



CLIMATE CHANGE
ADVISORY COMMITTEE
REGULAR MEETING
WEDNESDAY, OCTOBER 16, 2019
6:30 – 8:30 PM
CITY HALL
COUNCIL CONFERENCE ROOM
280 MADISON AVENUE NORTH
BAINBRIDGE ISLAND, WA 98110

AGENDA

Members: Jens Boemer Lara Hansen David McCaughey (Co-Chair)
 Derik Broekhoff Gary Lagerloef Nora Ferm Nickum
 Michael Cox (Co-Chair) Julie Matthews Deborah Rudnick

Liaison: Joe Deets

6:30 Call meeting to Order/Roll Call/Accept of Modify Agenda/Conflict of Interest Disclosure

6:35 Approve September 18th Minutes

6:40 Public Comment

6:50 Friends of the Farm

7:00 Discussion of Sea Level Rise Analysis (James Rufo-Hill)

7:20 Discussion of Draft Climate Action Plan Sections

- Introduction
- Energy
- Buildings
- Waste and Consumption
- Forests, Agriculture, and Shorelines
- Community Engagement
- Implementation

8:10 Updates

- GHG Inventory (study session November 19th)
- Community Survey (extended to October 28th)
- Community Workshops (need subgroup to organize)
- Climate and Energy Forum (November 9th – Carbon Offsets)
- November meeting date

8:30 Adjourn

Materials

1. Agenda
2. Draft Sea Level Rise Analysis
3. Draft CAP goals
4. Draft Climate Action Plan

CLIMATE CHANGE ADVISORY COMMITTEE

Regular Meeting September 18, 2019

MINUTES

Present: Committee members Jens Boemer, Derik Broekhoff, Michael Cox, Lara Hansen, Gary Lagerloef, David McCaughey, Nora Ferm Nickum, Deborah Rudnick; Council Liaison Joe Deets

Absent: Committee member Julie Matthews

Public: Gloria Saylor, Astrid Clark

Others: Ellen Schroer, Deputy City Manager; Britain Richardson, Cascadia Consulting Group

1. The meeting was called to order at 6:33 pm.
2. Conflict of interest disclosure: Jens Boemer reminded everyone of what he said at the last meeting (everything he says in these meetings is not at all associated with the Electric Power Research Institute where he works; he is only here as a citizen of Bainbridge Island).
3. Minutes from the previous meeting (August 29, 2019) were approved.
4. Public comment
 - Gloria Saylor said she was glad to be here and that the work of this Committee is very important.
 - Astrid Clark said she is here because she cares, she is a scientist with a lot of ideas, and she would like to be involved in efforts to address climate change.
5. Bainbridge Island Climate Impact Assessment
 - We passed a motion to endorse the Bainbridge Island Climate Impact Assessment and ask the City to post it to the CCAC website.
6. GHG Inventory discussion with Cascadia
 - We reviewed our inventory questions with Britain Richardson from Cascadia Consulting Group and agreed on some edits and next steps for completing the GHG inventory report.
7. Updates/Report-outs/Discussion
 - Climate Action Plan goals
 - We will present the draft goals to Council at the same study session where the GHG inventory is presented.
 - Community survey
 - The survey is live. We will be publicizing it widely later this week.
 - Community workshop
 - We are going to postpone the community workshops to December (tentatively Dec. 4, 7, and/or 11) because we want to have the final GHG inventory results available to share.
 - October 1st City Council Study Session
 - Postponed: We currently anticipate that the GHG inventory report will be presented to Council at their Nov. 5 or Nov. 19 study session.

- Draft path to 90% GHG reductions by 2040
 - We discussed a draft document about the cuts in emissions that could be necessary in different sectors in order to add up to our overall goal. It is a useful exercise for helping everyone understand the magnitude of the problem and what will need to happen to make significant emissions reductions.
- PSE is planning to do a pilot community solar project and they are looking for jurisdictions. PSE will put out a Request for Information in early October.
- Deb reported that she met with Friends of the Farm. They are interested coming to one of our Committee meetings to share what they are trying to do. We will invite them to attend our October meeting.
- UAC/CCAC PSE franchise report – David will report on this at the next meeting.
- We will initiate a conversation with PSE about various topics.

8. The meeting was adjourned at 8:43 pm.

Co-Chair

10/16/19

Sea Level Rise on Bainbridge Island

A Preliminary Assessment



Manitou Beach, December 20, 2018, 3:40 pm. Water level: 9.91 ft NAVD88 (12.25 ft MLLW).

*Draft report to the City of Bainbridge Island,
Climate Change Advisory Committee
October 1, 2019*



Acknowledgements

The Climate Change Advisory Committee was established in 2017 by the City Council of Bainbridge Island to take action on climate change and increase the community's resilience (Ordinance no. 2017-13). The Committee's work plans have called for an evaluation of climate impacts, among other adaptation and mitigation actions.

The following document fulfills Action 10.1 in the 2019-20 Draft Work Plan, which specifically calls for an evaluation of the vulnerability of City assets and other infrastructure to the impacts of sea level rise. Identified by the Committee as a high priority action item, this report is also intended to provide a template for subsequent assessments.

The principal author of and photographer for this report is James Rufo Hill, who began the effort while serving on the Climate Change Advisory Committee. It should be noted that this report builds upon the 2016 Bainbridge Island Climate Impacts Assessment, which was written by Lara Hansen, Stacey Nordgren, and Eric Mielbrecht. Finally, generous assistance was provided by City of Bainbridge Island staff, especially Christy Carr and Gretchen Brown. Thank you, all.

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Summary

Among climate change impacts, sea level rise stands out because even if humans stopped emitting greenhouse gases today, global oceans would continue to absorb excess heat, expand, and rise for centuries (Clark et al 2016). Since we are not close to full mitigation, sea level rise is among the more certain impacts—it's not a question of if, but rather when. Given that Bainbridge is an island, we are acutely vulnerable to the phenomenon.

Puget Sound's shoreline has risen by more than 6 inches during the past century (NOAA 2019). Continued global warming is expected to accelerate rising sea levels over the next century and beyond. Central estimates from the best available science (Miller et al 2018) indicate that Bainbridge Island will experience 1 foot of sea level rise by the year 2060, 2.3 feet by 2100, and 3.8 feet by 2150. Projections vary widely according to different emissions scenarios and other factors, but again, each of the above amounts are almost certain to eventually occur everywhere.

This preliminary assessment provides the City of Bainbridge Island with mapping and planning methodologies, a framework for adaptation, and an understanding of its exposure.

Key Findings:

- The majority of City of Bainbridge Island infrastructure is not exposed to sea level rise. A limited number of assets, primarily related to sewer service in and around Eagle Harbor, plus some low-lying streets island-wide, already experience or will soon experience inundation.
- The most significant impact will be to private property owners around the entire island, many of whom currently experience occasional nuisance flooding. Within a few decades, many of these waterfront residences will face severe flooding, and in some cases, permanent inundation. Areas most exposed include Hedley Spit/Point Monroe, Manitou Beach, and Schel Chelb Estuary/Point White Drive.
- Other vulnerable assets include Washington State Ferries (both the terminal and maintenance facility), the Wyckoff Superfund site, Fay Bainbridge Park, and to a lesser extent, the Winslow Wastewater Treatment Plant.
- Accelerated bluff erosion will threaten additional high-bank properties and septic systems, island-wide.
- Increased saltwater intrusion will also stress water resources, especially those adjacent to the coast.

