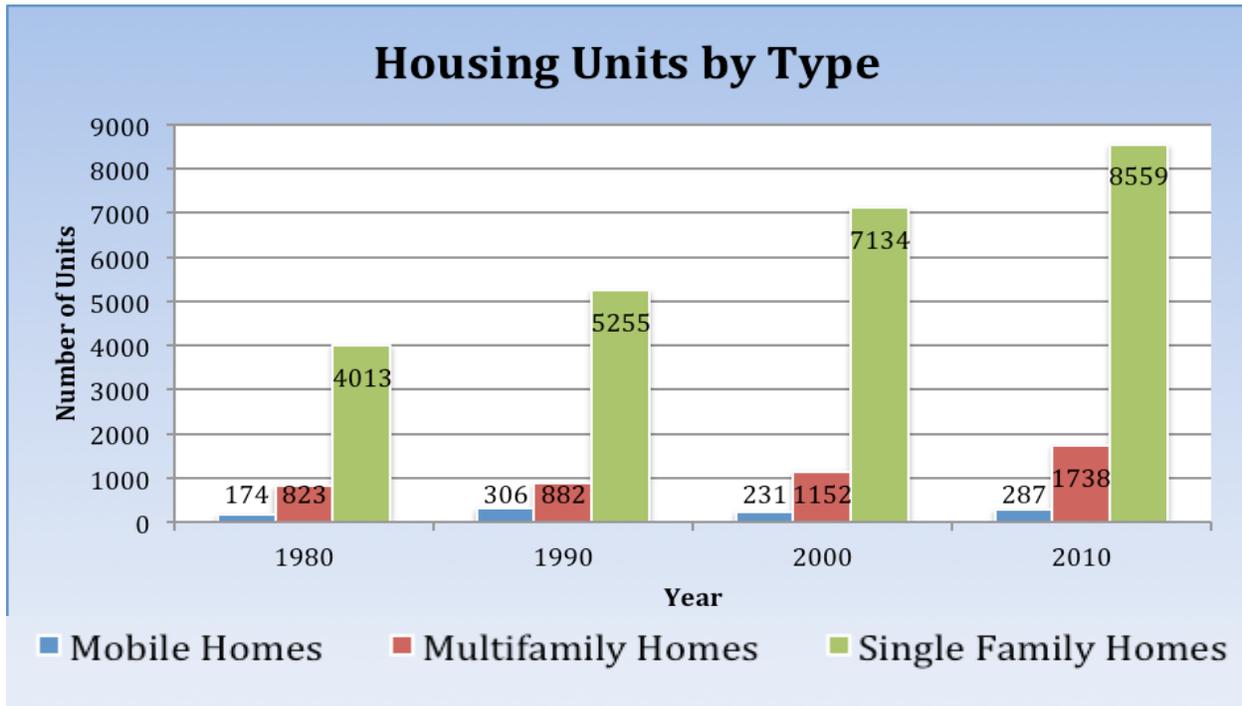
Fig. H-8 compares the Median Household Income of Bainbridge Island and Kitsap County to the Annual Median Wages for a selected range of occupations found on Bainbridge Island. The occupational wages of the Bremerton-Silverdale area and the Seattle-Bellevue-Everett area were averaged per position to better represent the possible wages of individuals on Bainbridge as surveyed by the Washington State Employment Security Department.

Fig. H-8



Source: 2013 Occupational Employment and Wages Estimates – Labor Market and Economic Analysis, June 2013, Washington State Employment Security Department

## II. PROFILE: BAINBRIDGE ISLAND HOUSING DATA AND TRENDS



**Fig. H-9**

Roughly 10,500 households on Bainbridge Island occupy a housing stock that is 80% single-family homes. This form of housing is relatively land intensive, accounting for the low-density land use pattern that characterizes most of the Island. The multifamily units that account for 16% of the housing stock are located in the denser development pattern of *designated centers* such as Winslow and Lynwood Center. Mobile homes constitute less than 3% of the housing units.

Source: Decennial United State Census (1970 – 2010)

### **Single Family Homes**

The average single family home sale prices on Bainbridge Island and in the rest of Kitsap County showed the same signs of being affected by the national housing bubble and subsequent Great Recession that the rest of the United States experienced during the last decade. The average single-family home sale price grew annually to its peak in 2007 of \$820,569.00 in Bainbridge Island and \$384,119.27 in the rest of Kitsap County. After the bubble burst in 2008, housing prices declined until they were able to stabilize between 2011 and 2012 at average price levels seen in 2004. The average single-family home price on Bainbridge Island in 2014 was \$696,519, which is over twice the average for Kitsap County (\$262,381.)

## **Multifamily Homes**

Significant increases in the average market rate and rental prices for multifamily home prices have occurred over the last ten years. The vast majority of apartments, being one and two bedroom, show an average increase in rent of around \$270.00 for a one bedroom and \$473.00 for a two bedroom. Rent-assisted units also show significant increases over the last ten years, but all units showed a smaller percentage increase than market rate. In addition, a qualified individual or family can rent a two bedroom rent-assisted apartment for \$150.00 less per month than a market

**Fig. H-10 Summary of Multifamily Rents 2002 and 2014**

	<b>Unit Type</b>	<b>FY 2002</b>	<b>FY 2014</b>	<b>Change 2002 - 2014</b>	<b>Percent change</b>
<b>Market Rate</b>	Studios	\$ 850	\$ 944	\$ 94	11.1%
	1 BR	\$ 713	\$ 981	\$ 268	37.6%
	2 BR	\$ 911	\$ 1,384	\$ 473	51.9%
	3 BR	\$ 1,042	\$ 1,744	\$ 702	67.4%
<b>Rent Assisted</b>	Studios	\$ 528	*	*	*
	1 BR	\$ 563	\$ 685	\$ 122	21.7%
	2 BR	\$ 575	\$ 834	\$ 259	45.1%
	3 BR	\$ 916	\$ 1,244	\$ 328	35.8%

Source: 2003 City of Bainbridge Island Housing Needs Assessment and Phone Survey conducted 10/27/2014 – 10/28/2014

Between 2005 and 2015, there was a 12% increase in rental apartment units on Bainbridge Island. However, rental apartments (market rate and rent assisted) make up less than 7% of the total housing units. Additionally, rent assisted apartments make up 3% of the total housing units in the City. The vast majority of new construction of multifamily housing units was condominiums in the last ten years.

## **Rent Assisted Housing**

Bainbridge Island has eleven rent assisted projects that received funds in whole or in part from Federal, State, and/or local agencies. In exchange for favorable financing terms, the property owner commits to providing the housing to a targeted population for a specific term. Commitments can run from 20 to 50 years depending upon the funding source. Federal funding sources include the U.S Department of Housing and Urban Development and the U.S. Department of Agriculture (USDA).

The City's local financing source is the Housing Trust Fund. The Trust Fund was established by ordinance in 1999. Funds were distributed to local non-profits to fund *affordable housing* projects and programs on the Island. Funding was reduced in

response to the financial challenges the City faced during the Great Recession, but the Trust was maintained to fund affordable housing programs on the Island. Recently the Council decided to appropriate \$200,000.00 to the Housing Trust Fund as part of the 2015-16 biennial budget for future housing projects.

