

CALL TO ORDER - Call to Order, Agenda Review, Conflict Disclosure  
PUBLIC COMMENT - Accept public comment on off agenda items  
2016 LOW IMPACT DEVELOPMENT WORK  
PUBLIC COMMENT ON COMPREHENSIVE PLAN UPDATE  
2016 COMPREHENSIVE PLAN UPDATE  
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 6:04 PM. Planning Commissioners also in attendance were William Chester, Lisa Macchio and Michael Killion. Commissioners Jon Quitslund, Maradel Gale and Michael Lewars were absent and excused. City Staff present were Public Works Director Barry Loveless, Interim Planning Director Joe Tovar, Senior Planner Jennifer Sutton, Water Resources Specialist Cami Apfelbeck and Administrative Specialist Jane Rasely who monitored recording and prepared minutes.

The agenda was reviewed. There were not any conflicts reported.

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

**Melanie Keenan, Citizen** – Wanted to present her concerns about the reporting on water levels and the data relating to the early warning levels. She was concerned about the draw down. She felt the data was misleading, the scale was crowded and there was a lack of legend. She stated she understood there was a scope of work and a limitation on the amount of money that could be spent, but wanted the Planning Commission to understand what was going on. Ms. Keenan showed reporting from 2006 separating the Fletcher Bay Aquifer into three separate sheets due to the number of wells. She showed how the well levels were displayed more clearly and that there was a slight downward trend. Ms. Keenan then presented reporting from 2009. She mentioned the early warning levels were at about half a foot per year for 10 years and that previously the Island Utilities wells had been in an early warning level at .49 feet. Ms. Keenan referenced a 2013 summary that spoke about the early warning levels but there was not any reporting for Fletcher Bay Aquifer even though the City was heavily reliant on it. She then moved to Aspect Consulting's 2016 report showing the Fletcher Bay Aquifer. She felt the graph was very difficult to see and pointed out there was not a legend. She felt there was a better way to provide the information that would be clear for non-technical Council and Commissioners to see what was actually going on with the aquifers. (Ms. Keenan used a KPUD graphic on an Island well as an example of how the data display could be improved.)

**2016 LOW IMPACT DEVELOPMENT WORK**

Interim Director Joe Tovar gave an overview of where the City was in the update of the Comprehensive Plan before Public Works Director Barry Loveless walked the Commissioners through the Low Impact Development Program (LID), what it is and why the City needed to have it.

Commissioner Pearl asked what the loop hole in the LID was. Mr. Loveless replied that it would take a lot more studies up front before development happened. Commissioner Killion asked what the significant barriers to implementing LID would be. Mr. Loveless stated that in addition to more up front work and study, there was the possibility of giving up some of the development potential of a property. Commissioner Chester mentioned an online form the City of Seattle had that helped a developer figure out what their LID score would be for a building project.

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

**Melanie Keenan, Citizen** – Began by speaking about aquifer conservation zones and regulations. Ms. Keenan stated there was no shortage of regulations that covered drinking water and water resources. She told the Planning Commission the references she had cited earlier in both Power Point presentations and e-mail were relevant to working towards a responsible Water Resources Element. She continued by saying that as the only sole source aquifer, all island urban growth area city surrounded by salt water in the entire state of Washington, the Commissioners had a lot to consider. (See attached presentation.)

**Robert Dashiell, Citizen** – Stated he had 45 individual comments he would submit by e-mail. He did speak about sidewalk illumination, reminding the Commissioners that he had spoken about it at the previous Planning Commission meeting. In his opinion the illumination issue had spun kind of out of control thinking a wide area of illumination did not want to be created in downtown and then it moved to carry a flashlight if you cannot see where you were going if you wanted to walk the sidewalks of Winslow and then moved to wearing reflective clothing, lighting intersections and flashing lights across intersections. Mr. Dashiell stated the point he wanted to make was that sometimes when a comment was made, it grows out of control because you couldn't just have a conversation about something. He wanted to express his frustration that he would love to stand up and say, "Wait a minute, there are three street lights that need to be put in downtown," but that would go out of control. He felt a lot of comments could be taken out of context and realized how difficult it was to get across an idea but sometimes, what someone wanted to say was really pretty simple and then everybody has a different experience of life and it gets blown out of proportion. Mr. Dashiell complimented Barry Loveless on his presentation regarding LID. He mentioned he had participated in 16 hours of training on LID stating there was a WSU Ecology campus in Puyallup that was an absolutely fantastic place to take LID courses. He offered up two key things to keep in mind: 1) The whole idea of LID was to retain 91% of the Stormwater on the parcel; and 2) Every soil sample in western Washington can be LID amended. The maximum needed even on hardpan was 12 inches to take the rainfall of western Washington. He went on to say that most of what they were doing was not so much what the soils were at the present time, though that was part of it, but actually putting an amendment on the soil with the average amount of amendment in Washington expected to be 8 inches. He stated that almost all the water coming down on a parcel could be infiltrated in 8 inches of amended soil. Mr. Dashiell stated he felt the argument that everything in Winslow would not go into the soil would be put to rest very quickly because the scientists were saying it could be done, even on the south end of the Island which had bedrock. He went on to say Mr. Tovar made an important point that the entire Island was an aquifer recharge area and that he did not know how much more that needed to be parsed down from that. Mr.

Dashiell also encouraged attendance at public workshops given by the Department of Ecology in Poulsbo. He also said he was happy to hear the City talk about LID and was glad there was a team working on it. He then mentioned trees and their sensitivity to soil amendment saying that would be quite a challenge for regulators.

**Olaf Ribeiro, Citizen** – Was a little disturbed that nowhere in the Water Resources Element did it mention the word trees even though they were an integral part of the recharge system. He knew of at least 20 cities that were spending a large number of dollars to plant trees and preserve their forests because they were an important part of their recharge aquifers. He stated the Island had an amazing resource with more green-scape than most had and if they protected it, they had a good chance of improving the aquifer recharge area. Mr. Ribeiro noticed in the Water Resources Element there was not a good distinction between green infrastructure and natural systems and grey infrastructure. He stated he spent a lot of time developing biological methods that would improve infiltration in landscaping and that trees were also an important part of the overall picture in the environment.

#### **2016 COMPREHENSIVE PLAN UPDATE**

Senior Planner Jennifer Sutton briefly summarized her memorandum to the Planning Commission and reviewed the Planning Commission's work from their last meeting. She introduced Water Resources Specialist Cami Apfelbeck stating she was here to answer any questions they may have. She reminded everyone that the third and last Conversation on Bainbridge Island's Water Supply would occur the following Thursday, March 17, 2016 followed by a short Planning Commission meeting.