1. Introduction

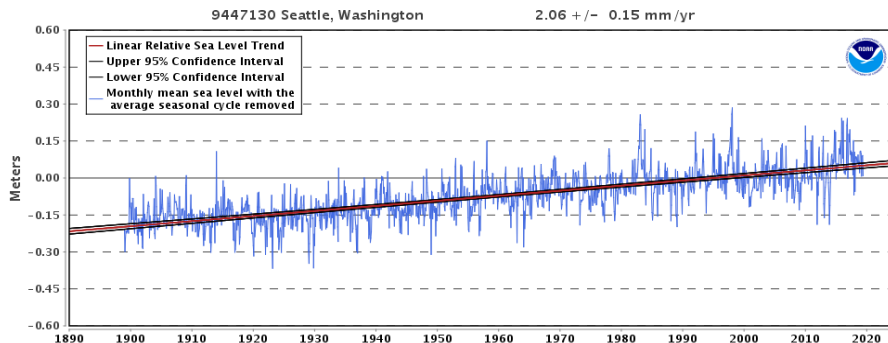
1.1 Sea Level Trends

Sea levels have been rising globally for a century or two, but the heating of oceans and melting of ice has caused sea level rise to accelerate in recent decades. Local water levels have risen steadily since measurements began in 1899. Whereas coastal flooding once rarely occurred on Bainbridge Island, minor inundation, or “nuisance flooding,” has become at least an annual event. Sea level rise is especially apparent each winter during “King Tide” events when gravitational forces acting on Earth are strongest.

Planners globally and locally noticed these trends and have started to act. Around Puget Sound organizations are collaborating to minimize risk. The City of Olympia, which has experienced a rapid increase in flooding events, has developed a detailed adaptation plan. The City of Seattle, The Port of Seattle, and King County are in the process of writing joint sea level rise guidance and policies. The Swinomish Tribe is already monitoring adaptive management practices.

Commented [1]: - Could you provide some text around figure one in section 1.1.
- I think this is important to reference this as the long-term trends and indicate how much it has risen and the confidence intervals around this
- Also suggest you discuss relevance to BI.
- Also might be interesting to have a sentence of two about how people are using this trend data in cities around Puget Sound.

Figure 1: Long-term sea level trend, Colman Dock, Seattle.



Source: https://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?id=9447130

1.2 Sea Level Rise Projections

Changes in sea level will be both absolute and relative. The former refers to the height of the ocean surface in response to global warming. The latter includes local geological, hydrological, and atmospheric effects. For example, the Olympic Mountains are undergoing post-glacial rebound, meaning they are still rising in response to the weight of ice sheets having been removed. Therefore, communities along the Strait of Juan de Fuca are currently experiencing *dropping* sea levels. Eventually, the rate of sea level rise in such locations will surpass rate of rebounding vertical land movement. Absolute projections tend to make splashy headlines, but for planning purposes, relative projections are required.

Commented [2]: Could you provide an e.g., here to give people some idea of what you are referring to .

Figure 2: Projected absolute sea level rise under a high greenhouse gas scenario.

Source: <http://www.wacoastalnetwork.com/files/theme/wcrp/SLR-Report-Miller-et-al-2018.pdf>

Fortunately, over the past few decades there have been a series of studies that account for local, Puget Sound geography. The most recent report, Projected Sea Level Rise for Washington State (Miller et al 2018), represents the best available science. Beyond having updated methods, the report is unique in that it features new probabilistic projections, and it provides community-scale information, including four different, albeit, nearly identical projections for Bainbridge Island.

Considerable uncertainty exists of the rate at which polar ice will contribute to sea level rise. Less uncertainty exists around global emissions scenarios. Despite warnings and policy efforts, humanity has generally followed the path of high greenhouse gas scenarios in recent decades. This report therefore only examines this “business as usual” approach. If we somehow started emitting fewer greenhouse gasses, then lower sea level projections could be considered (Figure 2). Recall, however, that sea level rise will continue for centuries regardless of rate of emissions.

Commented [3]: Could you provide a few sentences about the different scenarios that could be used. Maybe a foot note that explains why people utilize the different scenarios. I think some may ask why did you just use the high GHG scenario.

Central estimates from the best available science indicate that Bainbridge Island will experience 1 foot of sea level rise by the year 2060, 2.3 feet by 2100, and 3.8 feet by 2150 (see Table 1). Those should be considered the “most likely” numbers. One standard deviation greater than the central estimate, i.e. the “high end of the likely range,” projects 5.4 feet of rise by 2150. The “one percent chance” scenario, i.e. rapid ice melt, projects 10.4 feet of rise by 2150. Due to climate dynamics and projected feedback loops, e.g. decreasing albedo effect or darkening of the arctic surface, sea level rise is likely to accelerate over the course of the next century and beyond.

See Table 1 below with complete probabilities, dates, and elevations for Bainbridge Island. Note: similar to how climate is often defined as 30-year average weather, tides are observed and summarized over a 19-year period known as an “epoch,” hence the centering around decades. Also, while there are a plethora of choices, it is recommended that the central estimate, or 50th percentile, be used for planning purposes (see red box below). The probabilities were not calculated in the same fashion as precipitation frequency statistics, for example, and are drawn from a smaller, more subjective sample (Miller et al 2018).

Table 1: Projected average sea level magnitude, in feet, for different assessed likelihoods and time periods (Bainbridge Island).



Source: <http://www.wacoastalnetwork.com/files/theme/wcrp/SLR-Report-Miller-et-al-2018.pdf>

Commented [4]: Could you reference Figure 2 here and indicate these are the projections for BI? Also I would suggest explaining figure 2 and the different bands that you include. For example, why did they pick 1991-2009 as the reference years? Why does SLR accelerate so fast later in the Century?

Commented [5]: This is a great table but I would suggest a few sentences to explain. For example what does the 19 year period centered on then the date? Maybe even highlight the 50% probability.

2. Methods

2.1 Datums

A tidal datum is a standard elevation tied to a certain height or phase of the tide (NOAA 2019). When measuring and planning for sea level rise it is critical that datums and references to elevation remain consistent.

Because of its importance to marine navigation, the most popular datum (e.g., often cited by NOAA) is mean lower-low-water (MLLW). Mean higher-high water (MHHW) is frequently used in sea-level rise literature because of the implied risk associated with “average daily” high tides. Under Washington State’s Public Trust Doctrine, public ownership of tidelands, with some exceptions, begins at extreme low water. Sometimes municipalities use their own references (e.g., King County METRO datum). Land-based surveys, including most Geographic Information systems, use the North American Vertical Datum (NAVD88).

Note tidal datums are updated on a regular basis. NOAA’s National Ocean Service uses a 19-year period (National Tidal Datum Epoch, 1983-2001) as the standard. The epoch is revised every 20-25 years. Certain regions with anomalous sea level changes, including Puget Sound, use a modified epoch; however, this report references the 1983-2001 epoch.

Since this assessment is examining land-based assets, all elevations reference NAVD88 unless otherwise noted.

2.2 Station Datum

The National Oceanic and Atmospheric Administration has been measuring water levels nationally for over a century. When measuring and planning for sea level rise it is critical that the highest quality datums available are used.

There are a handful of official NOAA tide gages in the Central Puget Sound region. The closest to Bainbridge Island exist in Poulsbo, Brownsville, and Bremerton. Each of those gages, however, suffers from incomplete data or relatively short periods of record.

We are fortunate in to have a gage close by with one of the longest periods of record in NOAA’s entire network (Coleman Dock, Seattle). Established on January 1, 1899 NOAA’s Seattle tide gage not only provides quality data, but it puts long-term global climate change and sea level rise into perspective. Furthermore, a comparison of current water levels between all functioning Central Puget Sound tide gages reveals only minor differences in datums (at most, approximately 5 inches).

Given Coleman Dock’s superior data quality and regional consistency, it is used exclusively in this report to reference water levels on Bainbridge Island.

Commented [6]: Maybe just a sentence that Seattle is the closest location where this information is available. We do not have any measurements on BI but we can assume that levels are similar.

