

ENVIRONMENTAL



BAINBRIDGE ISLAND COMPREHENSIVE PLAN ELEMENT 2004 GOALS*

Bainbridge Island has elected to add this as an **optional element**. It is not required by the WA Growth Management Act (GMA). By doing so they have self-imposed a duty and must now act consistently with this element, independent of other state mandated GMA obligations.

GOAL 1: **Preserve and Enhance Bainbridge Islands natural systems, natural beauty, and environmental quality.**

GOAL 2: **Encourage sustainability** in City Government operations.

GOAL 3: **Consider the impact** on critical areas whenever there is a subdivision of land.

GOAL 4: **Encourage sustainable development** that maintains diversity of healthy, functioning ecosystems which are essential for maintaining our quality of life and economic viability into the future.

GOAL 5: **FISH AND WILDLIFE**. Protect and enhance wildlife, fish resources and natural ecosystems on-Island.

GOALS 6- 7: **AQUATIC RESOURCES (WETLANDS, STREAMS, FREQUENTLY FLOOD AREAS)**

- Achieve no net loss of the functions and values of aquatic resources and promote their maintenance, restoration and enhancement.
- Protect the natural functions of frequently flooded areas.

GOAL 8: **SEA LEVEL RISE**. Anticipate and prepare for the consequences of sea level rise.

GOALS 9-10: **GEOLOGICALLY HAZARDOUS AREAS**

- Protect landslide hazard areas and erosion hazard areas from the impacts of use and development for the protection of public safety property and the environment.
- Identify and map areas that are at risk due to seismic activity and regulate activities in these areas for public safety and property protection.

GOAL 11: **AIR QUALITY**. Protect and Promote Clean Air.

GOAL 12: **NOSIE**. Promote the reduction of cumulative noise impacts.

GOAL 13: **GREENHOUSE GASES**. Ensure involvement and input from the citizens at all stages of significant transportation projects and decision-making that reduce greenhouse gas emissions through compliance with federal, state, and regional policies while developing local strategies to reduce emissions further.

GOAL 14: **DARK SKIES**. Preserve and enhance the view of the dark sky by controlling glare and light trespass.

GOAL 15: **INVASIVE SPECIES**. Collaborate to develop and maintain a plan to remove and control invasive plant species, as well as prepare for vulnerability to future invasive plant and animal species.

GOAL 16-19: **GREENWAYS**. Develop and maintain a Greenways Plan for Bainbridge Island.

GOALS 20 – 22: **AGRICULTURAL LANDS**

- Conserve and protect existing agricultural uses and increase the acreage of permanently protected and productive farmland by using preservation methods including incentive-based programs.
- Minimize conflict between agricultural and non-agricultural uses.
- Encourage and support farming as an economically viable option for land use and as a means to providing diversity of lifestyle.

GOALS 23 - 24: **FOREST LANDS**

- Encourage the retention of forest land and multiple-aged forests.
- Retain, conserve and improve portions of the community forests...through public education and management and protection measures that will help to conserve these resources.

GOAL 25: **MINING**. Rigorously control the excavation of sand and gravel and other minerals.

*COBI has undertaken a review of this element. The Goals presented are the draft goals as proposed to the Planning Commission for review and approval as of November 2015.

PLANNING QUESTIONS TO GUIDE EVALUATION OF THE CLIMATE VULNERABILITY OF THE ENVIRONMENTAL ELEMENT:

- If **precipitation** were to increase or decrease would it affect our local environment? How? How do current precipitation patterns affect our environment? What will happen if patterns change?
 - If water recharge set asides or permeability standards are devised will they be sufficient under changing precipitation patterns?
- If average seasonal **temperatures** were to shift would it affect our local environment? How? Are there currently any seasonal/temperature related impacts? Do isolated high-heat or cold days have an effect on our environment? What will happen if patterns change?
- If **sea level** were to rise would it affect our environment? How? How do sea level and associated conditions (high tides, inundation, etc.) affect the Island today?
 - How does sea level affect our coastal zone and near shore environmental resources?
 - Does this have an impact on sanitary sewers, septic systems, and stormwater drainage and how do the proper functioning of all these systems affect the Island's environment?
- Do changing patterns have the potential to affect **critical area and habitat** location and function? Will **natural resource lands and open space** areas be affected?
 - Should we prioritize areas likely to serve as climate refuges for migrating species of flora and fauna (areas likely to maintain more stable conditions over time)?
 - Do we need to look to yet-unprotected or unidentified lands in order to avoid future flooding? To accommodate vegetation and habitat (e.g. wetlands) migration?
- What effects would the Island experience if there are **shifts in vegetation** composition (die-off, migration, new species) in natural areas? Changes in ecosystem function?
 - What effects will be seen on the type and quality of open space and the function of our natural resource lands? Will it matter if these areas change?
 - If a wetland is set aside or restored, will it be wetland in the future? Will areas we protect today hold the same resource values under changed conditions?
- What effects will occur locally as the **growing season changes** (positive and negative)?
 - Crop suitability, including species tolerance, water needs and pests?
- As temperature and precipitation patterns change (more frequent and prolonged drought) the risk of **wildfire** may increase. (Note that Bainbridge experiences vegetation fires every year – according to the BIFD Hazard Vulnerability Assessment from 1989-2009 there were 454 reported vegetation fires.)
 - What actions should be taken now to prepare for this future risk?
 - Is it important to identify vulnerable forests and their interface with developed areas?
- It is likely that today's problems will be exacerbated by future conditions. Can we create a "**watch list**" of locations and infrastructure whose proper functioning affects environmental quality that are likely to become more (or possibly less) problematic?
- Are we supporting and enabling **low impact development techniques and green infrastructure**, which can lessen stress on our natural systems, sufficiently and without unnecessary barriers?
- How is **local air quality** today? Will Bainbridge Island exceed air quality standards in the future, either due to warmer summers resulting in more ground level ozone and the like, or colder winters resulting in greater local fuel use?
- Do the newly proposed **draft GOALS** above give us a clear directive to enact local policy and regulation so that we can adapt to the anticipated impacts of climate change, or should they be further amended?