Figure H-11 tallies the number of individuals and families desiring *affordable housing* on Bainbridge Island. HRB, Housing Kitsap, and other owners of rent assisted multifamily units maintain a waiting list for individuals and families who contact them for affordable rental housing. The current totals of combined waiting lists contain 149 households (individuals and families).

**Fig. H-11 – Demand from Waitlists for Existing Rent Assisted Multifamily Units**

<b>HRB Projects</b>	<b>Individuals</b>	<b>Households</b>
<b>Total</b>	24	14
<b>Currently Live on BI</b>	10	4
<b>Currently Work on BI</b>	5	5
<b>Disabled</b>	3	3
<b>Female Head of Household</b>	13	13
<b>Other Housing Assisted Projects</b>		
<b>Finch Place Apt</b>		30
<b>Rhododendron</b>		31
<b>550 Madison</b>		6
<b>Virginia Villa</b>		Unknown
<b>Winslow Arms</b>		36
<b>Island Terrace</b>		8
<b>Total of All Projects</b>	24	125

Source: HRB provided data

Currently, Bainbridge Island has a total number of multifamily rental inventory of 642 units, of which 283 are rent-assisted and 359 are market-rate. One and two-bedroom units make up 92% of the market. Studios and three-bedroom apartment units continue to be in very short supply.

Fig. H-12 – Special Housing: Nursing/Assisted Living/Convalescent Homes

Facility Name	Type	2013 Population	2014 Population	Vacancy Rate
Island Health and Rehabilitation	Nursing Home	49	57	N/A
Messenger House Care Center	Nursing Home	75	77	N/A
Madison Ave Retirement Center	Assisted Living	50	50	5%
Wyatt House	Assisted Living	43	38	9%
Madrona House Assisted Living	Assisted Living, number of units have specific focus for residents with dementia and Alzheimer's	0	52	36%
<b>Subtotal</b>		<b>217</b>	<b>274</b>	

Source: Phone Survey Conducted 10/27/2014 – 10/28/2014 and COBI's most recent submission of the annual Housing Unit and Population Estimate Report for the Office of Financial Management

### III. HOUSING NEEDS

The Housing Element includes an inventory and analysis of existing and projected housing needs. The element should identify the number of housing units necessary to accommodate projected growth, including *housing types*, government-assisted housing, housing for low-income families, manufactured housing, multifamily housing, and group homes and foster care facilities. The 2015 Housing Needs Assessment, adopted by this reference, presents documents these needs in detail. Several of the highlights from that document are excerpted here to identify what actions the City should take to address those needs.

#### Methods to Assess Housing Needs

##### **Cost Burden Analysis**

The US Department of Housing and Urban Development (HUD) defines any household spending more than 30% of household income on housing as “cost burdened.” Extremely cost burdened households are defined as households that pay more than 50 percent of income on housing. Households that pay more than 30 percent of their income for housing may face additional financial challenges for purchasing food,

education, transportation, and medical care. Extremely cost-burdened low-income households are at risk of becoming homeless. The percentage of households that are cost burdened, in addition to the percentage that is extremely cost burdened, is an indicator of an existing unmet need for affordable housing.

A cost burden analysis is applied both to renter and owner households. The Washington Administrative Code (WAC) requires jurisdictions to make adequate housing provisions for all economic segments of the community; a cost burden analysis will help determine the existing and projected housing need. Fig. H-13 displays household income, monthly housing costs, and monthly housing costs as a percent of household income for Bainbridge Island in 2012. Each set is divided into total occupied housing units, owner-occupied housing units, and renter-occupied housing units.

The last set in the table shows the percent of residents whose monthly housing costs make up more than 30% of their income, which is Bainbridge Island’s cost burden analysis. The table also shows that median household income for owner-occupied housing units (\$110,670) was more than double the median household income of renter-occupied units (\$46,905). The number of owner-occupied housing units (7,329) is over three-and-a-half times the number of renter-occupied units (1,996).

**Fig. H-13 – Cost Burden Analysis: Household Income in 2012**

	<b>Total Occupied Housing Units</b>	<b>Owner-Occupied Housing Units</b>	<b>Renter-Occupied Housing Units</b>
<b>Occupied Housing Units</b>	9,325	7,329	1,996
<b>Household Income in the Past Twelve Months (in 2012 Inflation-Adjusted Dollars)</b>			
<b>Less than \$5,000</b>	1.6%	1.5%	1.7%
<b>\$5,000 to \$9,999</b>	1.8%	0.7%	5.9%
<b>\$10,000 to \$14,999</b>	1.2%	1.3%	0.7%
<b>\$15,000 to \$19,999</b>	3.2%	1.7%	8.7%
<b>\$20,000 to \$24,999</b>	3.3%	3.6%	2.3%
<b>\$25,000 to \$34,999</b>	6.0%	3.5%	15.1%
<b>\$35,000 to \$49,999</b>	11.1%	9.6%	16.4%
<b>\$50,000 to \$74,999</b>	13.1%	11.6%	18.2%
<b>\$75,000 to \$99,999</b>	12.2%	11.4%	15.4%
<b>\$100,000 to \$149,999</b>	19.1%	21.5%	10.4%
<b>\$150,000 or more</b>	27.4%	33.5%	5.2%
<b>Median Household Income</b>	\$92,558	\$110,670	\$46,905

Source: American Community Survey (2008 – 2012)

Fig. H-14

	Occupied housing units		Owner-Occupied Housing Units		Renter-Occupied Housing Units	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
<b>Less than \$100</b>	0.2%	+/-0.3	0.2%	+/-0.4	0.0%	+/-1.6
<b>\$100 to \$199</b>	0.7%	+/-0.6	0.8%	+/-0.7	0.7%	+/-1.1
<b>\$200 to \$299</b>	1.9%	+/-1.1	0.6%	+/-0.5	6.6%	+/-4.8
<b>\$300 to \$399</b>	0.8%	+/-0.8	1.1%	+/-1.1	0.0%	+/-1.6
<b>\$400 to \$499</b>	1.7%	+/-0.9	1.6%	+/-0.8	2.4%	+/-2.2
<b>\$500 to \$599</b>	3.2%	+/-1.3	3.2%	+/-1.2	3.4%	+/-3.7
<b>\$600 to \$699</b>	2.9%	+/-1.0	2.7%	+/-1.1	3.7%	+/-2.7
<b>\$700 to \$799</b>	5.2%	+/-1.3	4.8%	+/-1.2	6.8%	+/-3.9
<b>\$800 to \$899</b>	5.2%	+/-2.0	2.8%	+/-1.1	14.0%	+/-7.0
<b>\$900 to \$999</b>	3.7%	+/-1.3	3.4%	+/-1.5	4.8%	+/-2.9
<b>\$1,000 to \$1,499</b>	17.1%	+/-2.4	13.2%	+/-2.3	31.5%	+/-6.8
<b>\$1,500 to \$1,999</b>	13.3%	+/-2.2	13.7%	+/-2.5	11.7%	+/-4.6
<b>\$2,000 or more</b>	43.4%	+/-2.9	52.0%	+/-3.0	11.9%	+/-5.7
<b>No cash rent</b>	0.6%	+/-0.5	(X)	(X)	2.7%	+/-2.1
<b>Median (dollars)</b>	1,800	+/-87	2,079	+/-120	1,089	+/-105

Source: American Community Survey (2008 – 2012)

Fig. H-14 shows the calculation of five different income groups' cost burden. Based on 2012 data, over 35% of all residents at all income levels experience housing cost burden on Bainbridge Island. Almost 34% of individuals and families at all income levels who live in owner-occupied housing units are cost burdened. The majority (around 14%) of these residents have an income of \$75,000 or more a year.