2.3 Tidal Datums and Exceedance Probability Levels

As previously mentioned, when measuring and planning for sea level rise it is critical that datums and references to elevation remain consistent. Just as important is an understanding of exceedance probabilities. For example, an asset located near mean lower-low water will almost always be under water. An asset located at mean higher-high water will experience, on average, daily flooding. A “50th percentile” water level should be expected to occur every other year, and so forth.

Locally, Mean Higher-High Water (MHHW), also known as an average daily high tide, measures 9.02 feet NAVD88. An annual extreme water level, or a 99th percentile event, measures 10.50 feet NAVD88. A biennial extreme water level measures 11.29 feet NAVD88, and a “100-year” water level, or 1% event measures 12.20 feet NAVD88.

These distinctions are especially important to consider when viewing maps. Maps can only depict one datum at a time, typically MHHW. A map highlighting 3 feet of sea level rise on Bainbridge at the same time depicts today’s 1% water level.

2.4 Mapping

The first step in assessing sea level rise usually involves mapping, which typically involves manipulating geographic information systems (GIS) to portray future inundation. The most common method in which a single (sea) surface is raised, is referred to as the “bathtub” approach. More sophisticated methods, such as elevation plans or hydraulic grade line analyses, better capture local variability and features. This assessment and report build upon methods developed by NOAA, which they describe as a modified bathtub approach (NOAA 2017).

Figure 5: NOAA Sea Level Rise Viewer.

Source: <https://coast.noaa.gov/slr/#/layer/slr/5/-13641138.69260028/6043609.973720823/13/dark/93/0.8/2050/interHigh/midAccretion>

Fortunately, the resolution and accuracy of web-based GIS maps have advanced in recent years. Initial drafts and related presentations of this report utilized low resolution GIS (Kitsap County Parcel Search and Google Earth). In 2019, NOAA published a Sea Level Rise Viewer (Figure 5) that incorporates the latest digital elevation model (Puget Sound LiDAR Consortium). NOAA's viewer should be used as a first order assessment tool—it only zooms-in so far. It is recommended that City of Bainbridge Island staff utilize full GIS when surveying coastal assets, so that elevations can be assessed at the parcel level or even smaller. That said, a user need not zoom-in to fully understand basic risk. Some areas simply stand out.

What follows are a series of screen captures of Bainbridge Island's most obviously vulnerable areas. Note: a sea level rise of 4 feet was selected for each, which according to the best available science is most likely to occur by 2150. However, the datum depicted by NOAA is mean higher-high water, meaning areas in blue would experience, on average, daily flooding by 2150. Those same areas will experience monthly and annual flooding sooner.

Figure 6: Eagle Harbor

From north to south, notably low-lying areas of Eagle Harbor include beach deposits on Wing Point, Hawley Cove, the modified land that is the Washington State Ferries maintenance facility, the old Strawberry Cannery area, much of the inner harbor, and Pritchard Park and Bill Point.

Commented [7]: I think this needs a little more explaining about what you mean by first order assessment tool. What might be different in results if the City used a full GIS for coastal assets. What is the difference?

Figure 7: Murden Cove, Manitou Beach

Figure 8: Hedley Spit, Port Madison, Hidden Cove

Figure 9: Manzanita Bay, Battle Point

Figure 10: Point White, Lynwood Center, and Pleasant Beach

3. Results

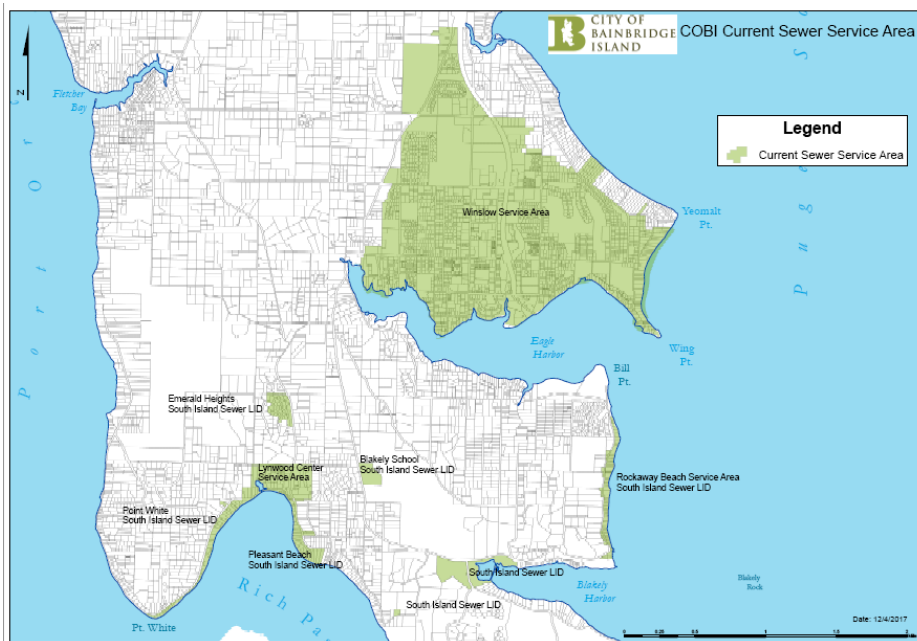
3.1 City of Bainbridge Island Assets and Infrastructure

The City of Bainbridge Island (COBI) owns and manages a relatively limited number of assets in areas exposed to sea level rise. Most obvious are public streets, many of which run adjacent to coastlines or end at the beach. Other exposed assets include City Sewer Service Areas, notably Winslow, Rockaway, South Island, Pleasant Beach, Lynwood Center and Point White.

It is recommended that every COBI asset be listed in a table, then sorted by (“invert”) elevation and then ranked by criticality. The table could then be used as a foundation for a more complete risk assessment.

Commented [8]: I assume you will have more discussion of the results especially as it relates to streets. Also, can you list the assets in a table and then have an assessment of whether they may be impacted?

Figure 11: Sewer Service Areas



Of the City’s 500 “manholes,” approximately 36 are exposed to sea level rise, as are 5 pump stations and 3 force mains. Interviews with City staff indicate that some of these assets are designed to function while submerged.