Commissioner Macchio started the discussion by saying she did not typically think about stormwater as a water resource. She felt it was more something more to be managed than protected. Ms. Apfelbeck stated that Kitsap County adopted a policy that saw stormwater as a resource instead of a waste product. Commissioner Pearl stated when the LID program was adopted, it would sort of eliminate Stormwater by making it ground water. Ms. Apfelbeck stated there was a shift in the concept of Stormwater to see it as a resource.

Commissioner Pearl brought up redundancies in the policies saying they needed to be removed. Commissioner Chester stated the document needed to be positive and there should be language included that stated there were current technologies available and research was continuing to help remove some of the pollutants. Extensive discussion regarding aquifer recharge areas and their "ranking" in importance occurred with Ms. Apfelbeck clarifying how to read them and what the information was presented on the maps.

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

**Ron Peltier, City Council** – Wanted to know why they were not talking about a groundwater management plan because he felt a lot of these were components of that. He thought some of the Commissioners were aware that Vashon Island had a groundwater management plan and that it was an island about the same size that also depended only upon aquifers for its fresh water. He felt all the issues related to this would be part of such a plan. Mr. Peltier wanted to see some reference to that and that the City at least started thinking about it and working toward that. He stated it was a big project because the City could not do it by itself but the City could show leadership by bringing all the stakeholders together. He liked the reference in the Vision for the Water Resources Element to the limited carrying capacity of the Island. He felt it was important to keep that in mind because regardless of what they thought that limit was, there WAS a limit to how much groundwater, how many resources and how much physical area the Island had. He hoped that would stay in the version ultimately recommended to the Council.

**Melanie Keenan, Citizen** – Wanted to make a few comments based on the questions the Commissioners had during discussion. She stated that shallow aquifers fed deeper aquifers and that they all worked in concert. She also said she heard the LID was a good thing, but reminded the Commissioners they had to think of it in terms of that being a building code versus a conservation code for aquifers. She felt it was a minor tool in the toolbox compared to other required regulations. She stated that some areas on the Island were geologically worth preserving more and that the Island had been mapped geologically and that some soils were more conducive to recharge. She felt the inventory of critical aquifer recharge areas needed to be reviewed, updated and prioritized touting San Juan County as having a very comprehensive Water Resources Element and the City should look at it. Ms. Keenan also stated she felt the City was behind on a comprehensive inventory of well heads. She also wanted to make sure each watershed basin was taken care of as well, to keep the freshwater/saltwater interface as far off shore as possible.

**Robert Dashiell, Citizen** – Stated he was a “financial” guy and watched the City’s spending and wanted to comment on something Commissioner Macchio had said about having a program for anything they needed to promote. Mr. Dashiell said every program the City established, every “shall” placed in one of the documents costs money, increased City staffing, staffing time and he thought that while that was a City Council problem, he wanted them to be aware that when they wrote that in there, it would become an issue when it went up before City Council. He felt the extent of that would be pretty breathtaking. Commissioner Macchio expressed appreciation for his comment about the cost of things but stated it was important to have programs that help the community and if the City was going to say things like, “We need you to monitor, we’d like you to do this, we’d like you to do that,” that though programs cost money, they facilitate community engagement and citizen involvement. She thought they had to look at the long term gains on the initial capital investment of the program and if they said these things in the Plan but didn’t do anything about them, they were meaningless.

### **NEW/OLD BUSINESS**

None.



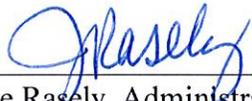
**Planning Commission  
Regularly Scheduled Meeting Minutes  
Thursday, March 10, 2016**

**ADJOURN**

Meeting was adjourned at 8:17 PM.

Approved by:

  
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J. Mack Pearl, Chair

  
\_\_\_\_\_  
Jane Rasely, Administrative Specialist



## **WATER RESOURCES ELEMENT**

### **VISION** - Proposed version

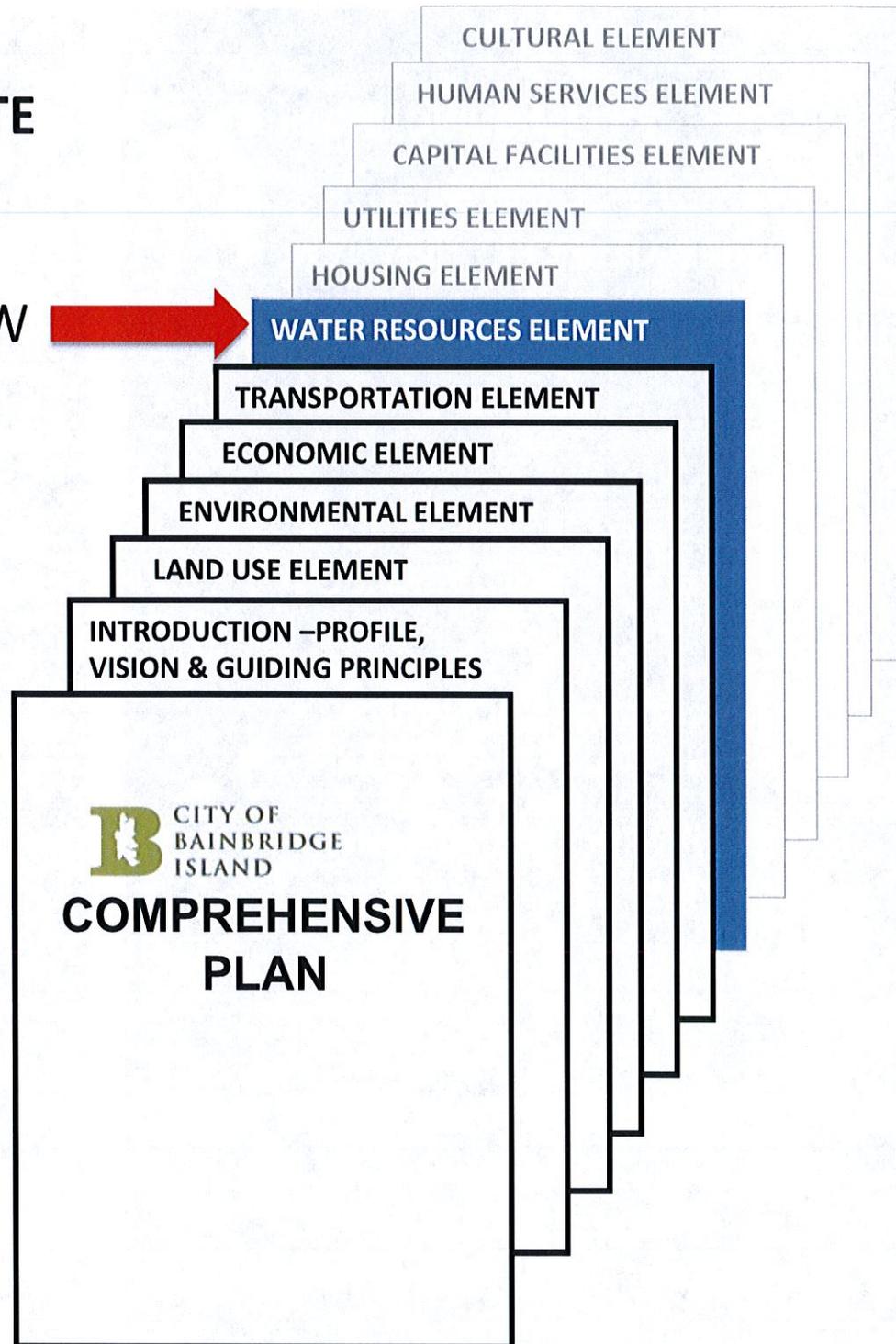
Bainbridge Island's water resources -- precipitation, on the surface, and in the ground -- is climate resilient with fluctuating supply and demand and quantity is adequate for all forms of life on the Island. Because carrying capacity is limited, aquifer levels are closely monitored, conservation advocated and practiced, and water quality carefully maintained. Low Impact Development is being applied to a wide variety of land uses including redevelopment.