Almost 40% of individuals and families at all income levels who live in renter-occupied housing units are cost burdened. The majority (around 28%) of these residents have an annual income between zero and \$34,999. This means that as of 2012, 569 renters on the Island that have an income of \$34,999 or less are housing cost burdened. This is concerning as lower income cost burdened households are more likely to have to choose between housing costs and other necessities.

### Workforce Housing

Workforce housing refers to housing that is affordable to individuals employed in the community, especially housing at affordability levels that are not provided for adequately by the private market. If there is no housing that is affordable to employees at local public and private employers, workers may have longer commutes, undermining goals for transportation and the environment.

Fig. H-15 displays selected professions common to citizens of Bainbridge Island and whether they work on the Island or in Seattle. Each position can be compared to the top two measures at the top of the table ('Household Income Needed to Purchase Average Priced Home in 2013: \$602,500' and 'Median Income') to see if the income the profession provides meets median income.

**Fig. H-15 – Workforce Housing Affordability**

	Affordable Home Price (30 yr fixed mortgage)	Interest Rate	Max. Monthly Mortgage Payment (Principal & Interest)	Estimate of Monthly Real Estate Taxes/ Insurance	Other Fees (e.g. Ground Lease, HOA)	Available for Annual Mortgage Payment below cost burdened benchmark (30% Monthly Income)	Annual Income
<b>Average Bainbridge Island Single-Family Home Sales Price in 2013: \$602,500</b>							
<b>Median Income</b>	<b>\$ 320,357</b>	<b>5.50%</b>	<b>\$1,818.95</b>	<b>\$375.00</b>	<b>\$120.00</b>	<b>\$2,314</b>	<b>\$92,558</b>
<b>Marketing Managers</b>	<b>\$ 430,723</b>	<b>5.50%</b>	<b>\$2,445.60</b>	<b>\$500.00</b>	<b>\$120.00</b>	<b>\$3,066</b>	<b>\$122,624</b>
<b>Lawyers</b>	<b>\$ 386,667</b>	<b>5.50%</b>	<b>\$2,195.45</b>	<b>\$450.00</b>	<b>\$120.00</b>	<b>\$2,765</b>	<b>\$110,618</b>
<b>Financial Analysts</b>	<b>\$ 350,733</b>	<b>5.50%</b>	<b>\$1,991.43</b>	<b>\$400.00</b>	<b>\$120.00</b>	<b>\$2,511</b>	<b>\$100,457</b>
<b>Registered Nurses</b>	<b>\$ 262,796</b>	<b>5.50%</b>	<b>\$1,492.13</b>	<b>\$350.00</b>	<b>\$120.00</b>	<b>\$1,962</b>	<b>\$78,485</b>
<b>Fire Fighters</b>	<b>\$ 245,985</b>	<b>5.50%</b>	<b>\$1,396.68</b>	<b>\$300.00</b>	<b>\$120.00</b>	<b>\$1,817</b>	<b>\$72,667</b>
<b>Police Officers</b>	<b>\$ 229,592</b>	<b>5.50%</b>	<b>\$1,303.60</b>	<b>\$300.00</b>	<b>\$120.00</b>	<b>\$1,724</b>	<b>\$68,944</b>
<b>Librarians</b>	<b>\$ 224,555</b>	<b>5.50%</b>	<b>\$1,275.00</b>	<b>\$300.00</b>	<b>\$120.00</b>	<b>\$1,695</b>	<b>\$67,800</b>
<b>Teachers &amp; Instructors</b>	<b>\$ 189,489</b>	<b>5.50%</b>	<b>\$1,075.90</b>	<b>\$250.00</b>	<b>\$120.00</b>	<b>\$1,446</b>	<b>\$57,836</b>
<b>Postal Service Mail Carriers</b>	<b>\$ 173,594</b>	<b>5.50%</b>	<b>\$985.65</b>	<b>\$250.00</b>	<b>\$120.00</b>	<b>\$1,356</b>	<b>\$54,226</b>
<b>Real Estate Sales Agents</b>	<b>\$ 167,197</b>	<b>5.50%</b>	<b>\$949.33</b>	<b>\$250.00</b>	<b>\$120.00</b>	<b>\$1,319</b>	<b>\$52,773</b>
<b>Healthcare Practitioner</b>	<b>\$ 156,176</b>	<b>5.50%</b>	<b>\$886.75</b>	<b>\$250.00</b>	<b>\$120.00</b>	<b>\$1,257</b>	<b>\$50,270</b>
<b>Bus Drivers, School</b>	<b>\$ 122,004</b>	<b>5.50%</b>	<b>\$692.73</b>	<b>\$150.00</b>	<b>\$120.00</b>	<b>\$963</b>	<b>\$38,509</b>
<b>Retail Salesperson</b>	<b>\$ 88,818</b>	<b>5.50%</b>	<b>\$504.30</b>	<b>\$150.00</b>	<b>\$120.00</b>	<b>\$774</b>	<b>\$30,972</b>
<b>Nursing Assistants</b>	<b>\$ 84,961</b>	<b>5.50%</b>	<b>\$482.40</b>	<b>\$150.00</b>	<b>\$120.00</b>	<b>\$752</b>	<b>\$30,096</b>

	<b>Affordable Home Price (30 yr fixed mortgage)</b>	<b>Interest Rate</b>	<b>Max. Monthly Mortgage Payment (Principal &amp; Interest)</b>	<b>Estimate of Monthly Real Estate Taxes/ Insurance</b>	<b>Other Fees (e.g. Ground Lease, HOA)</b>	<b>Available for Annual Mortgage Payment below cost burdened benchmark (30% Monthly Income)</b>	<b>Annual Income</b>
<b>Cashiers</b>	<b>\$ 75,380</b>	<b>5.50%</b>	<b>\$428.00</b>	<b>\$150.00</b>	<b>\$120.00</b>	<b>\$698</b>	<b>\$27,920</b>
<b>Waiters &amp; Waitresses</b>	<b>\$ 74,425</b>	<b>5.50%</b>	<b>\$422.58</b>	<b>\$150.00</b>	<b>\$120.00</b>	<b>\$693</b>	<b>\$27,703</b>
<b>Maids &amp; House Cleaners</b>	<b>\$ 59,771</b>	<b>5.50%</b>	<b>\$339.38</b>	<b>\$150.00</b>	<b>\$120.00</b>	<b>\$609</b>	<b>\$24,375</b>

Source: 2013 Occupational Employment and Wage Estimates Washington State Employment Security Department Labor Market and Economic Analysis, June 2013

Based on the above numbers, a gap in housing affordable for the workforce on Bainbridge Island has been established. Workers in service professions may be challenged to find affordable housing near their employment, causing them to have to travel longer distances to work. This increase in transportation costs increases their cost burden as well as adding demands on SR 305 and creating greenhouse gas emissions. The City must implement new programs and regulations in order to create opportunities for more affordable ownership or rental housing. Development incentives used to date to increase housing affordability have not proven successful for providing housing that meets the needs of the workforce.

