

# CAPITAL FACILITIES



## BAINBRIDGE ISLAND COMPREHENSIVE PLAN ELEMENT 2004 GOALS

### *How does the Plan define a Capital Facility?*

Public facilities and services, including utilities, that are necessary for a government to carry out its functions or to provide services to its citizens – together the capital facilities are known as **infrastructure** (including roads, public buildings, schools, parks, water and sewer systems, fire and police protection, and libraries).

### *Facilities Crossover with other COBI elements*

- COBIs Transportation element deals with capital improvement projects for the infrastructure of roads, bikes trails, and pedestrian walks and trails. This element examines them in conjunction with all public facility needs.
- COBIs Water Resources element addresses goals and policies for drinking water, stormwater management, and sewer and on-site septic, while financial analysis of capital projects relating to those systems are in this element.

### *COBI 2004 Goals*

"The ultimate goal of [this] element is to provide adequate facilities and services to support the growth & development concepts of the Land Use element." (p.4 2004 Plan)

Goal 1 - **Provide high quality, well-maintained public facilities and services that serve the current and future** social, economic, cultural, safety, circulation, and communication needs of the community; that are available at the time of development to serve new growth; are equitably distributed; and are provided with minimal environmental impact.

# UTILITIES

## BAINBRIDGE ISLAND COMPREHENSIVE PLAN ELEMENT 2004 GOALS

Some utilities are not covered within goals and policies of this element. Specifically, water and sewer utilities and stormwater infrastructure are handled within the Water Resources Element.

Goal 1 – Facilitate the **provision of reliable utility service** in a way that balances public concerns over the impacts of utility infrastructure, consumers' interest in paying a fair and reasonable price for utility products, the City's natural environment and the impacts that utility infrastructure may have on it, and the communities desire that utility projects be aesthetically compatible with surrounding land uses.

Goal 2 - Facilitate the development of all utilities to **accommodate the growth that is anticipated** to occur. Additions to and improvement of utility facilities should occur at a time and in a manner sufficient to serve planned growth.

Goal 3 - Process permits and approvals for utility facilities in a **fair and timely manner** and in accord with development regulations.

Goal 4 - When siting all utilities, providers shall **comply with the overall goals of the Comprehensive Plan**, ensuring timely notice and public involvement regarding any future projects.

Goal 5 – The City shall **encourage cooperation** with other jurisdictions in the planning and implementation of multi-jurisdictional utility facility additions, improvements and emergency response.

Goal 6 – Encourage the **joint use** of utility corridors, provided that such joint use is consistent with limitations as may be prescribed by applicable law and prudent utility practice.

Goal 7 - The City shall continue to **implement conservation measures within city-owned facilities**.

Goal 8 – **(Electrical Goals)** Ensure adequate, cost effective and reliable electric service to the citizens of Bainbridge.

Goal 9 - **(Cellular Goals)** Encourage adequate and reliable cellular and/or wireless communication service to the citizens.

## PLANNING QUESTIONS TO GUIDE EVALUATION OF THE CLIMATE VULNERABILITY OF THE CAPITAL FACILITIES AND UTILITIES ELEMENTS:

- If **precipitation patterns** were to increase or decrease (patterns and amounts) how might it impact capital facilities/infrastructure or utilities? How do current precipitation effects infrastructure and the provision of utilities on the Island?
  - What effect would an increase in intensity of rainfall/storminess have on Island infrastructure and utilities?
  - What effect would periods of drought have on island infrastructure and utilities?
  - Are we prepared to respond and recover from infrastructure failures that may result from “storminess”?
- If **average seasonal temperatures** were to shift how might it impact our infrastructure or utilities? Are there currently any seasonal/temperature related impacts?
  - Do isolated high-heat or cold days affect our infrastructure and utilities?
  - Are our capital facilities designed to function efficiently under higher temperature scenarios?
  - Can the community absorb increased costs of heating and cooling?
  - Can we provide adequate energy to meet those needs?
- If **sea level** were to rise how might it impact infrastructure and utilities? How do sea level and associated conditions (high tides, inundation, etc.) impact the Island today?
  - How does current sea level impact our coastal zone and near shore infrastructure and utilities?
  - What community facilities & infrastructure are in places that may experience inundation or storm surge?
- Will **shifts in vegetation** composition (die-off, migration, new species) impact infrastructure and utilities? Discuss how existing vegetation may or may not affect infrastructure and utilities today.
- As temperature and precipitation patterns change (more frequent and prolonged drought) the risk of **wildfire** may increase.
  - What actions should be taken now to prepare for this future risk? Does this involve capital projects and/or increases in public safety infrastructure?
  - Is it important to identify infrastructure and utilities that are located in or near wildfire risk areas?
- It is likely that today’s problems will be exacerbated by future climate conditions?
  - Can we create a “**watch list**” of infrastructure and utilities that already exhibit climate vulnerability?
  - Where are our high hazard/vulnerable areas, and what critical facilities and infrastructure lie within that area? Should this Element link to the generation of a comprehensive vulnerability assessment and a local pre-disaster hazard mitigation plan?
- Do the **2004 GOALS** give a clear directive to enact local policy and regulation so that we can adapt to the anticipated impacts of climate change on Island, or should they be amended?
  - Consider Utilities Goal 7 which has no policies. Do we as a City, want to address *climate mitigation* by changing our local carbon footprint? Are we taking every opportunity we can to conserve energy?
  - Utilities Goal 8 seeks to support cost effective electricity. Climate change may dictate significant cost structure changes that are yet unknown (need to abandon coal/turn to renewables). Consider incorporating a time horizon within this goal that will require looking forward to reasonable and diversified provision of power in the future.
  - Consider goal language that is explicit about requiring new infrastructure and utilities that are designed to function under future climate scenarios (perhaps through building code, design requirements, creating a “climate-secure” certification process).
- Do the **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, should they be further amended, or do we need anything else?