### VISION – Draft Version

"Our vision is of water resources -- precipitation, on the surface, and in the ground -- that remain adequate for all forms of life on the Island, with supply and demand fluctuating but resilient. This will require monitoring, conservation, and careful maintenance of water quality and quantity. The Island's carrying capacity is limited."

# NAVIGATE BAINBRIDGE COMPREHENSIVE PLAN UPDATE

WHERE WE ARE NOW



Joe Toval Presentation  
3-10-10

# WATER RESOURCES ELEMENT

INTRODUCTION

VISION

GOALS AND POLICIES

EXISTING CONDITIONS/FUTURE NEEDS

IMPLEMENTATION

## IMPLEMENTATION

### AQUIFER PROTECTION REGULATIONS

- ◆ CRITICAL AQUIFER RECHARGE AREA  
BIMC 16.20.120
- ◆ AQUIFER CONSERVATION ZONE  
RCW 36.70A.550
- ◆ SMP REGULATIONS RCW 90.58
- ◆ WELLHEAD PROTECTION  
REGULATIONS (KITSAP PUBLIC  
HEALTH DIST.)
- ◆ LOW IMPACT DEVELOPMENT  
REGULATIONS – TO BE ADOPTED

### AQUIFER PROTECTION PROGRAMS

- ◆ WATER CONSERVATION EDUCATION
- ◆ MANAGING HEALTHY SEPTIC  
SYSTEMS
- ◆ MONITORING WELLS

## Bainbridge Island Municipal Code

### 16.20.120 Aquifer recharge areas.

A. Classification. The entirety of Bainbridge Island is the recharge area for the island aquifers under this chapter.

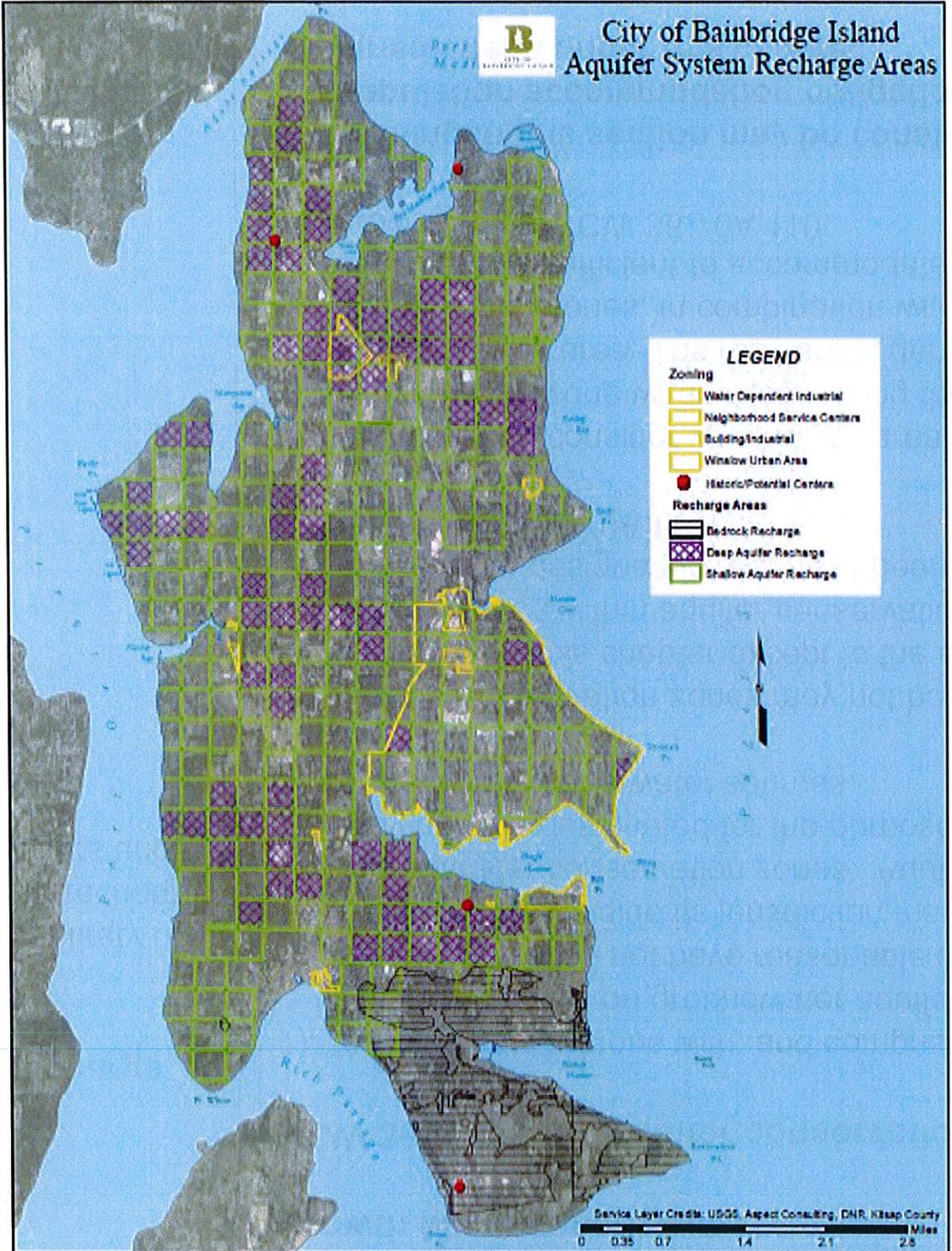
## Growth Management Act

### RCW 36.70A.550 - Aquifer conservation zones

- 1) Any city coterminous with, and comprised only of, an island that relies solely on groundwater aquifers for its potable water source and does not have reasonable access to a potable water source outside its jurisdiction may designate one or more aquifer conservation zones. Aquifer conservation zones may only be designated for the purpose of conserving and protecting potable water sources.
- 2) Aquifer conservation zones may not be considered critical areas under this chapter except to the extent that specific areas located within aquifer conservation zones qualify for critical area designation and have been designated as such under RCW 36.70A.060(2).
- 3) Any city may consider whether an area is within an aquifer conservation zone when determining the residential density of that particular area. The residential densities within conservation zones, in combination with other densities of the city, must be sufficient to accommodate projected population growth under RCW 36.70A.110.
- 4) **Nothing in this section may be construed to modify the population accommodation obligations required of jurisdictions under this chapter.**



# City of Bainbridge Island Aquifer System Recharge Areas



March 10, 2016 Comments for Water Resource Element  
Planning Commission Meeting Presentation  
Melanie Keenan

The references cited in previous power points and emails are relevant for working towards a responsible Water Resource Element. As the only Sole Source Aquifer all Island UGA city surrounded by salt water in the state of Washington you have much to consider.

Ensure drinking water is safe, and restores and maintains the Puget Sound, Tidelands, Island watersheds, and their aquatic ecosystems to protect human health, support economic and recreational activities, and provide healthy habitat for fish, plants, and wildlife (Adapted from the Office of Water (OW))

Including adequately defining and utilizing **Aquifer Conservation Zones** in RCW 36.70A.550

There is no shortage of regulations pertaining to the water supply and protecting water resources.

Regulations stem from the **Clean Water Act** is the primary federal law in the US governing water pollution. Its objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and non-point pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands.

**Safe Drinking Water Act (SDWA)** is the principal federal law in the US intended to ensure safe drinking water for the public. Pursuant to the act, the EPA is required to set standards for drinking water quality and oversee all states, localities, and water suppliers who implement these standards. SDWA applies to every public water system (PWS) in the United States.

Most Washington state regulations for Water Resources have references to the GMA and are referenced by the GMA.