### **Jobs/Housing Balance**

Jobs/housing balance is a measure that compares the amount of employment vs. the amount of housing in a specific geographic area. Typically, a jobs/housing balance is calculated by dividing jobs within in geography by the number of housing units in that geography.

Providing a balance between jobs and housing ensures that workers have access to housing near their work. Bainbridge Island's jobs/housing balance is .59 jobs for every housing unit in the City, making it a "bedroom community." PSRC suggests that housing-rich neighborhoods can add employment to provide more access for current residents to economic opportunities. Planning to move toward a more balanced distribution of housing and jobs within a jurisdiction can help to achieve a number of transportation and environmental goals as the need to commute long distances by private auto declines.

### **Special Needs Housing**

Special needs housing refers broadly to housing accommodations for individuals with physical and mental disabilities, seniors, veterans, individuals with mental illness, individuals with chronic and acute medical conditions, individuals with chemical dependency, survivors of domestic violence, and adult, youth, and families who are homeless.

Planning for special needs populations is integral to the success of an economically and socially vibrant Puget Sound Region. Both GMA and the WAC specifically require jurisdictions to "address how the county or city will provide for group homes, foster care facilities, and facilities for other populations with special needs" (WAC 365-196-410)

## **IV. GMA GOAL AND REQUIREMENTS FOR HOUSING**

The Growth Management Act (GMA) recognizes the importance of planning for

adequate housing by requiring it as an element in Comprehensive Plans. Adequate housing is addressed specifically in one of the 13 major goals:

“Housing. Encourage the availability of *affordable housing* to all economic segments of the population of this state, promote a variety of densities and *housing types*, and encourage preservation of existing housing stock.”  
RCW 36.70A.020(4)

The requirements for a housing element mandated by the GMA include:

“A housing element recognizing the vitality and character of established *neighborhoods* that: a) includes an inventory and analysis of existing and projected housing needs; b) includes a statement of goals, policies, and objectives for the preservation, improvement, and development of housing; c) identifies sufficient land for housing, and group homes and foster care facilities; and d) makes adequate provisions for existing and projected needs of all economic segments of the community.” RCW 36.70A.070(2)

~~The last item (d) in those requirements is echoed in the Vision for Bainbridge Island:~~

~~“... Foremost, Bainbridge Island should preserve the diversity of one of its most precious resources — its people. The Island should remain a place where the business people, artists, farmers, newcomers and long-time residents can all find a place to live.”~~

~~and, General Goals (excerpt):~~

- ~~• Foster the diversity of the residents of the Island, its most precious resource.~~
- ~~• Provide a variety of housing choices for all residents.~~
- ~~• Provide affordable housing.~~

### **III. Comprehensive Plan Framework of Guiding Principles, Goals and Policies**

Several of the Guiding Principles and Policies in the Comprehensive Plan speak directly to the priority of identifying and meeting the need for housing, including affordable housing on the Island.

**Guiding Principle #1** – Preserve the special character of the Island, which includes the small town atmosphere of downtown Winslow, forested areas, meadows, farms, marine views, scenic and winding roads that support all forms of transportation.

#### **Guiding Policy 1.2**

Accommodate new growth in central places that meet the Island’s identified needs for housing, services and jobs while respecting conservation and environmental protection priorities.

**Guiding Policy 1.3**

Identify appropriate land use patterns and building form alternatives to achieve the Island’s priorities for both conservation and development

**Guiding Principle #3** – Foster diversity and meet the human needs of the residents of the Island, its most precious resource.

**Guiding Policy 3.1**

Ensure a variety of housing choices to meet the needs of present and future residents in all economic segments and promote plans, projects, and proposals to create a significant amount of *affordable housing*.

**Guiding Policy #6** – Meet the needs of the present without compromising the ability of future generations to meet their own needs.

**Guiding Policy 6.2**

Advance social equity on the Island by addressing basic human needs, including *affordable housing*, personal health and safety, mobility, and access to human services.

Several goals and policies in the Land Use Element put housing objectives in the context of the Island-wide Land Use Concept.

**LAND USE ELEMENT GOAL LU-4**

**Focus urban development in designated centers.**

**Policy LU 4.1**

Encourage residential uses in a variety of forms and densities as part of the use mix in Designated Centers.

**Policy LU 4.2**

Sustainable development and redevelopment will be focused in the centers through a combination of intergovernmental and public-private partnerships, *affordable housing* incentive programs, “green” capital projects, and low impact development standards.

**Policy LU 5.3**

The Neighborhood Service Centers of Island Center, Rolling Bay, and Lynwood Center offer small-scale, commercial and service activity outside Winslow. These Neighborhood Service Centers should be allowed to develop at slightly higher densities to reinforce their roles as small-scale, community centers.

**Policy LU 5.8**

Applications for development approval on Bainbridge Island should be processed within the timelines established in the City's *development regulations* in order to ensure affordability, fairness and predictability in the land development process.

**Policy LU 5.9**

To reflect the priorities in the Housing Element to provide for a variety of housing options in areas designated for residential development, including residential open space, *accessory dwelling units* shall be considered allowed uses in all residential zoning districts except R-6.

Also, the Economic Element emphasizes the importance of affordable housing choices to the Island's economic health.

**ECONOMIC ELEMENT GOAL EC-5**

**Provide a variety of affordable housing choices so that more people who work on Bainbridge Island can live here.**

The Housing Element of the Comprehensive Plan provides several options for the development of *affordable housing* on the Island.

**ECONOMIC ELEMENT GOAL EC-9**

**Grow a healthy service sector to increase employment opportunities, enhance local revenues, and meet emerging needs of the Island's changing demographics.**

**Policy EC 9.1**

Increase availability of housing to enable service sector employees to live on the Island.

~~The main objective in preparing a housing element is to identify and prioritize the community's housing problems and trends, and to develop short and long-term solutions. On Bainbridge Island, residential development is the predominant use of land. In 1992, 38% of all the land on the Island was listed as developed for residential use. In 2003, 41% of the land on the Island was listed as developed for residential use. In addition, housing costs are typically the largest expenditure for most households, while a community's housing stock is its largest long-term capital asset. The costs of land and housing have risen dramatically over the last two decades. The composition of the community in terms of age and income has changed as well. The lack of *affordable housing* has resulted in the need for many people who grew up on the Island to look elsewhere. Furthermore, many people who work on the Island cannot afford to live here, and the number of homeless individuals and families is growing.~~

The Housing Element provides the citizens of Bainbridge Island with an opportunity to establish goals, policies, and implementation strategies that present solutions to existing problems and provide direction to future housing development without negatively impacting the existing character of the community.

A major step in the formulation of strategies is to assess our current situation. This is done through a Housing Needs Assessment that includes documentation and analysis of community demographics and trends, existing housing stock and condition, and an estimate of future housing needs, including special needs populations such as homeless, disabled and domestic violence victims. This is followed with a summary of the findings of the data, which give direction to the formation of goals and policies. From these, *implementation* strategies are then developed to direct the provision of adequate housing for all citizens of Bainbridge Island.