Figure 12: Winslow Sewer Service Area

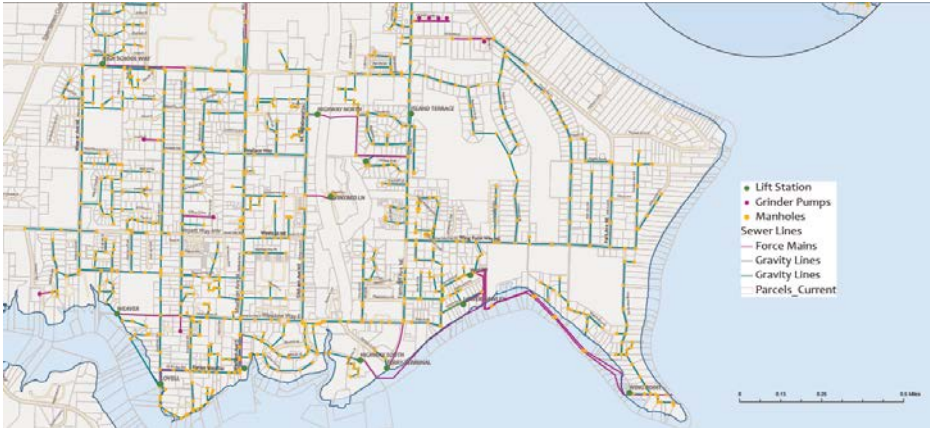


Figure 13: South Island Sewer Service Lines

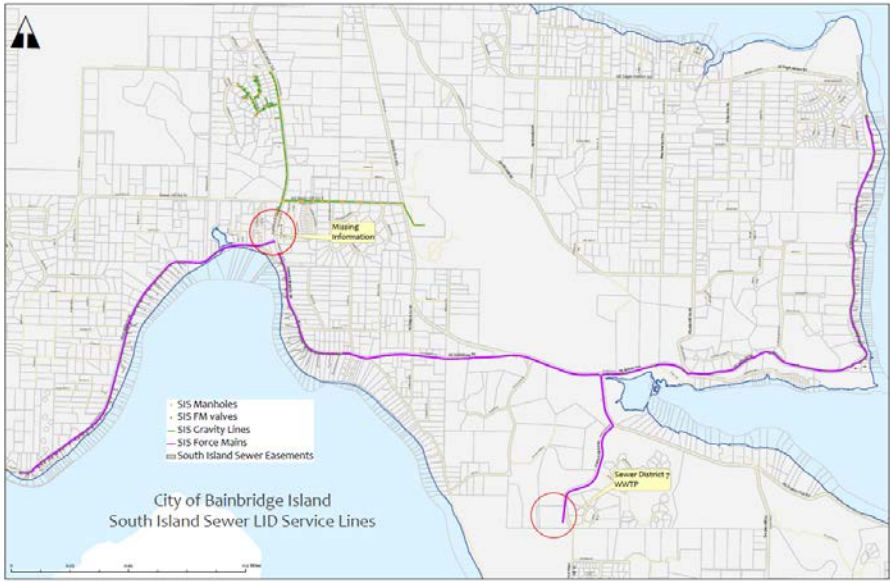


Figure 14: Manitou Beach Drive.



Figure 15: Point Monroe Drive.



Figure 16: Fay Bainbridge Park



4. Discussion

This preliminary assessment attempts to provide an understanding of sea level rise and the ways in which it will impact Bainbridge Island. Puget Sound's shoreline has risen over the past century, and it is certain to rise much more for centuries to come. In some ways, The City of Bainbridge Island is fortunate to have relatively few critical assets exposed. In other ways, it is expressly challenged as a significant portion of the community will be directly impacted. Given this assessment, what follows are some suggested strategies to adapt and increase resilience.

4.1 Adaptation Strategies

Approximately 36 of COBI's 500 "manholes" and three or more force mains are exposed to sea level rise (Figures 12 & 13). Each should be inspected, inventoried, and retrofitted (for example, with locking lids) or replaced if necessary. These inherently resilient assets should be able to function when submerged.

At least 5 lift/pump stations are exposed (Figures 12 & 13). Each should be inspected, and elevations of critical elements (for example, electrical panels) should be recorded. Such facilities can be redesigned, protected with barriers, or eventually be replaced.

A handful of roadways are particularly exposed. Some streets can be closed to motorized traffic in anticipation of broader action. Re-routing arterials may burden some residents; however emergency access can be preserved, and non-motorized access can be increased (which itself is a co-benefit that furthers other COBI climate change goals). Examples include:

Manitou Beach Drive (Figure 14) in the vicinity of the Manitou Beach Open Space area. This route and a few adjacent landward properties already experiences regular flooding. All motorized Rolling Bay and Skiff Point area traffic would be re-routed to Valley Rd.

Point White Drive at Schel Chelb Estuary. All motorized Crystal Springs and Point White area traffic would be re-routed to Baker Hill Rd.

Manzanita Road at Manzanita Bay. All motorized traffic, notably that which uses the arterial to avoid Highway 305, would be re-routed to Day and Miller Rds.

Myriad private properties, coastal and bluff-top, will be impacted. Conventional flood protection such as bulkheads and seawalls will not prevent sea level rise and in some cases may exacerbate the problem. New waterfront construction or re-development, if not prohibited outright, should be guided by prudent shoreline policy.

Sea level rise is a form of displacement. Ultimately, community-wide retreat should be managed by COBI in coordination with regional, state, and federal partners.

5. References

Clark, P.U., Jeremy D. Shakun, Shaun A. Marcott, Alan C. Mix, Michael Eby, Scott Kulp, Anders Levermann, Glenn A. Milne, Patrik L. Pfister, Benjamin D. Santer, Daniel P. Schrag, Susan Solomon, Thomas F. Stocker, Benjamin H. Strauss, Andrew J. Weaver, Ricarda Winkelmann, David Archer, Edouard Bard, Aaron Goldner, Kurt Lambeck, Raymond T. Pierrehumbert & Gian-Kasper Plattner. 2016. Consequences of twenty-first-century policy for multi-millennial climate and sea-level change. *Nature Climate Change* volume 6, pages 360–369.

Miller, I.M., Morgan, H., Mauger, G., Newton, T., Weldon, R., Schmidt, D., Welch, M., Grossman, E. 2018. Projected Sea Level Rise for Washington State – A 2018 Assessment. A collaboration of Washington Sea Grant, University of Washington Climate Impacts Group, University of Oregon, University of Washington, and US Geological Survey. Prepared for the Washington Coastal Resilience Project.

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Noaa.gov. (2017). Detailed Method for Mapping Sea Level Rise Inundation. Retrieved from <https://coast.noaa.gov/data/digitalcoast/pdf/slr-inundation-methods.pdf>

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Bainbridge Island Climate Action Plan: Draft Goals (October 14th, 2019)

We are proposing three goals for the Bainbridge Island Climate Action Plan (CAP).

Mitigation Goal: By 2040 Bainbridge Island shall reduce its greenhouse gas emissions by 90% compared to 2014 levels with interim goals of reducing greenhouse gases by 25% by 2023 and 60% by 2033 compared to 2014 levels

Adaptation Goal: Bainbridge Island shall become climate savvy, and can withstand the impacts of climate change (e.g., sea level rise, warming temperatures, changing precipitation patterns, and changing vegetation).

Community Engagement/Citizen Action Goal: The City of Bainbridge Island encourages timely and measurable action by the community and partners including local and regional organizations to take address climate change mitigation and adaptation in meaningful ways.

The CAP focuses on six areas. Each area will include the following information:

- Sub-goals for each focus area (included below).
- Strategies and actions for mitigation, adaptation, and community engagement/citizen action; and
- Targets and milestones

Energy

- Increase energy conservation and efficiency across all energy sectors
- Eliminate carbon-based energy sources from all three energy sectors (electricity, transportation, heating/cooling)
- Create energy self-sufficiency for emergency preparedness (EP) and resilience in the power sector
- Increase energy infrastructure reliability and resilience in light of changing climate

Transportation and Land-Use

- Reduce motorized vehicle miles traveled
- Increase use of public transportation.
- Increase use of electric cars, bikes, and buses and support development of electric ferries.

Buildings

- For all newly constructed and renovated residential¹, commercial, industrial and municipal buildings: reduce energy use, water consumption, greenhouse gas emissions, and increase reuse and recycling of materials during building construction and operation.

¹ This may include boats docked in one of the Bainbridge Island's ports.

- For all existing residential², commercial, industrial and municipal buildings work with homeowners and partners to: reduce energy use, water consumption, and greenhouse gas emissions.
- Establish procedures to ensure buildings are protected from climate change impacts (e.g., higher precipitation, sea level rise, and temperatures).

Forests, Shorelines, and Agriculture

- Manage Bainbridge Island's forested lands to function as healthy, resilient ecosystems that can continue to provide multiple ecological functions including provision of habitat, maintaining the hydrologic cycle, and storing carbon, and are resilient to climate change.
- Maintain the integrity of our Island's surface and groundwater resources to continue to provide clean and sufficient water for people, wildlife, and all the Island's natural systems.
- Monitor and support our Island's air quality for people, wildlife and flora.
- Manage the City's shoreline assets and infrastructure to adapt to sea level rise.
- Use strategic planning, outreach and education, and other tools to assist homeowners in preparing for and adapting to sea level rise.
- Support an agricultural system that prioritizes local food production, ecosystem services including soil carbon storage, and crops that are resilient to climate change

Waste Reduction and Consumption

- Reduce City, residential, and commercial waste generation.
- Increase diversion of waste from the landfill.
- Optimize collection and disposal systems to minimize GHG emissions.
- Ensure that any new waste-related infrastructure is not sited in current or future hazard areas.