**1. Sole Source Aquifer Designation** – Must be referenced & defined in the Water Element, Bainbridge Island has a higher level of requirements to protect limited water resources as a result of being a Sole Source Aquifer (SSA) Island surrounded by salt water, with no other available or affordable drinking water supply to sustain the population and accommodate growth.

**2. Wellhead Protection Program** Guidance & map- needs to be updated  
<http://www.doh.wa.gov/portals/1/Documents/Pubs/331-018.pdf>

**3 Critical Aquifer Recharge Areas (CARA)** Guidance & map – incomplete requires update for latest critical areas  
<http://www.ecy.wa.gov/programs/wq/grndwtr/cara/index.html>

**4. Critical Areas** Regulations and Ordinance

**5. Seawater Intrusion** DOE 2002– **Kitsap Watershed WRIA 15** DOE 2012  
<https://fortress.wa.gov/ecy/publications/summarypages/1111020.html>

**6. MTCA, Listed Hazardous Waste Sites** map the sites on the Island

**7. State Environmental Policy Act (SEPA), Environmental Impact Statements (EIS)** provides a way to identify possible environmental impacts that may result from governmental decisions. permits for private projects, constructing public facilities, or adopting regulations, policies, or plans. Information provided during the SEPA review process helps agency decision-makers, applicants, and the public understand how a proposal will affect the environment. Information is used to change a proposal to reduce likely impacts, or to condition or deny a proposal when adverse environmental impacts are identified. Last 20 years no EIS has been completed for development on the Island. EIS needs to be required for larger developments to adequately protect and manage water resource impacts of growth.

*Utilities – Maintain Important overlap in the Water Element*

**8. Water System Utility** - reporting criteria, supplies data management tools

- a. Water System Management Plans
- b. Annual Consumer Confidence Reporting
- c. Source Water Protection Program

<http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/SourceWater/SourceWaterProtection>

d. Infrastructure Protections – protect and manage against contamination through aging infrastructure etc. (lead in drinking water).

**9. Stormwater Utility Program** – regulations steward water resources

**10. Sewage Treatment Utility** - adequately plan for increased waste stream.

**11. Watersheds** – Use COBI GIS mapping of 12 watersheds to plan

**12. Disaster Preparedness** - Natural disasters, like earthquakes can disrupt the drinking water supply and your wastewater disposal systems. Learn some of the issues the city may face preparing for, during and after an event that directly threatens water resources and citizens on the Island.

**13. Aquifer Conservation Zones** Compilation of the above regulations to provide a further higher level of protection.

## **AQUIFER CONSERVATION ZONES**

Please also consider the following definitions in the Merriam-Webster Dictionary

**AQUIFER** a layer of rock or sand that can absorb and hold water.

**CONSERVATION** a careful preservation and protection of something; especially: planned management of a natural resource to prevent exploitation, destruction, or neglect.

**ZONES** an area that is different from other areas in a particular way.

Use the required regulations to help define and map the most critical areas to be protected on Bainbridge Island, the only SSA all Island UGA city surrounded by salt water in WA.

Utilize Watershed mapping to help protect areas in each of the 12 basins. See COBI GIS mapping.

<http://www.ci.bainbridge-isl.wa.us/DocumentCenter/View/497>

Review the Guidance Documents for CARA and Well Head Protection

<http://www.ecy.wa.gov/programs/wq/grndwtr/cara/index.html>

<http://www.doh.wa.gov/portals/1/Documents/Pubs/331-018.pdf>

Review San Juan County Water Resource Element for ideas for other sole source aquifer island protection and planning.