## V. HOUSING NEEDS ASSESSMENT

In 2015 2002, the City of Bainbridge Island issued an updated authorized the development of a comprehensive and up-to-date Housing Needs Assessment (**HNA**) for Bainbridge Island, including an description of the amount, location and condition of the Island's housing stock and demographic and economic information about its population. It also includes an in-depth analysis of affordable housing needs across all households. This document, *The City of Bainbridge Island Housing Needs Assessment, September 2003*, is included as Appendix A. The 2003 Needs Assessment updated and expanded upon the Housing Needs Assessment completed in 1995, which is included as Appendix B.

## HOUSING ELEMENT VISION

A broad range of housing types is available to accommodate the great diversity of households and income levels on the Island. The Island has balanced and harmonized the equally important goals of environmental stewardship and providing for the basic human needs of housing, health, employment, and access to commercial and social services.

The majority of Island housing opportunities, particularly rental homes, are within the pedestrian friendly, transit-served, mixed-use *designated centers*. Housing opportunities within centers include small homes on small lots, cottage housing in groupings of a dozen homes, townhouses and mixed-use, mid-rise buildings. The residential pattern outside of centers is at a much lower building form, lower density, with a range of lot sizes and clusters of villages within a broad conservation landscape.

## HOUSING GOALS AND POLICIES

**Discussion:** In accordance with the definition provided in the Growth Management Act (WAC 365.195-070(6)), the term “*affordable housing*” as used in the Housing Element refers to “the adequacy of the housing stocks to fulfill the housing needs of all economic segments of the population. The underlying assumption is that the marketplace will guarantee adequate housing for those in the upper economic brackets, but that some combination of appropriately zoned land, regulatory incentives, financial subsidies, and innovative planning techniques will be necessary to make adequate provisions for the needs of middle and lower income persons.”

## GOAL HO-1

**Promote and maintain a variety of housing choices and housing types to meet the needs of present and future Bainbridge Island residents at all economic segments, and in all geographic areas in a way that is compatible with the character of the Island, and encourages more socio- economic diversity. The City shall ~~p~~Partner with community non-profit organizations and local and regional private and public entities in carrying out the following policies.**

### **H-1.5 Policy HO 1.1**

~~The City shall e~~Encourage innovate innovative residential development types and zoning regulations that increase the variety of *housing types* and choices suitable to a range of household sizes and incomes in a way that is compatible with the character of existing neighborhoods. Examples of innovate approaches are *cottage housing* development, cluster housing development, stacked or side attached housing, tiny houses and *accessory dwelling units*. See Figure H-1 illustrating different *housing types*.

### **H-1.1 Policy HO 1.2**

~~The City r~~Recognizes it's the City's role in the regional housing market and shall cooperate with the Kitsap Regional Coordinating Council to develop an equitable distribution strategy for affordable housing.

### **H-1.2 Policy HO 1.3**

~~The City shall t~~Take a proactive role in maintaining and encouraging economic diversity on the Island by providing affordable housing opportunities on Bainbridge Island. Accordingly, the City should designate the appropriate staff effort or organizational entity to assist and advise the community, landowners, and private and public entities about options for affordable housing, financing strategies, and funding sources; develop

and assist with the City's application and approval process for special housing projects; and initiate and support affordable housing strategies opportunities.

### **H-1.3 Policy HO 1.4**

The City shall ~~p~~Partner with non-profit organizations, the development community, local lending institutions, elected officials, and the community at large to assist in meeting affordable housing goals and implementing strategies policies.

### **H-1.4 Policy HO 1.4**

~~The City s~~Supports the efforts of community non-profit housing organizations and local and regional public and private entities in developing and managing affordable housing on Bainbridge Island.

### **H-1.6 Policy HO 1.6**

~~The City should d~~Develop provisions standards to encourage development and ~~preservation~~ of small to mid-size single-family housing units. These provisions may include a framework to permit small-unit housing development ~~known~~ such as *tiny houses and* cottage housing.

### **Policy HO 1.7**

Expand opportunities for infill in the residential zones included ring neighborhoods of Winslow Master Plan study area (R-4.3, R-3.5, R-2.9) and the Neighborhood Service Centers. Create the flexibility for small lots (e.g., in the 3,000 square foot range) as well as smaller footprint homes (e.g., under 1,200 square feet) and adopt standards shall be developed for *tiny houses, accessory dwelling units* and cottage housing developments. that include, but may not be limited to, maximum allowable size and density and covenants to limit size in perpetuity.

## **GOAL HO-2**

**Maintain the stock of existing affordable and rent-assisted housing. In partnership with community non-profit organizations and local and regional public and private entities the City shall pursue the following policies:**

### **H-2.1 Policy HO 2.1**

~~The City shall d~~Develop a continuing strategy to maintain the Rural Development Agency and HUD subsidies on existing rent-assisted housing. The primary strategy shall be to support the Kitsap County Consolidated Housing Authority and non-profit agencies to purchase the units through the provisions of the 1990 Housing Act.

### **H-2.2 Policy HO 2.2**

In the event of the potential loss of privately-owned subsidized housing, ~~the City will~~ work with the appropriate public agencies and local non-profits to pursue the preservation of the subsidized units, or relocation assistance for the residents.

### **H-2.3 Policy HO 2.3**

Water-based housing (live-aboards) is a viable component of the present and future housing stock of Bainbridge Island, and shall be subject to applicable environmental protection, seaworthiness, sanitation and safety standards, and authorized moorage.

### **H-2.4 Policy HO 2.4**

~~The City shall initiate~~ and support programs that assist low-income homeowners and seniors to repair, rehabilitate, maintain and improve accessibility to and within their homes.

## **GOAL HQ-3**

**Increase the supply of affordable *multi-family housing* each year through the year ~~2012~~ 2036 with goals based on data provided by the Housing Needs Assessment and the City's housing reports.**

### **H-3.1 Policy HO 3.1**

~~The City shall e~~Encourage new *multi-family housing* in a variety of sizes and forms in *designated centers*. areas designated for such use in the Land Use Element. All developments are subject to Health District requirements for water and sewage disposal.

### **Policy HO 3.2**

Revise *building envelope* and other development standards for the High School Road portions of the Winslow Area Master Plan to begin its transformation from an auto-oriented, low-rise, homogenous commercial land use district into a pedestrian-friendly, transit-served, mid-rise, mixed-use neighborhood with affordable housing.

### **Policy HO 3.3**

Partner with non-profit or for-profit housing sector to create new *multi-family housing* in *designated centers*, including a percentage of *affordable housing*, through the joint or exclusive use of surplus publicly owned property or air space.

### **Policy HO 3.4**

Partner with the for-profit sector to create *affordable housing* through the targeted use of the multifamily property tax exemptions in *designated centers*.

### **Policy HO 3.5**

Remove barriers to the creation of new *multi-family housing*, particularly *affordable housing* through a variety of actions, through the adoption of regulations that relax or exempt parking requirements and the payment of certain impact fees.

### **H-3.2 Policy HO 3.4**

~~Allow Accessory dwelling units shall be permitted uses in all residential zones, except at Point Monroe, the Sandspit (R-6). All other~~ Review and revise as appropriate to create reasonable flexibility regarding applicable development standards including lot coverage, setbacks, parking requirements, and Health District requirements for water and sewage must be met.

### **H 3.3 Policy HO 3.7**

~~The City shall e~~Encourage agencies whose mission is to develop *affordable housing* to create new subsidized *multi-family* rental housing by aggressively pursuing Kitsap County Community Development Block Grant Funds, state funds, donations from private individuals and organizations, public revenue sources and other available funding.