Community Engagement/Citizen Action

- Increase awareness and knowledge of the Bainbridge community about potential climate change related impacts and ways to reduce their individual contributions.
- Inspire action across the community and partners with local and regional organizations to take meaningful climate change mitigation and adaptation actions.
- Empower and prepare the City of Bainbridge and Bainbridge Island residents for climate impacts and emergencies.

² This may include boats docked in one of the Bainbridge Island's ports.

Bainbridge Island Climate Action Plan

Draft Report: Deliberative Document. Do not quote or cite

A Letter from Mayor

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Acknowledgements

Executive Summary

Chapter 1: Introduction

The climate is changing. We know this and we need to take action now. The urgency to dramatically reduce our greenhouse gas emissions and develop system to make our community more resilient from these changes is well documented.

A 2018 report from the Intergovernmental Panel on Climate Change¹ indicated that in order to keep global temperatures below 1.5 degrees Celsius compared to post-industrial levels will require net zero global carbon emissions by 2050. This is also supported by the 4th National Climate Assessment² and many other scientific publications that indicated the impacts of climate change on our communities.

In 2016, the City of Bainbridge Island realized that we needed to do our part to address climate change and incorporated climate change in the updated Bainbridge Island Comprehensive Plan³. The Comprehensive Plan had seven guiding principles one of which was related to climate change specifically (see side bar).

Along with incorporating climate change into the Comprehensive Plan, the City Council established the Climate Change Advisory Committee (CCAC) in the fall of 2017⁴. The CCAC was established to serve as a technical and planning advisory committee to the city council, city manager, and city staff on issues related to climate change. One of the tasks from the City Council to the CCAC was to develop a Climate Action Plan (CAP) for the Island.

In developing the CAP, the CCAC followed the five milestones approach suggested by ICLEI. ICLEI has been working for over 20 years to assist local governments to reduce their emissions of greenhouse gases and prepare communities for the impacts from climate change.

Bainbridge Island Comprehensive Plan
Guiding Principle #7: Reduce greenhouse gas emissions and increase the Island's climate resilience.

Guiding Policy 7.1: Participate with state, regional and local partners to reduce greenhouse gas emissions consistent with the 1990 benchmark and future year targets set forth in state law, educate the public about climate change and incentivize Island activities including land use patterns and building practices that reduce greenhouse gas emissions.

Guiding Policy 7.2: Minimize or ameliorate the impacts of climate change on our community and our Island's ecosystems through climate-informed policies, programs and development regulations.

Guiding Policy 7.3: Evaluate the climate vulnerabilities and implications of City actions and identify policies that alleviate those vulnerabilities. Consider the effects of shifting conditions (sea level rise, changing rainfall patterns, increasing temperatures and more extreme weather events) and the effects they cause (altered vegetation, changing water demands,

¹ IPCC, 2018: Summary for Policymakers. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. <https://www.ipcc.ch/sr15/>

² Fourth National Climate Assessment. Volume 11: Impacts, Risks, and Adaptation in the United States. 2018. <https://nca2018.globalchange.gov/>

³ <https://www.bainbridgewa.gov/162/Comprehensive-Plan>

⁴ <https://www.bainbridgewa.gov/922/Climate-Change-Advisory-Committee>

The five milestones build on their experience as a leader in local emissions management. The five milestones in Figure 1 offers a systematic approach to dealing with climate change⁵.

- Leadership Commitment: The City has shown its commitment to addressing climate change as evident in the updated comprehensive plan, making climate change one of the top priorities for the last several years, and establishing the CCAC. **Figure 1: Milestones for CAP development**
- Milestone 1: A greenhouse gas emissions inventory was completed by Cascadia Consulting Group for the City. The inventory covered both emissions from City operations and the Community as a whole. The results are included in Chapter 2.
- Milestone 2: We established a reduction target for greenhouse gases that is discussed below.
- Milestone 3: The CAP was developed over a 9-month period after significant input from the Community and interaction with the City Council and City Staff.
- Milestone 4: The next step is to implement the actions identified in the CAP. This is discussed in Chapter 4.
- Milestone 5: The evaluation and monitoring of progress is critical to ensure the actions identified are effective in reducing greenhouse gases and preparing the Island for the impacts of climate change.



1.1 Updated Bainbridge Island Climate Impact Assessment

LARA TO PROVIDE

1.2 Results from Community Survey and Workshop

As part of developing the CAP, the CCAC conducted a survey to help inform the CCAC about Bainbridge Island residents' existing knowledge about local impacts from climate change, their level of concern, and their willingness to support local action by the city and broader community. The CCAC considered the responses from the survey when developing the CAP.

⁵ <http://iclei.usa.org/programs/emissions-management/5-milestones/>

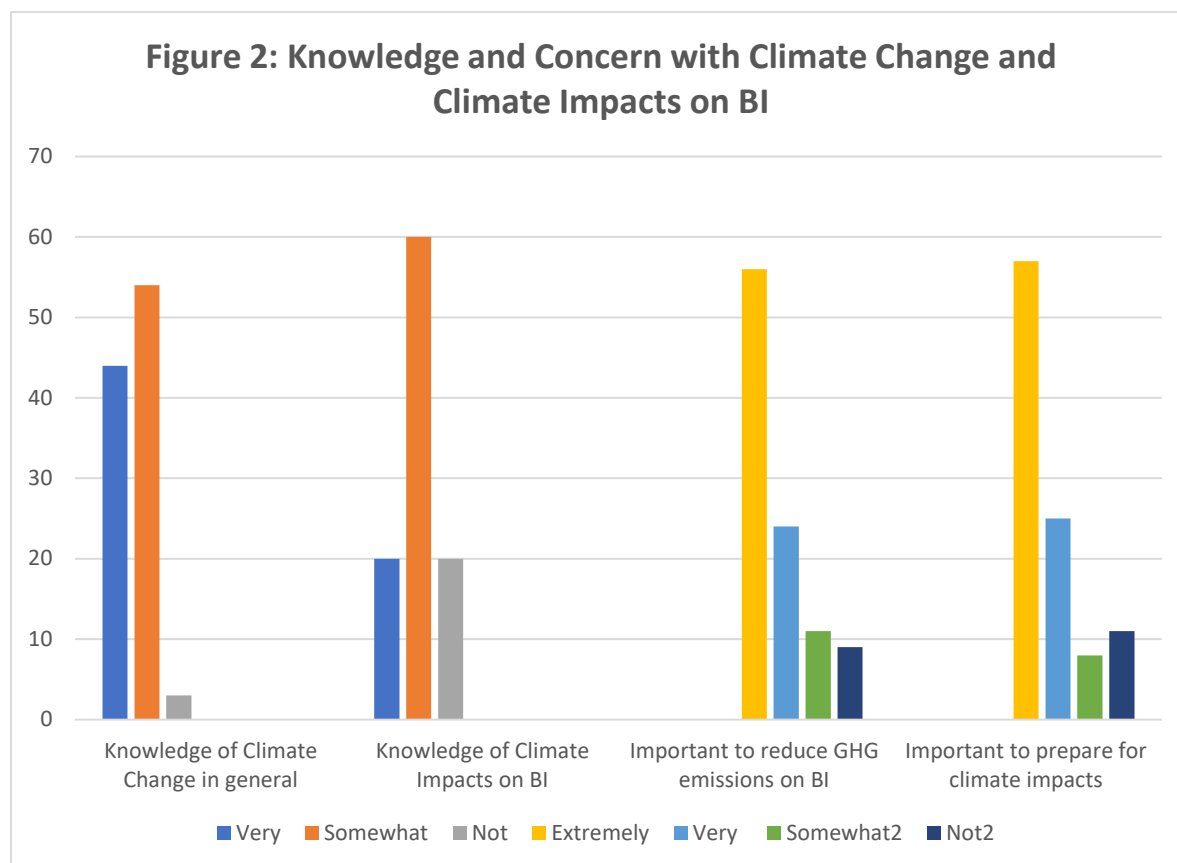
There were 310 responses to the Survey (as of October 8th 2019). The demographics of the respondents are included in Table 1.