[http://co.san-juan.wa.us/Planning/docs/CompPlan/SectionB4\\_2010-04.doc.pdf](http://co.san-juan.wa.us/Planning/docs/CompPlan/SectionB4_2010-04.doc.pdf)

## Summary

### Clean Water Act

### Safe Drinking Water Act (SWDA)

Most of the Washington State regulations for Water Resources have references to the GMA and are referenced by the GMA.

- 1. Sole Source Aquifer Designation** defined
- 2. Wellhead Protection Program** Guidance & map- needs to be updated
- 3. CARA - Critical Aquifer Recharge Areas** Guidance & map –requires update
- 4. Critical Areas** Regulations and Ordinance, map wetlands, streams, creeks, lakes, geologic hazardous areas
- 5. Seawater Intrusion** DOE 2002– Kitsap **WRIA 15** map
- 6. MTCA**, Map the **Listed Hazardous Waste Sites** on the Island
- 7. SEPA, Environmental Impact Statements (EIS)** more applications for Water Resources are necessary to manage and protect the resources on Bainbridge

Utilities – Important overlap to maintain

- 8. Water System Utility** Reporting Criteria
  - a. Water System Management Plans
  - b. Annual Consumer Confidence Reporting
  - c. Source Water Protection Program
  - d. Infrastructure Protections
- 9. Stormwater Management Program Utility** Regulations
- 10. Sewage Treatment Utility** – adequately plan for increased waste stream with growth
- 11. Watersheds** 12 mapped areas on Bainbridge, each needs protection
- 12. Disaster Preparedness** – be prepared
- 13. Aquifer Conservation Zones (ACZ)** - Compilation of the above regulations for higher level of protection. All of these other regulations except for SSA and Seawater Intrusion apply to all areas of Washington State...so when protecting an Island aquifer the bar is higher for implementing ACZs.

## Wellhead Protection Program

# WELLHEAD PROTECTION PROGRAM MAPPING

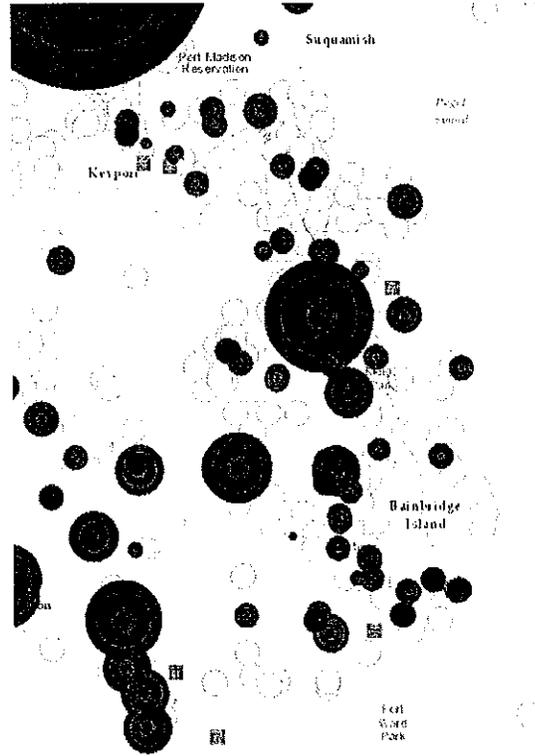
Department of Health Guidance Document

<http://www.doh.wa.gov/portals/1/Documents/Pubs/331-018.pdf>

The Safe Drinking Water Act requires every state to develop a wellhead protection program. Washington's wellhead protection requirements are designed to prevent contamination of groundwater used for drinking water. Groundwater time-of-travel criteria are used to define the primary zones of a wellhead protection area. The three principal zones are delineated using 1-, 5- and 10-year time-of-travel factors.

# mapping

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## Executive Summary

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### Overview

The Safe Drinking Water Act requires every state to develop a wellhead protection program. The state Department of Health (DOH) administers the wellhead protection program in Washington.

Most public water supply wells are located in or near communities. Washington's wellhead protection requirements are designed to *prevent* contamination of groundwater used for drinking water. The requirements apply to all Group A<sup>1</sup> public water systems that use wells or springs for source water, except those that purchase their water or get their water through interties.

Public water systems must work with local governments and regulatory agencies to develop and implement their own local wellhead protection programs.

In Washington, local wellhead protection programs must include:

- A completed susceptibility assessment.
- A delineated wellhead protection area for each well, well field, or spring.
- An inventory of potential contaminant sources in the wellhead protection area that could threaten the water-bearing zone (aquifer) used by the well, spring, or well field.
- Documentation showing the water system sent delineation and inventory findings to required entities.
- Contingency plans for providing alternate drinking water sources if contamination does occur.
- Coordination with local emergency responders for appropriate spill or incident response measures.

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### Wellhead Protection Area Delineation Methods

All groundwater-based Group A systems must complete a DOH *Susceptibility Assessment Form*. The DOH susceptibility assessment includes an assessment of the circularity of the zone of contribution. The findings from the assessment and the system size determine the minimum acceptable delineation method for the wellhead protection area. Most systems can use a calculated fixed radius method.

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<sup>1</sup> DOH uses the term "Group A" to designate public water systems that serve 25 or more people or 15 or more connections. Please see WAC 246-200-020 for more details.

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## Wellhead Protection Area Zones

Groundwater time-of-travel criteria are used to define the primary zones of a wellhead protection area. The three principal zones are delineated using 1-, 5- and 10-year time-of-travel factors. The 1-year time-of-travel zone includes a 6-month delineation to focus protection from viral and microbial contamination where loading may pose a higher risk to the drinking water supply such that a higher level of on-site treatment may be appropriate. The two other zones are the currently existing sanitary control area and an additional buffer zone (if warranted). It takes various management strategies to prevent pollution and reduce risk from different types of contaminant threats. State law sets requirements for wellhead protection area zones (WAC 246-290-130 and 246-290-135).

A wellhead protection area may have four or five zones. Each zone represents the length of time it would take a particle of water to travel from the zone boundary to the well.

**The sanitary control area:** The area immediately around the wellhead.

**Zone 1:** The 1-year horizontal time-of-travel boundary for groundwater. Zone 1 is managed to protect the drinking water supply from viral, microbial, and direct chemical contamination. Zone 1 includes a 6-month time-of-travel boundary.