## **GOAL HO-4**

**Promote and facilitate the provision of the diversity of *affordable housing* stock in all geographic areas of the community.**

### **H 4.1 Policy HO 4.1**

~~In order to encourage the provision of housing that will remain affordable over time, the City shall~~ pursue effective strategies to reduce the land cost component of for-purchase housing, which may include alternative land use zoning, density bonuses and other incentives.

### **H 4.2 Policy HO 4.2**

~~The City shall e~~Encourage housing created by utilizing a mechanism such as a community land trust.

### **H 4.3 Policy HO 4.3**

~~Allow M~~manufactured homes and *manufactured housing* home-developments ~~shall be permitted~~ in all residential districts. A manufactured home development will be subject to all applicable development regulations of the underlying zone in which it is located, including affordable- housing density bonuses.

### **Policy HO 4.4**

Apply the HDDP process in all *designated centers* to promote an increase in the supply, diversity, and access to housing, including *affordable housing*.

### **Policy HO 4.5**

Apply the HDDP process, or alternative mechanisms such as a planned unit development permit process, outside of *designated centers* to promote an increase in the supply, diversity, and access to housing, including *affordable housing*.

### **Policy HO 4.6**

Provide incentives for clustering of *affordable housing* for farm workers on farmlands.

## GOAL HQ-5

**Promote and facilitate the provision of rental and for-purchase housing that is affordable to income-qualified households with a variety of income levels.**

### **H-5.1 Policy HO 5.1**

~~Housing developments where all units are income-qualified to specified income groups should be e~~Exempt from City impact fees and other selected administrative development fees housing developments where all units are income-qualified to specified income groups. Exemptions should be based upon standards that are developed to reflect the income group targeted.

### **H-5.2 Policy HO 5.2**

~~The City shall d~~Develop a program for income-qualified, first-time home buyers to provide assistance in purchasing a home that may include, but is not limited to, down payment or second mortgage assistance, below market rate loans, guaranteed loans, and tax or utility relief.

### **H-5.3 Policy HO 5.2**

All income-qualified rental housing units created as a result of the policies of this Housing Element shall remain affordable to income-qualified households for a period of not less than ~~30~~50 years from the time of first occupancy and shall be secured by recorded agreement and covenant running with the title of the land, binding all the assigns, heirs and successors of the applicant.

### **H-5.4 Policy HO 5.3**

All income-qualified homeownership units created as a result of this Housing Element shall be sold at a price affordable to income-qualified households. These units may be subject to a mechanism that is specified in an appropriate administrative procedure allowing the City to capture a share of the appreciation if the unit is sold at market rate. The City's share of the proceeds shall be used toward an *affordable housing* program.

## GOAL HQ-6

**Facilitate the siting and development of housing opportunities for *special needs* populations.**

### **H-6.1 Policy HO 6.1**

~~The City shall s~~Support the services of community non-profit organizations and local and regional public or private entities in providing shelter for temporarily homeless singles and families with children, adolescents and victims of domestic violence on Bainbridge Island.

### **H-6.2 Policy HO 6.2**

~~The City shall s~~Support the development of programs that ensure that the housing needs of the developmentally, physically and emotionally disabled are met within the community.

### **H-6.3 Policy HO 6.3**

~~The City shall s~~Support programs that provide assistance to low-income, disabled persons to retrofit their homes to be more accessible.

## **GOAL HO-7**

**Utilize the City's bonding capacity and other resources to support the creation of *affordable housing*.**

### **H-7.1 Policy HO 7.1**

The City recognizes the need to provide financing assistance for *affordable housing*. Accordingly, the City will actively pursue public and private funds that may include, but are not limited to, real estate excise tax, grants, and other available resources.

### **H-7.2 Policy HO 7.2**

The City, in partnership with local agencies producing *affordable housing*, may issue a General Obligation Bond to increase the production of housing affordable to households at or below 80% of median income for Kitsap County.

### **H-7.3 Policy HO 7.3**

~~The City Council may issue~~ Consider the issuance of councilmanic (Limited Tax General Obligation Bonds; also called councilmanic bonds, or non-voted debt) to support the development of housing affordable to households at or below 80% of median income for Kitsap County.

### **H-7.4 Policy HO 7.4**

~~The City shall eEstablish and m~~ Maintain a the Housing Trust Fund ~~which will be used~~ to support the development and preservation of *affordable housing* on Bainbridge Island.

### **H-7.5 Policy HO 7.5**

~~The City may purchase and make~~ Consider the options of purchasing and making City-owned land available through long-term leases or other mechanisms for the purpose of creating income-qualified housing, and ~~shall~~ support other public entities that wish to use publicly-owned land for this purpose.

## GOAL HO-8

**Provide a periodic report on the status of housing on Bainbridge Island and the implementation of the Housing Element in order to assess the effectiveness of the housing goals.**

### **H-8.1 Policy HO 8.1**

~~The City shall m~~Monitor by survey and/or other means, and prepare a report on, the following aspects of housing:

- A. Housing in general and the types of housing encouraged in this Element, including affordable *multi-family* and single family, owned and rented; *accessory dwelling units*; subsidized housing; adaptable units; clustered housing and cottage housing.
- B. The condition of the local housing market and the number of new housing units, publicly and privately funded.
- C. The use of density bonuses and the number of for-purchase housing units provided in new developments.
- D. A description of the various initiatives supporting *affordable housing*, including activities of community non-profit organizations and local and regional public or private entities.
- E. Programs of housing repair and renovation that improve accessibility.

### **H-8.2 Policy HO 8.2**

~~Issue~~ ~~The housing report shall be issued at least every five~~ four years, beginning in 2019, in order to inform the periodic eight-year coordination with state-mandated updates of the Comprehensive Plan, and to measure progress in implementation between the updates. ~~Make the reports shall be made~~ available to the public in various ways, such as notice in the local newspaper, on the City's web page, and on local media outlets.

## HOUSING ELEMENT IMPLEMENTATION

**High priority actions:**

**Medium priority actions:**

**Other priority actions:**

## GLOSSARY OF HOUSING TERMS

**Accessory Dwelling Unit:** Separate living quarters contained within or detached from a single-family residence on a single lot.

**Affordable Housing:** Housing where the occupant pays no more than 30% of gross monthly income for total housing costs, including the cost of taxes and insurance for homeowners and monthly utilities for owners and renters.

Affordable housing is defined according to the interpretation found in the Growth Management Act - Procedural Criteria [WAC365-195-070(6)]. The term "applies to the adequacy of the housing stocks to fulfill the housing needs of all economic segments of the population. The underlying assumption is that the market place will guarantee adequate housing for those in the upper economic brackets but that some appropriately zoned land, regulatory incentives, financial subsidies, and innovative planning techniques will be necessary to make adequate provisions for the needs of middle and lower income persons."

The Department of Housing and Urban Development (HUD) sets household income limits for five income categories based on the local median household income which is determined each year. They are as follows:

Extremely Low Income .....	30% or less of median household income
Very Low Income .....	31% - 50% of median household income
Low Income.....	51% - 80% of median household income

Moderate Income.....81% - 95% of median household income  
Middle Income.....96% - 120% of median household income

**Assisted Housing:** Multifamily rental housing that receives governmental assistance and is subject to use restrictions

**Cluster Development:** A development design technique that concentrates buildings in specific areas on a site to allow the remaining land to be used for recreation, common open space, and preservation of environmentally sensitive areas. Cluster development allows the reduction of lot sizes below the zoning ordinance's minimum requirements if the remaining land is preserved as permanent open space.