Table 1: Demographics of Respondents to Community Climate Survey

Age Distribution	Gender	Area of Island	Kids at Home
Under 18: <1 18-34: 4% 35-54: 25% 55-64: 27% 65+: 44%	Female: 62% Male 32% Other: 6%	North: 26% Central: 48% South: 24% Off Island: 2%	Yes: 27% No: 73%

Table 1 indicates the respondents were generally older, female, from the Central part of the Island and they have no kids at home.

Figures 2 provides results for people's knowledge about climate change and the impacts on Bainbridge Island.



The majority of people are knowledgeable about climate change and the impacts on Bainbridge Island. In addition, a majority of people believe it is important to reduce greenhouse gas emissions and prepare the Island from climate impacts. However, there are about 20 percent of

people who believe it is somewhat or not important to address greenhouse emissions and prepare the Island for the impacts of climate change.

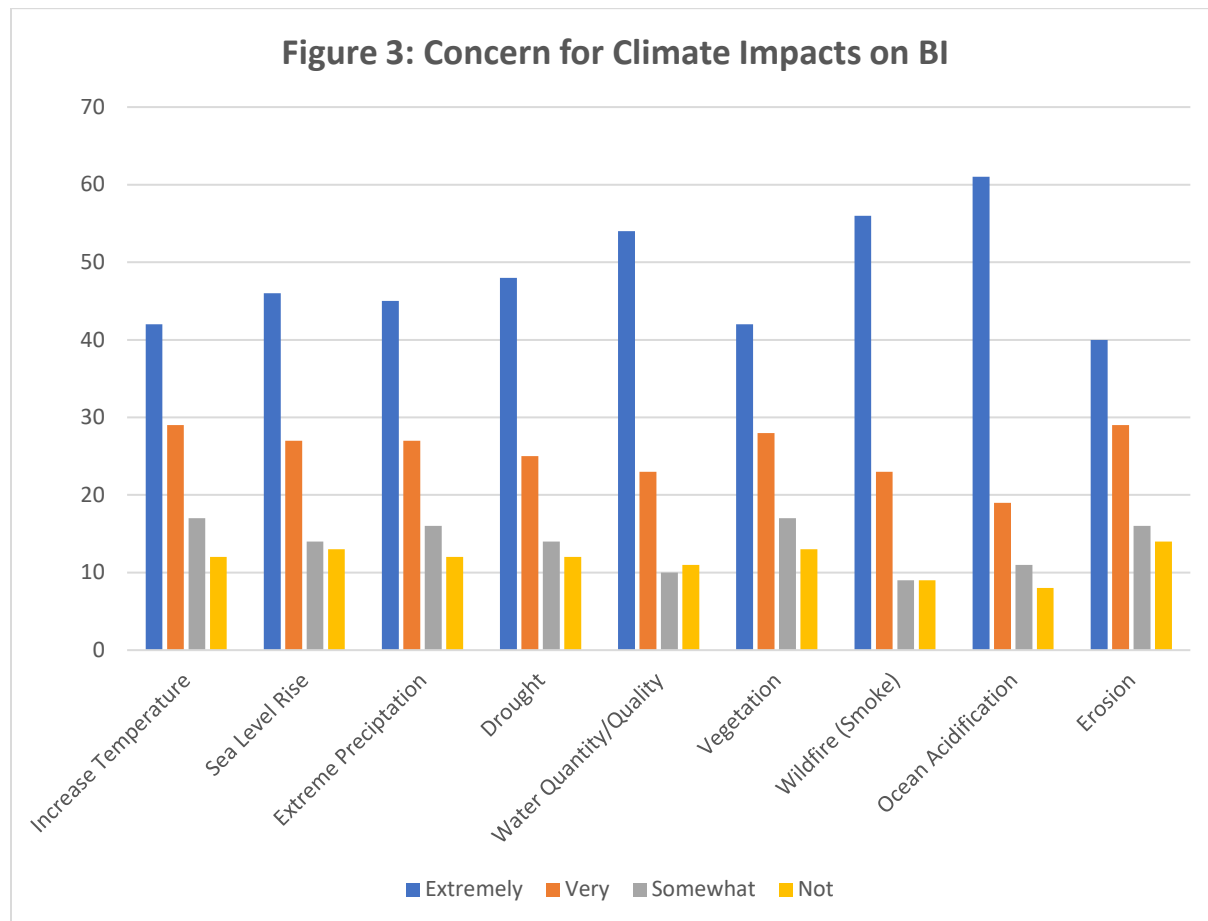


Figure 3 indicates that over 70% of people were either extremely or very concerned about all the impacts in the survey. Over 81 percent of people were either extremely concerned or very concerned from wildfires and the attended issues with smoke.

In addition to the Survey, the CCAC hosted two Community Workshops: one on Saturday December 7th and one on Wednesday December 11th. The purpose of the workshops was to provide participants a chance to learn about the climate impacts on Bainbridge Island and provide input into the CAP. Some of the highlights from the Workshops included below. A summary of the workshops is included in Appendix A.

1.3 Why develop a Climate Action Plan?

The CAP is a comprehensive roadmap that outlines the specific activities that the City and Community can undertake to reduce greenhouse gas emissions and increase our resilience to the changes that are occurring now and will increase in the future.

The CAP builds upon the Island's Comprehensive Plan, the Bainbridge Island Climate Impact Assessment⁶ developed for the Comprehensive Plan (summarized above), a greenhouse gas emissions inventory (summarized in section 2.0) developed by Cascadia Consulting⁷, and community input.

1.4 Goals for Climate Action Plan

Through this Plan, the City hopes to achieve three overarching goals:

- Reduce Bainbridge Island contribution to climate change by reducing community greenhouse gas emissions (mitigation)
- Prepare our Island to be more resilient to climate change impacts (adaptation);
- Engage the community to take action on climate change and prioritize those most impacted and ensure the cost and benefits of climate mitigation and adaption are equally distributed (community engagement and citizen action).

BI Climate Action Plan Goals

Mitigation Goal: By 2040 Bainbridge Island will reduce its greenhouse gas emissions by 90% compared to 2014 levels with interim goals of reducing greenhouse gases by 25% by 2023 and 60% by 2033 compared to 2014 levels

Adaptation Goal: Bainbridge Island is climate savvy, and can withstand the impacts of climate change (e.g., sea level rise, warming temperatures, changing precipitation patterns, and changing vegetation).

Community Engagement/Citizen Action Goal: The City of Bainbridge Island inspires action across the community and partners with local and regional organizations to take meaningful climate change mitigation and adaptation actions.

In addition to the overarching goals, the CAP provides the important actions that City officials and staff, as well as Bainbridge Island residents and businesses, need to take to reduce GHG emissions to do our part in the global effort to address climate change.

1.5 Organization of CAP

The CAP provides a comprehensive roadmap that outlines the specific activities that the City and Community can undertake to reduce greenhouse gas emissions and increase our resilience to the changes that are occurring now and will increase in the future.