**Zone 2:** The 5-year time-of-travel boundary for groundwater. Zone 2 is managed to control potential chemical contaminants. All potential contaminant sources must be addressed with emphasis on pollution prevention and risk reduction. Zone 2 provides information local planners use to site future "high risk" and "medium risk" potential contaminant sources.

**Zone 3:** 10-year time-of-travel boundary for groundwater. Zone 3 is the outer boundary of the wellhead protection area. In Zone 3, potential high- and medium-risk contaminant sources receive increased regulatory attention and technical assistance, with emphasis on pollution prevention and risk reduction.

**Buffer zone:** an area sloping up from Zone 3, potentially including the entire zone of contribution. The buffer zone may include additional non-contiguous critical aquifer recharge areas<sup>2</sup> requiring protection from contamination.

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## Roles and Responsibilities

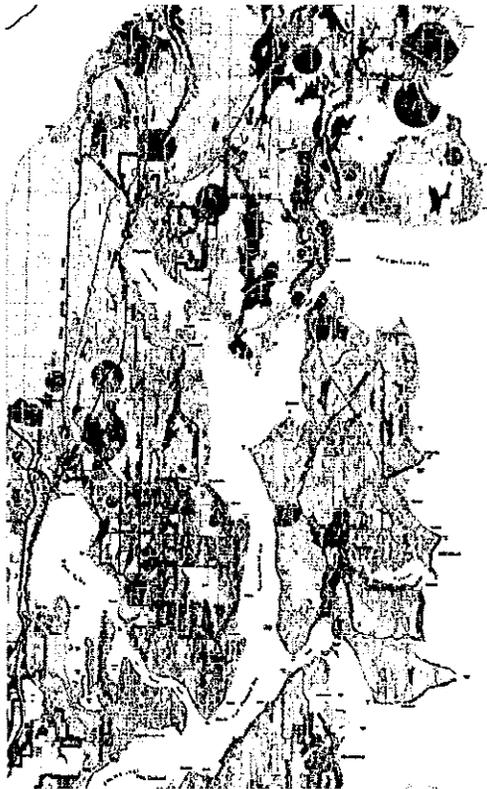
The state Department of Health administers the state Wellhead Protection Program. Other state agencies, such as the Ecology and Agriculture, integrate wellhead protection into their programs.

Local governments with zoning authority are responsible for land use planning and zoning. Local agencies, such as planning and health departments, play a major role by helping water systems protect their community's drinking water supply, and coordinating wellhead protection measures.

Water systems must delineate (define) and take an inventory of their wellhead protection areas.

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<sup>2</sup> As defined in section 38.70A.170 of the Growth Management Act.



# Kitsap County Aquifer Recharge Areas

Please provide compliance reporting for DOE Critical Aquifer Recharge Guidance Document.

This guidance document helps local jurisdictions and the public understand what is required for the protection of local groundwater resources under the Growth Management Act. It includes guidance for planning, ordinances, and for including the Best Available Science (BAS) as these relate to Critical Aquifer Recharge Areas.

The GMA requires the designation and protection of "Critical Areas" to prevent harm to the community from natural hazards and to protect natural resources.

<https://fortress.wa.gov/ecy/publications/documents/0510028.pdf>

**Legend**

<ul style="list-style-type: none"> <li>○ Aquifer Recharge Areas of Concern</li> <li>■ Highly Permeable Soils</li> </ul>	<ul style="list-style-type: none"> <li>— Well Head Protection Zones               <ul style="list-style-type: none"> <li>10 year</li> <li>5 year</li> <li>1 year</li> </ul> </li> <li>National Wetland Inventory</li> <li>Tidelands               <ul style="list-style-type: none"> <li>Open Salt Water</li> <li>Open Fresh Water</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>— Arterial Type               <ul style="list-style-type: none"> <li>State Highway</li> <li>Principal Arterial</li> <li>Major Arterial</li> <li>Major Collector</li> <li>Collectors</li> <li>Neighborhood Roads</li> <li>Railroad Line</li> </ul> </li> <li>■ Incorporated Cities</li> <li>□ Tax Parcel</li> </ul>
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# compliance

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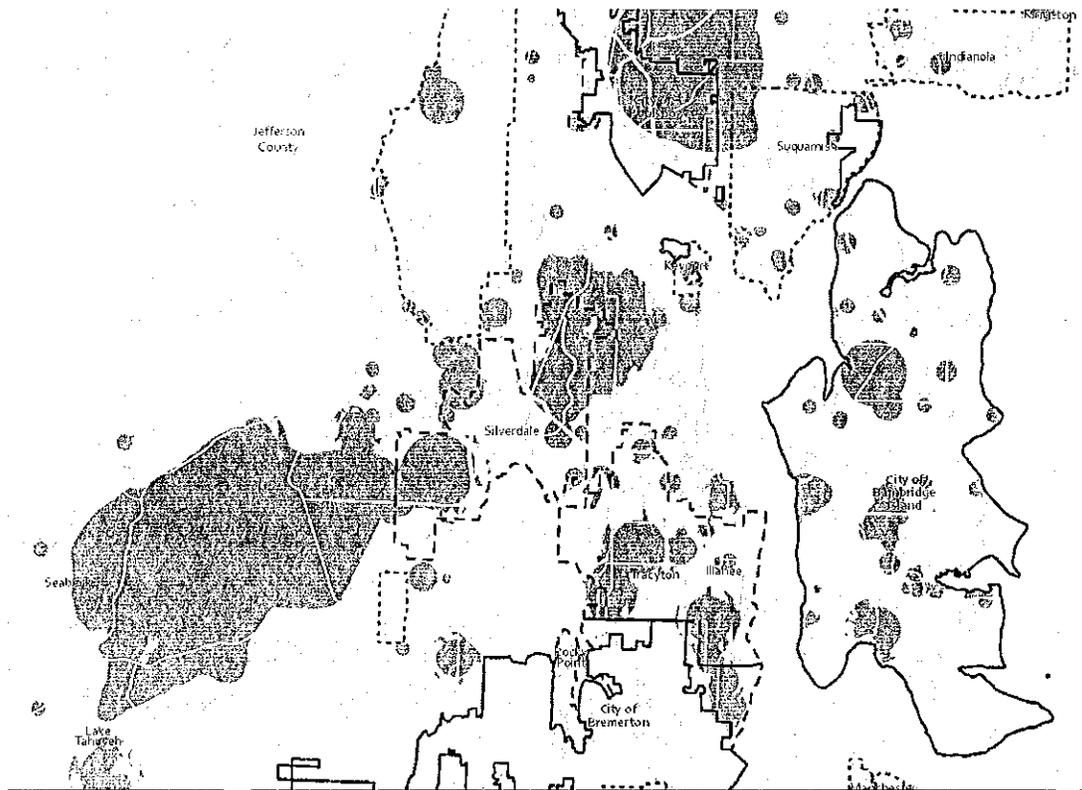
## Critical Aquifer Recharge Areas

The goal of establishing CARAs is to protect the functions and values of a community's drinking water by preventing pollution and maintaining supply.