**Comprehensive Housing Affordability Strategy (CHAS):** A document which is prepared annually to lay out housing affordability strategies that address the needs of homeless, low and moderate income people in ways that promote community and individual stability.

**Context Sensitive Design:** Site, landscaping, architectural, or engineering design that is compatible with a development's setting, the contours of the land and natural systems on-site and immediately off-site, and that is compatible with the character, location and configuration of improvements and uses on adjacent properties.

Cottage Housing: A grouping of small, single family dwelling units clustered around a common area and developed with a coherent plan for the entire site. Cottage units typically have a shared common area and coordinated design and may allow densities that are somewhat higher than typical in single family neighborhoods. Cottage housing offers a degree of privacy and some of the benefits of single family housing combined with the lower cost and maintenance of attached housing. The clustered arrangement can contribute to a sense of community.

**Density:** The number of dwelling units allowed in a lot area.

**Density Bonus:** Additional density provided to a developer to achieve certain policy objectives, such as the construction of affordable housing units. (The developer is allowed to build a certain amount {a percentage} above the base density in exchange for the provision of a certain number of affordable units.)

Designated Centers: Those areas of the Island where the majority of the development and redevelopment should be located over the next fifty years. These include Winslow, Lynwood Center, Island Center, Rolling Bay, Sportsman Triangle and Day Road. See Fig. LU-1 Land Use Concept.

**Development Regulation:** The controls placed on development or land use activities by a county or city, including, but not limited to, zoning ordinances, critical areas ordinances, shoreline master programs, official controls, planned unit development

ordinances, subdivision ordinances, and binding site plan ordinances together with any amendments thereto.

**Dwelling Unit:** A building or portion of a building that provides independent living facilities with provision for sleeping, eating and sanitation. The existence of a food preparation area within a room or rooms is evidence of the existence of a dwelling unit.

**Fair Share Housing:** A quantification of each jurisdiction's "share" of middle and low-income housing needs in a region or county, and a plan for how each jurisdiction will satisfy its obligation to provide for its share of the need.

**Flexible Lot Design Subdivision Process:** This process permits development flexibility that will encourage a more creative approach than lot-by-lot development, including lot design, placement of buildings, use of open spaces and circulation, and best addresses the site characteristics of geography, topography, size or shape. This method permits clustering of lots, with a variety of lot sizes, to provide open space and protect the Island's natural systems. The criteria for the layout and design of lots, including a minimum percentage of open space and a minimum lot size for each zone, will be set out in the zoning ordinance.

**Guiding Principle:** A high-rank order value guiding growth, development, and conservation of resources in the community. Guiding principles are derived from and provide extension of the aspirations and values described in the Vision Statement. Guiding Principles provide policy direction to the Goals and Policies of the Elements in the Comprehensive Plan.

**Homeless:** Persons whose primary nighttime residence is 1) a public or private place not designed for, or ordinarily used for, sleeping accommodations for human beings, or 2) a residence which is a publicly or privately operated shelter designed to provide temporary living accommodations.

**Household:** One or more related or unrelated persons occupying a housing unit.

**Housing types:** This term refers to the physical form, configuration or scale of housing, as opposed to an ownership pattern (i.e., rental vs. owned).

The list below groups housing types by the category of whether the housing units are detached, common wall, or stacked:

**Detached housing,** includes one and two-story houses, ramblers, split-levels, cottages, cabins, accessory dwelling units, mobile homes, and carriage houses (unit over a garage);

**Common wall housing,** includes duplexes, zero lot line homes, rowhouses and townhouses; and

**Stacked housing**, includes two or three story garden apartments and mid-rise, mixed-use structures with commercial ground floor uses and two or more stories of residences above.

**Impact Fees:** Charges levied by the City against a new development for its pro-rata share of the capital costs of facilities necessitated by the development. The Growth Management Act authorizes the imposition of impact fees on new development and sets the conditions under which they may be imposed.

**Infill Development:** Development usually consisting of either 1) construction on one or more lots in an area already developed or 2) new construction between two existing structures.

**Low Impact Development (LID):** A stormwater management strategy that emphasizes conservation and use of existing natural site features integrated with distributed, small-scale stormwater controls to more closely mimic natural hydrologic patterns in residential, commercial, and industrial settings. LID employs principles such as preserving and recreating natural landscape features and minimizing impervious surfaces to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product. Practices that adhere to these LID principles include bio-retention facilities, rain gardens, vegetated rooftops, rainwater harvesting (rain barrels and cisterns) and permeable pavements.

**Manufactured Housing:** A broad term including mobile homes, modular homes and other "factory built" housing. The main distinction is that manufactured housing is created in one or more parts in a factory and is designed and constructed for transportation to a site for installation on a permanent foundation and occupancy when connected to required utilities.

**Mixed Use Development:** The presence of more than one category of use in a structure, for example, a mixture of residential units and office or retail uses in the same building.

**Multifamily:** A structure or portion of a structure containing two or more dwelling units.

**Neighborhood:** A small, predominantly residential area of the Island in which the residents share a common identity which may focus around an elementary school, park, community business center or similar feature.

**PUD or Planned Unit Development:** A development of land that is under unified control and is planned and developed as a whole in a single development operation or programmed series of development stages. Development through a PUD is a process in addition to the subdivision process, which permits development flexibility that will encourage a more creative approach than lot-by-lot development in design,

placement of buildings, use of open spaces, circulation, and best addresses the site characteristics of geography, topography, size or shape.

**Residential Use:** Any land use that provides for living space. Examples include single family residence, multi-family residence, special residence mobile home park, boarding house, caretaker's quarters, accessory dwelling.

**Special Needs Populations:** Individuals or families who require supportive social services in order to live independently for semi-independently.

**Subarea Plan:** An optional comprehensive plan feature authorized by the Growth Management Act. Subarea plans provide detailed land use policies for a geographic subset of a city.

**Subdivision:** The division or re-division of land into five or more lots, tracts, parcels, sites or divisions for the purpose of sale, lease or transfer of ownership.

**Substandard Housing:** A dwelling unit that does not meet the criteria for an acceptable standard of living, through lack of maintenance, age of unit, neglect, lack of plumbing facilities, kitchen facilities, or crowded conditions.

**Urban Concentration:** An area within the urban growth boundary of Bainbridge Island in which urban level of development with urban levels of public services and facilities are concentrated.

**Vision:** A Vision is a narrative description of a preferred future, describing desired long-term qualities and characteristics of the community 20 or more years in the future.

**Vision 2040:** Vision 2040 constitutes the multi-county planning policies for the region consisting of King, Pierce, Snohomish and Kitsap counties and the cities within those counties.