Chapter 1 provides the updated results from the Bainbridge Island Climate Change Assessment (BICIA) and the results from a Community Survey and Workshop conducted to support the development of the CAP.

⁶ <https://www.cakex.org/documents/bainbridge-island-climate-impact-assessment>

⁷ TBD

Chapter 2 provides the results from the GHG emissions inventory conducted by Cascadia Consulting Group for the City of Bainbridge Island. Chapter 3 provides the specific strategies, actions, and targets in six focus areas. Chapter 4 provides a roadmap of needed actions for implementing the CAP.

The CAP begins with a summary of the findings from the 2019 greenhouse gas emissions inventory. The remainder of the CAP is organized around six main focus areas.

Each focus area provides the following information:

- Goals
- Challenges to meeting those goals.
- Current actions the City and Community are doing to achieve those goals.
- Strategies and actions the City and Community need to take to meet the goals.
- Targets and benchmarks for assessing progress.
- Timeline for how long it will take to complete the actions and the interim milestones.
- The Department lead and staff in the City.
- Role of CCAC and others

Six Focus Areas

- Energy
- Transportation and Land-Use
- Buildings
- Forests, Shorelines, and Agriculture
- Waste Reduction and Consumption
- Community Engagement and Citizen Action

The final chapter details the steps the City and community will take to ensure successful CAP implementation.

1.6 Federal, State, and Local Climate Policy

In December 2015, all but two countries in the world signed on to the Paris Climate Agreement to limit global warming to less than two degrees Celsius (3.6 degrees F) above pre-industrial levels, and to stop the rise of greenhouse gas emissions as quickly as possible.

However, on June 1, 2017, President Trump removed the United States federal government from the Paris Climate Agreement and is seeking to nullify the obligation to contribute aid to other less developed countries. When this policy takes effect in 2020, the U.S. will be the only world government not participating in the Paris Agreement, since the original two holdouts, Syria and Nicaragua, joined in November of 2017.

Responding to the President's announcement withdrawing the federal government from the Paris Agreement, dozens of cities, states, and U.S. corporations have joined the "We Are Still In"⁸ campaign, including Bainbridge Island, declaring their continued commitment to meeting the reduction goals of the Paris Agreement.

U.S. greenhouse gas emissions fell almost 16% between 2000 and 2016 until 2018 when emissions increased about 3%. A Federal Climate Action Plan was developed during the Obama Administration, that put in place rules and policies to cut carbon emissions, prepare for climate change impacts, and lead international climate protection efforts. The Trump Administration has been working to overturn many of the rules and policies put in place during the Obama Administration.

Bainbridge Island: Recent Climate Related City resolutions, policy's and plans

- National Drive Electric Week 2019 (Proclamation)
- Supporting Green New Deal (Resolution 2019-14)
- Endorsing Clean Air Energy Initiative 1631 (2018-27)
- Supporting a carbon pricing policy for Washington State (Resolution 2017-04)
- Establishing a Climate Change Advisory Committee (Ordinance 2017-03)
- Affirming Support for Paris Climate Agreement (Resolution 2017-20).
- Integrated climate change into 2016 Comprehensive Plan

Given these setbacks to federal climate policy, city and state governments along with major U.S. corporations are now leading U.S. efforts to reduce emissions and prevent catastrophic climate change. Washington State enacted several measures during the 2019 legislative session to reduce greenhouse gas emissions from energy generation, put in place incentives for electric cars, provided resources to electrify the States ferry fleet, required higher efficiency standards for appliances, and phased out the very potent greenhouse gases, hydrofluorocarbons⁹.

The City of Bainbridge Island has passed several resolutions and ordinances over the past several years in support of climate change and as discussed above integrated climate change into its Comprehensive Plan and established the Climate Change Advisory Committee.

The development of the CAP is an important milestone on the path to reducing greenhouse gas emissions and preparing our Island for the impacts of climate change. However, the hard work starts now to implement the recommendations in the CAP. This will require hard decisions on priorities and identifying the funding to develop and implement the critical actions needed.

⁸ <https://www.wearestillin.com>

⁹ <https://www.governor.wa.gov/issues/issues/energy-environment>

We envision the CAP to be a living document that will be modified over time to adapt to the changing funding options and situations for the City and Community. However, we believe it is critical that Bainbridge Island does its part in combatting climate change.

If not here, where.

Chapter 2: Bainbridge Island Greenhouse Gas Emissions Inventory

2.1 Overview

2.2 Results

2.3 GHG emissions reduction targets with interim milestones

2.4 Monitor and Track Progress

Chapter 3: Strategies and Actions

3.1: Energy

Goals

- A. Increase energy conservation and efficiency across all energy sectors
- B. Eliminate carbon-based energy sources from all three energy sectors (electricity, transportation, heating/cooling)
- C. Create energy self-sufficiency for emergency preparedness (EP) and resilience in the power sector
- D. Increase energy infrastructure reliability and resilience in light of changing climate

Challenges

- The existing infrastructure of the building stock is poorly energy efficient and furthermore uses carbon-based energy resources for heating and cooling, and its lifetime of this stock outstretches the timeline for needed carbon-reduction retrofits.
- The existing auto stock uses primarily carbon-based fuels and little electric vehicle charging infrastructure exists on the island; the lifetime of autos is closer to the timeline for needed carbon-reduction switchovers.
- The island community's susceptibility to a significant weather or natural disaster event is increasing with climate change and the emergency preparedness and infrastructure's resilience is still weak.
- Partnerships between the community and the suppliers of all energy sources are still nascent.

Current Actions

- PSE's voluntary renewable electric energy programs Solar Choice, Green Power, and Customer Connected Solar.
- City Hall's community solar system
- PSE's efforts to increase reliability by undergrounding overhead lines in risk corridors and by [ADD NEW PSE BAINBRIDGE ISLAND INITIATIVE GOAL HERE]
- Interest in local bio digestion of food waste, spirit/brewing high BOD to generate energy
- Horse biodigester pilot – Pub/PSE proof of concept
- Recent energy efficiency improvements to Wastewater Treatment Plant (WWTP) operations

Strategies

Goal A. Increase energy conservation and efficiency across energy sectors

Strategy A.1. Promote energy efficiency through existing and new funded COBI programs

High priority actions

1. Role model in City projects, to use high-performance retrofit technologies

2. Convert city automotive fleet to be electrified
3. Create a matrix of incentives to building owners within the permitting process

Strategy A.2. Establish a Bainbridge Island Energy Efficiency & Green Energy Fund

High priority actions

1. Create a new fund to partly collect diverted Solar Choice and Green Power fees
2. Develop an energy efficiency and green energy program to distribute funds as incentives to building owners, residents and businesses, and automotive drivers
3. Develop a feedback scoring system to award points for deeper energy savings

Goal B. Eliminate carbon-based energy sources from all three energy sectors

Strategy B.1. Partner with Energy Providers and local businesses

High priority actions

1. Work with PSE and local banks/credit unions to create local renewable energy (RE) sources, for example community solar, urban wind power, and ocean energy
2. Partner with PSE, Exxon and other gasoline providers for electric vehicle fast charging stations at strategic locations¹⁰
3. Create a local cargo e-bike subsidy that encourages island residents to run errands by cargo e-bike instead of by car¹¹

Strategy B.2. Partner with neighboring and indigenous communities

High priority actions

1. Develop and hold trainings for Kitsap County contractors that can help Bainbridge Island to implement the proposed energy switchover
2. Collaborate with indigenous communities to learn about more sufficient-living practices over efficient living styles

Goal C. Create energy self-sufficiency for emergency preparedness (EP) and resilience in the power sector

Strategy C.1. Create microgrid for critical infrastructure within community energy resources

¹⁰ for example, at the island's two existing gas stations and the two major grocery stores Town & Country and Safeway