The GMA defines CARAs as "areas with a critical recharging effect on aquifers used for potable water."

The following steps characterize where groundwater resources are important to the community and how to protect them.

- Identify where groundwater resources are located.
- Analyze the susceptibility of the natural setting where ground water occurs.
- Inventory existing potential sources of groundwater contamination.
- Classify the relative vulnerability of ground water to contamination events.
- Designate areas that are most at risk to contamination events.
- Protect by minimizing activities and conditions that pose contamination risks.
- Ensure that contamination prevention plans and best management practices are followed.
- Manage groundwater withdrawals and recharge impacts to:
  - Maintain availability for drinking water sources.
  - Maintain stream base flow from ground water to support in-stream flows, especially for salmon-bearing streams.



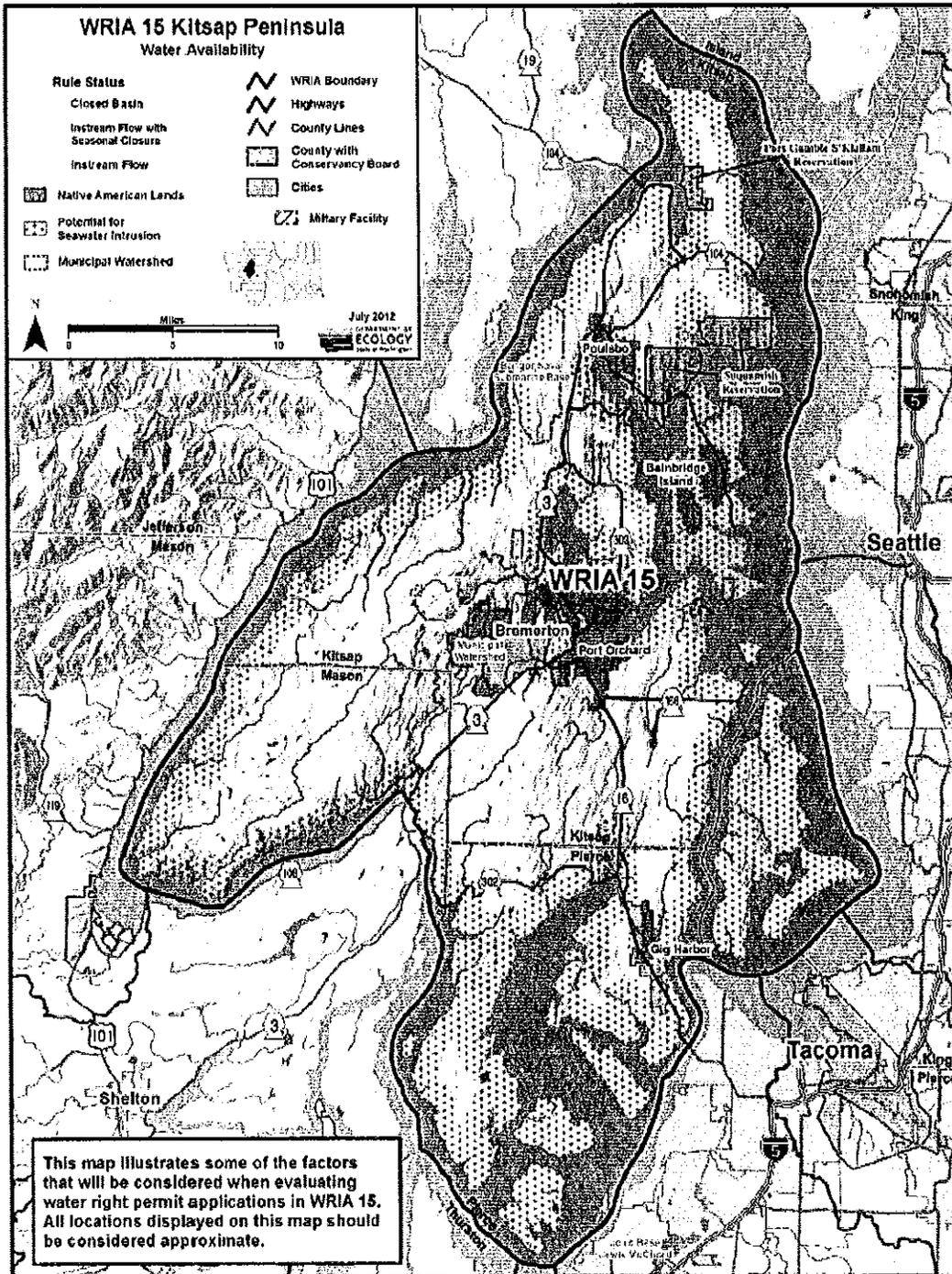
Aquifer Recharge Areas, Assessor website.

### Critical Areas – COBI Ordinance and GIS mapping

#### **Critical Areas**

The GMA requires the designation and protection of “critical areas” to prevent harm to the community from natural hazards and to protect natural resources.

- **Natural hazards** are frequently flooded areas and geologically hazardous areas.
- **Natural resources** are wetlands, fish and wildlife habitat conservation areas, and “areas with a critical recharging effect on aquifers used for potable water,” which are called Critical Aquifer Recharge Areas (CARAs).