**Wetland:** Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

**Bainbridge Island Key Issues and Public Comment**  
**12/3/15 HOUSING ELEMENT WORKSHOP**

<b>PUBLIC COMMENTS (1,2,3, etc.)</b>		<b>Commenter</b>
1	<p>Comp Plan isn't entirely lacking but can be improved, implementation and regulation is needed. Imbalance of owner vs rental, and somehow the Plan needs to change that course. Land Use Policies that we proposed should be addressed. The Housing Design Demonstration Project (HDDP) program should be made permanent as the only current affordable housing program. The Neighborhood Service Centers (NSC) are grossly under-zoned. Increased density should be allowed in NSC, and tie it to providing affordable housing.</p>	<p>Charlie Wenzlau</p>
2	<p>As a public housing agency, Housing Kitsap serves whole county, 900 units total, including housing for residents with Special needs, seniors, and housing built using low-income tax credits. Many tools that can be used. The Holla study done for the City of Seattle is a good resource. The Housing Element is broad and even-handed, but not easy to determine implementation measures. It needs to be more clear about what you are trying to accomplish. The market will take care of high-income folks.</p> <p>Think about what do you want to accomplish, and make it clear in the Element. It is hard to build affordable housing. All the tools still make for a difficult project to pull off. Connection between having a safe place to live, and overall well-being of kids and other residents with challenges. Bainbridge Island should speak up about funding or state laws and how to change them. Housing Kitsap has subsidized housing, seniors, disabilities, and some rentals that go up to 80%AMI. The helping hands program is another long-term home ownership because of the sweat equity that the resident puts in.</p>	<p>Stuart Grogan, ED Housing Kitsap</p>

<b>PUBLIC COMMENTS (1,2,3, etc.)</b>		<b>Commenter</b>
3	<p>Submitted ideas about land use that spoke to housing needs. High School Rd. district urban village concept mixed use, increase the FAR to spur residences and pedestrian connections. The Safeway property seems ripe for redevelopment. Perfect place for affordable housing multifamily project, easier to support with greater density.</p> <p>Compact rural communities- small homes in the less dense zones outside Winslow, density bonus will bring the cost of the land down and conservation easement. Smaller home size increases affordability. The cost of construction and land continues to rise, makes affordable housing very hard to do. How can you create homes that support affordability? Can we create funding, or do a bond, to build some affordable housing. HRB and Housing Kitsap struggle to afford projects.</p>	Jonathan Davis
4	<p>I've worked in the commercial real estate business in Seattle. The number of Islanders below 80% AMI is high. Affordable housing on Bainbridge means that we need more rentals. Modestly increasing density is one way to increase affordability. Core district FAR and height is too low- can't pencil out a mixed use project at the vacant building in the middle of Winslow Way. Workforce housing is the real problem. More supply in rental market will bring costs down. Rental housing can't pencil out with low densities</p>	Dale Sperling
5	<p>I represent a home-owner perspective. The City needs to figure out how much growth can the Island support before we change affordable housing requirements. We know that the Island has limited resources, and the sewer on the south end is over capacity. Make development pay for itself with impact fees. Many people have left because of higher taxes. BI is a small city, and we cannot support as many types of people as east-side cities like Seattle. The City shouldn't make any changes to development regulations until we figure out where aquifer conservation zones are. There are no HDDP metrics- where are the studies to say that HDDP is successful? NSC can't be built anymore because there is not sewer. We are an Island, we aren't Seattle or Kitsap County.</p>	Melanie Keenan

<b>PUBLIC COMMENTS (1,2,3, etc.)</b>		<b>Commenter</b>
6	<p>The affordable housing discussion has been going on for a long time, it used to be affordable, but now it is not. It's a nice place, and people with money will always gravitate to nice places. The cost of land is prohibitive. The Quay Apartments were affordable, and the City Council almost approved \$4Million of councilmatic bonds to ensure that it remained. We can't count on another gift of land, such as the Curtis property to HRB, for a righteous cause. We really need to do something, or is it just platitudes. The City needs to change its will to act on it. If we want affordable housing, then we need to pay for it, because if we don't pay for it, we won't get it.</p>	Ed Kushner
7	<p>What are incentives we can offer to keep people here? Rising taxes and bonds are a real concern by those on fixed income. Density clusters in rural parts of Island would violate special character and degrade environment. We need to have an ongoing discussion about this. This is really a social justice issue. Can't forget about stewardship, and be realistic about what we can really do.</p> <p>We keep hearing how more density will increase affordability, but the Island has grown denser, and gotten less affordable.</p> <p>We create unrealistic expectations when we talk about making room for all types of residents. Making accessory dwelling units (ADUs) larger will make them less affordable. If we are going to talk about these things, then we need to be realistic. We have miserably failed at accomplishing what is in the existing Element. Many people moved away to take advantage of increase value.</p>	Ron Peltier
8	<p>Can't comprehend why we would even consider building density in the rural areas when commercial projects like Visconsi have no housing- all commercial projects even new police station should have housing.</p>	Doug Rauh
9	<p>Important to try and maintain existing affordable housing stock. Policy H2.3 is about livaboard housing, the SMP changes the 25% livaboard potential for marinas reduced to 10%. Livaboard housing is affordable has many types of families</p>	Elise Wright

<b>PUBLIC COMMENTS (1,2,3, etc.)</b>		<b>Commenter</b>
10	In US, 28% of housing stock is 1 person, smaller household size is the new norm, but housing size has dramatically increased. Agree with Jonathan that small home communities and density bonus should be developed. Pocket neighborhoods are being constructed all over the US. NSC zoning is not dense enough. Home sharing is happening- what about 2 ADUs allowed, and consider parking flexibility. The cottage housing work should be restarted. Floating homes are another option.	Russ Hamlet
11	Lives in Indianola in a co-housing development that uses zoning flexibility. Encourage Comprehensive Plan coordination with Poulsbo, and County on housing issues, because they impact each other. Make sure there is some alignment. A broad range of inclusionary zoning rules, carrots and sticks, and policies shouldn't prohibit the use of any tools. Kitsap County is projected to lose over 800 units of affordable units countywide because the 40 year affordability requirement ends, and they go to market rate.  Affordable housing allows people to age in their community as they start having on fixed income. 10,000 households in Kitsap severe rent burdened- more than 50% of income on housing. What are the action steps that come out of the Plan the policies need to be clear, that will be the difference from 2004.	Kirsten Jewell
12	We need to be careful about cause and effect choices, because if we create smaller affordable homes, we don't know if the current workforce will choose to live there. I'm in the Commodore neighborhood, and neighborhoods don't often find out about things until it's too late. Current housing element seems to be too developer focused. Maybe market and financial tools need to be used, because doubling density not fair to existing adjacent residents.	Marshall Tappan

<b>PUBLIC COMMENTS (1,2,3, etc.)</b>		<b>Commenter</b>
13	<p>Director of Helpline House. Have been a renter, but have purchased a home thanks to Ed's program. The prices have risen dramatically in the last 10 years. Speaking from community members, donors, and those that use our services. Housing Element needs an overhaul, but it doesn't really reflect reality now. Goals should be achievable and believable. Define affordability, and explain what constituency you are trying to reach.</p> <p>Try to preserve existing housing stock, and integrate new units among existing development. Try to encourage a private/public partnership. Start with small projects that can be successful, and then work on larger projects. What about co-housing promotion, rooming homes, or microunits. Some with a common kitchen. At Helpline House, I see single people and families of all kinds living in shacks and cars, some with children. HH served about over 100 people last year, and are helping people every month move off the Island.</p>	Joanne Tews