CLIMATE IMPACT	ENVIRONMENTAL IMPLICATION
<p>Precipitation → <i>changing patterns and extremes, longer duration, and greater intensity</i></p>	<ul style="list-style-type: none"> • Changing patterns have the potential to cause stormwater inundation and localized flooding, chronic flooding, non-infiltrated run off, erosion and landslides, which have the potential to affect the proper functioning of local infrastructure and to degrade water quality and local environments. • Changing patterns and extremes will cause shifts in overall vegetation types and habitats on the Island. • Groundwater recharge may be diminished by flow rates and increased speed of runoff, and further limited by insufficient recharge surface area. • Drought and flood will cause alterations to the wildfire hazard risk. • Floodplain protection may need to increase and current floodplain delineations may become inaccurate. • Changes in seasonal streamflow will affect native fish.
<p>Temperature → <i>more extremes and prolonged summer highs</i></p>	<ul style="list-style-type: none"> • Increases and seasonal changes will increase the frequency and duration of droughts. • Changes in growing seasons affects commercial agriculture and recreational gardening. • Increased demand for water will result from drought, lower flows, etc. • As temperatures increase longer drought periods result increasing wildfire risk (conflicts at the wildland- urban interface). • Thermal stress will affect local habitats, and also local fisheries. • Inland and near shore water quality will diminish as temperatures change, causing hypoxia and harmful algal blooms.
<p>Vegetation changes → <i>shifts will occur in habitat suitability as a factor of changing temperature and precipitation</i></p>	<ul style="list-style-type: none"> • Long-term temperature and precipitation trend changes will cause shifts in vegetation and habitats on the Island. • Changes can occur in buffer and green space conditions due to vegetation shifts. • There is the potential for dead-wood and detritus as die-off occurs which will increase the fuel load and risk for wildfires. • Changes can be seen in flora and fauna habitat suitability, leading to possible loss of some protected or iconic flora. • Agricultural operations and recreational gardeners will need to adapt to changes in crop suitability and species tolerance.
<p>Sea Level Rise → <i>Projected Mean</i> 2030: +2.6 in. (+/- 2.2 in) 2050: +6.5 in. (+/- 4.1 in) 2100: +24.3 in. (+/- 11.5 in)</p>	<ul style="list-style-type: none"> • Coastal zone resources and shoreline stability are likely to be compromised by rising seas. Outright loss of floodplain and other critical habitat area will result from inundation of today's shoreline. • Saltwater intrusion can affect groundwater and drinking water supply of the Island. • Water quality can be affected by saltwater inundation/flooding of sanitary sewer and septic systems. • The efficacy of the Shoreline Management Plan will be affected if it too doesn't adapt to sea level rise. • Alterations to the Island's hydrograph will affect estuaries and streams.
<p>Slope Stability → <i>sea level changes & precipitation patterns will compromise once stable slopes</i></p>	<ul style="list-style-type: none"> • Erosion of slopes can cause loss and damage to critical habitat.
<p>Ocean Acidification → <i>decreasing pH of the waters of Puget Sound</i></p>	<ul style="list-style-type: none"> • Changes will occur in local fisheries.
RELEVANT NON-CLIMATE DATA THAT MAY AFFECT THE GOALS OF THIS ELEMENT	
<p>Population changes → <i>account for anticipated increase or decrease due to climate refugees</i></p>	<ul style="list-style-type: none"> • Increases in Island population will place increased demands and stress upon all environmental resources.
<p>Transportation plans → <i>Vehicle miles traveled is one of the greatest contributors to greenhouse gas emissions</i></p>	<ul style="list-style-type: none"> • Transportation projects and associated development patterns will have a direct role in the Islands' ability to address local greenhouse gas emissions. Vehicle miles traveled will directly impact Island air quality and ground level ozone (see Environmental Goal 13).