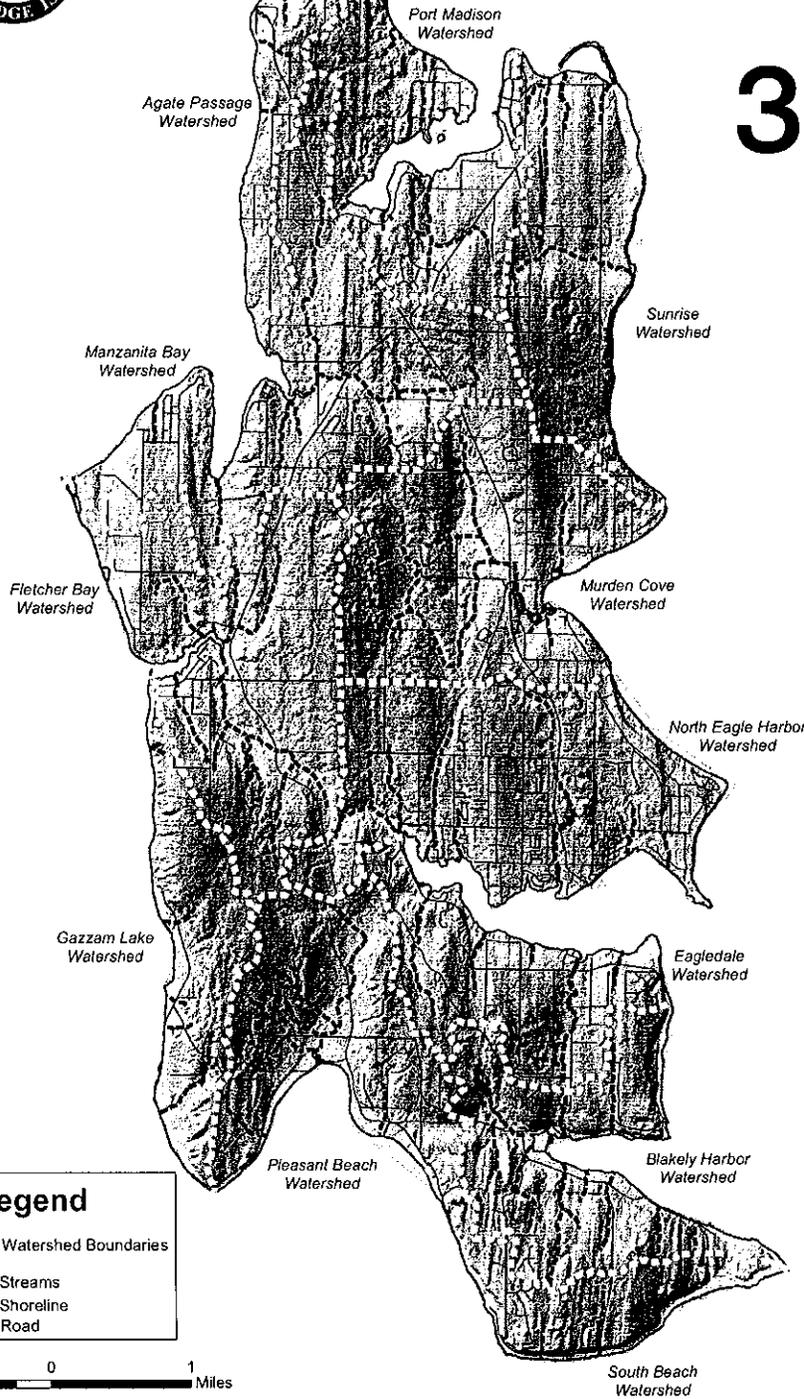
Kitsap WRIA 15, DOE 2012

The entire Island of Bainbridge is mapped as "Potential for Seawater Intrusion."



# Bainbridge Island Watersheds

# 3



**Legend**

- Watershed Boundaries
- Streams
- Shoreline
- Road

1 0.5 0 1 Miles

## Bainbridge Island Department of Ecology Hazardous Sites List

[http://www.ecy.wa.gov/programs/tcp/mtca\\_qen/hazsites.html](http://www.ecy.wa.gov/programs/tcp/mtca_qen/hazsites.html)

#	FS ID	SITE NAME	RANK
1.	2602	Bainbridge Island Vincent Rd Landfill	1
2.	96325489	Chevron 200425	2
3.	23096	Clean Center	2
4.	2611	Day Road Industrial Park	2
5.	151	Eagle Harbor	SF-S
6.	153	Eagle Harbor E	SF-S
7.	154	Eagle Harbor W	SF-F
8.	152	Eagle Harbor Wyckoff	SF-S
9.	3804318	Lynwood Center Corner	2
10.	44882172	Madison Ave S & Parfitt Way SW Site	5
11.	61317581	Norge Equipped Cleaning Village Store	2
12.	15438	Strawberry Plant Park	2
13.	26595127	Tosco BI Island Bulk Plant	2
14.	46126151	UNOCAL 4388 Waypoint Park	2
15.	28682498	Winslow Way W & Madison Ave N	5

SF-S Superfund site; State has lead NW Regional Office

SF-F Superfund site; Federal (EPA) has lead

Updated **DOE Hazardous Sites List** as required by WAC 173-340-3300. Sites on the list have undergone a preliminary study called Site Hazard Assessment (SHA). Ecology uses the Washington Ranking Method (WARM) to estimate the potential threat the site poses, if not cleaned up, to human health and the environment. **Sites are ranked on a scale of one to five. A rank of one represents the highest level of concern relative to other sites, and a rank of five the lowest.**

**Superfund Sites** are polluted locations requiring a long-term response to clean up of hazardous material contaminations designated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. <http://yosemite.epa.gov/R10/CLEANUP.NSF/sites/wyckoff>  
Cleanup Site Search <https://fortress.wa.gov/ecy/gsp/SiteSearchPage.aspx>

**Sole Source Aquifer** In March 2013, EPA designated the Bainbridge Island Aquifer System a sole source aquifer. A sole source aquifer is an underground water supply designated by EPA as the sole or principal source of drinking water for an area. [http://yosemite.epa.gov/R10/water.nsf/Sole+Source+Aquifers/bainbridge\\_ssa](http://yosemite.epa.gov/R10/water.nsf/Sole+Source+Aquifers/bainbridge_ssa)

2013 needs to be updated

RCW 36.70A.550

Aquifer conservation zones.

(1) Any city coterminous with, and comprised only of, an island that relies solely on groundwater aquifers for its potable water source and does not have reasonable access to a potable water source outside its jurisdiction may designate one or more aquifer conservation zones.

Aquifer conservation zones may only be designated for the purpose of conserving and protecting potable water sources.

(2) Aquifer conservation zones may not be considered critical areas under this chapter except to the extent that specific areas located within aquifer conservation zones qualify for critical area designation and have been designated as such under RCW 36.70A.060(2).

(3) Any city may consider whether an area is within an aquifer conservation zone when determining the residential density of that particular area. The residential densities within conservation zones, in combination with other densities of the city, must be sufficient to accommodate projected population growth under RCW 36.70A.110.

(4) Nothing in this section may be construed to modify the population accommodation obligations required of jurisdictions under this chapter.

[2007 c 159 § 1.]