CLIMATE IMPACT	CAPITAL FACILITIES AND UTILITIES IMPLICATIONS
<p><b>Precipitation →</b> <i>changing patterns and extremes, longer duration, and greater intensity</i></p>	<ul style="list-style-type: none"> <li>• Changing patterns have the potential to cause inundation and localized flooding, chronic flooding, non-infiltrated run off, erosion and landslides, which will affect the proper functioning of local infrastructure and the provision of utilities (i.e., more frequent power outages as transmission lines are compromised, structural damage to critical facilities, and infrastructure damages).</li> <li>• Predicted “storminess” includes the potential for more wind storms, which increases the risk of power outages and disruption to the provision of other utilities.</li> <li>• Drought and flood will cause alterations to the wildfire hazard risk, necessitating increases in fire department services and infrastructure and potential costs associated with land management to prevent wildfire.</li> <li>• Sanitary sewers and community/private septic systems will be impacted by both heavy precipitation and low-flow drought events.</li> <li>• New infrastructure may be needed to remedy system failure or capacity (capital projects).</li> </ul>
<p><b>Temperature →</b> <i>more extremes and prolonged summer highs</i></p>	<ul style="list-style-type: none"> <li>• Increases and seasonal changes will increase the frequency and duration of droughts leading to increased demand for water. New infrastructure may be needed to remedy system failure or increase capacity (capital projects).</li> <li>• As temperatures increase and there are longer drought periods there is an increased risk of wildfire, necessitating increases in fire department services and infrastructure and potential costs associated with land management to prevent wildfire.</li> <li>• Longer seasons, hotter hots and colder colds will change energy demand from what it is today and may change the availability of certain types of energy. Additional and differentiated energy sources may be needed and will result in capital projects and costs, as well as new or expanded infrastructure.</li> </ul>
<p><b>Vegetation changes →</b> <i>shifts will occur in habitat suitability as a factor of changing temperature and precipitation</i></p>	<ul style="list-style-type: none"> <li>• Long-term temperature and precipitation trend changes will cause shifts in vegetation and habitats on the Island.</li> <li>• There is the potential for dead-wood and detritus as die-off occurs which will increase the fuel load and risk for wildfires.</li> <li>• Energy demand for heating and cooling will increase if the percentage of tree-cover/canopy changes over time.</li> </ul>
<p><b>Sea Level Rise →</b> <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"> <li>• 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 and low lying areas.</li> <li>• Salt water intrusion can affect groundwater and drinking water supply of the Island.</li> <li>• Water quality can be affected by salt water inundation/flooding of sanitary sewer and septic systems.</li> <li>• The efficacy of the Shoreline Management Plan will be affected if it too doesn’t adapt to sea level rise.</li> <li>• Alterations to the Island’s hydrograph will affect estuaries and streams.</li> </ul>
<p><b>Slope Stability →</b> <i>sea level changes and precipitation patterns will compromise once stable slopes</i></p>	<ul style="list-style-type: none"> <li>• Infrastructure and facilities located on or near slopes may be subject to damage if a slope erodes or gives way.</li> </ul>
<p><b>Ocean Acidification →</b> <i>Decreasing pH of the waters of Puget Sound</i></p>	<ul style="list-style-type: none"> <li>• Ocean acidification may compromise stormwater and sewage discharge compliance. Capital projects may become necessary.</li> </ul>
<b>RELEVANT NON-CLIMATE DATA THAT MAY AFFECT THE GOALS OF THIS ELEMENT</b>	
<p><b>Population changes →</b> <i>account for anticipated increase or decrease due to climate refugees</i></p>	<ul style="list-style-type: none"> <li>• Increases in Island population will place increased demands and stress upon all capital facilities and utilities across the island.</li> </ul>