¹¹ Cargo e-bikes can be one means to reduce the use of cars to run errands and encourage a healthier lifestyle of island's residents. Combined with new bike lines that increase riders' safety and a free set of rain gear, cargo e-bikes can overcome the two primary obstacles that prevent islanders from riding bikes, our hills and our weather, and they are a more cost-effective option than a local subsidy on electric vehicles. <https://nacto.org/wp-content/uploads/2012/02/E-bikes-and-Transportation-Policy-Insights-from-Early-Adopters-Dill-et-al-12-4621.pdf>. <https://www.outsideonline.com/2399731/to-save-environment-subsidize-e-bikes>

High priority actions

- Develop microgrids for community EP centers (City Hall, Seniors Center, BI Schools, Island Wood).
- Ferry Terminal and additional resiliency for the island
- Investigate partnerships with adjacent communities to COBI (Suquamish, Kitsap, Brownsville, Manchester, Silverdale)

Goal D. Increase energy infrastructure reliability and resilience in light of changing climate

Strategy D.1. Large scale neighborhood microgrids with distributed energy resources

High priority actions

- Develop large scale neighborhoods microgrids with customer-based storage
- Develop large scale neighborhoods microgrids with utility-scale energy storage
- Undergrounding all major electric infrastructure corridors on the island

Targets/Benchmarks:

- 2019 GHG report for energy metrics – electricity, transportation, cooling /heating
- PSE source mix of non-carbon based kWhs
- 2019 Propane as the primary source of building heating
- 2019 ICE vehicles vs. EV vehicles
- 2019 Green Power funds vs. COBI fund to incentivize the uptake of alternate EE technologies

Timeline:

- Annual comparisons of all three energy sources that embody carbon
 - Electricity
 - Propane
 - Transportation (COBI and private) unleaded/diesel
 - Off road energy supplies (tractors, lawnmowers, weed eaters, etc.)

	Expected	Benchmark	Target 2025	Target 2030	Target 2035
	Trend	2019 GHG Report	X GHG Report	X+5 GHG Report	X+10 GHG Report
PSE Non-Carbon kW%		41% (59% Coal, NG)			
kWh, kWh per capita					
Green Power (PSE) funds \$ & Per Capita					
Propane Volume Total & Per capita					

Fuel Oil Volume Total & Per capita					
Estimated EV adoption vs. total registered vehicles					
COBI EE funds \$ & Per capita					

City Lead:

- PW Director
- Communications lead
- Councilmembers (as they wish) – to be role models of the incentives of for alternative technologies in retro-fits

CCAC Action:

- Advisory role to city government/staff and council
- Support and education to the community and neighborhood groups
- Continue to track propane volumes YOY to determine reduction on primary heating energy

Individual Action:

- Take on the goal of individual/community energy resilience
- Adopt a one EV per household to reduce the transportation carbon footprint
- Accept the new code requirements and suggest deeper levels of EE in retro and new construction of buildings

3.2 Transportation and Land Use

3.3 Buildings

Buildings are large energy users: for Bainbridge Island it is estimated about 53% of greenhouse gas emissions can be attributed to buildings. Additional environmental impacts include contaminated storm water generated by continued creation of hard surfaces, and burdens on existing landfill space from construction and demolition debris. Green building techniques, coupled with upgrades and proper maintenance of existing buildings, can help reduce these impacts. In addition, many of these changes may increase vulnerability to the Island's housing stock and make it more difficult to provide affordable housing.

Goals

- A. For all newly constructed and renovated residential¹², commercial, industrial and municipal buildings: reduce energy use, water consumption, greenhouse gas emissions, and increase reuse and recycling of materials during building construction and operation.
- B. For all existing residential¹³, commercial, industrial and municipal buildings work with homeowners and partners to: reduce energy use, water consumption, and greenhouse gas emissions.
- C. Establish procedures to ensure buildings are protected from climate change impacts (e.g., higher precipitation, sea level rise, and temperatures).

Challenges

- Lack of familiarity with green building programs and certification approaches from both residents and builders.
- Lack of information on the cost effectiveness of adopting green building standards including all electric buildings.
- Challenges with greater upfront costs being viewed as a lost cost instead of an investment.
- Lack of familiarity with green materials used in green building.

Current Actions

Municipal

- The Comprehensive Plan highlights need to develop and implement a green building code. The City plans to initiate discussions of a potential green building code in late 2019.
- The City has a Green Team that is working to implement green practices for all municipal operations.

BI Comprehensive Plan: Buildings

EC 3.1: Encourage use of green building materials and techniques in all types of construction, as well as design approaches that are responsive to changing conditions.

EC 6.3: Develop urban design strategies to ensure that the built environment is appropriate for present and future conditions, including the impacts of climate change.

EN 10.4: Ensure beneficial indoor air quality in all renovations and new construction of City-owned facilities

U 14.5: New taxpayer-funded buildings shall use carbon-neutral energy for heating, cooling, and operational use to the maximum extent practical.

¹² This may include boats docked in one of the Bainbridge Island's ports.

¹³ This may include boats docked in one of the Bainbridge Island's ports.

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- The City Council has identified green building as one of its top priorities.
- The City installed solar panels for generating power on City Hall.

Community

- Several buildings on Bainbridge Island are certified as LEED Gold or better and are part of the Living Building Challenge.
- PSE provides free home energy audits and some rebates for energy sources switchovers¹⁴.

Strategies/Actions

Goal A. For all newly constructed and renovated municipal, residential¹⁵, commercial, and industrial buildings: reduce energy use, water consumption, greenhouse gas emissions, and increase reuse and recycling of materials during building construction and operation.

Strategy A.1: For all new and renovated municipal buildings¹⁶, City adopts green building practices and standards, such as the Living Building Challenge.

High priority actions

- Evaluate, identify, adopt, and require appropriate green building practices and standards for all new and renovated municipal buildings.
- Require that all new and renovated municipal be all electric.
- Adopt requirement for a comprehensive cost/benefit analysis for all new municipal and renovated municipal buildings.

Other Actions

- Establish a Green Building team within the City

Strategy A.2: For all new and renovated residential, commercial, and industrial buildings, City adopts green building practices and standards.

High priority actions

- Establish a Green Building Community Task Force to develop green building standards and practices for the Island which would consider at a minimum the following:
 - Require all new and renovated buildings to adopt green building standards and practices and be all electric;

¹⁴ <https://www.pse.com/rebates/home-energy-assessment>
<https://www.pse.com/rebates>

¹⁵ This may include boats docked in one of the Bainbridge Island's ports.

¹⁶ This includes all municipal buildings, municipally financed construction/modernization, and buildings the municipality rents.

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- Develop incentives to encourage to builders to adopt green building standards and for building owners to transition from combustion equipment to be all electric buildings;
- Amend the City's land use and development codes to implement green building codes and adapt to climate impacts;
- Upgrade building code to require "solar + storage readiness" of new buildings that have sufficient solar exposure
- Change building code for all new construction and major renovations to include electric vehicle readiness: and
- Develop incentives for the use of reused and recycled building materials and techniques in all types of construction.

Other actions:

- Provide education and outreach to developers and contractors on use of reused and recycled materials.
- Offer targeted training to Island and neighboring communities' architects, landscape architects, builders, and related construction professionals.
- Establish an energy fund with savings from energy upgrading to finance upcoming projects.
- Work with PSE to create new incentive/rebate programs, including customers that do not use electricity for heating/cooling prior to energy conversion

Strategy A3: For all affordable housing, incorporate green building standards

High priority actions:

- Work with the affordable housing task force and design review board to develop guidelines for green affordable housing.
- Provided green design assistance for affordable housing projects.

Other actions:

- Establish an energy fund with savings from energy upgrading to finance affordable housing projects.
- Explore using Washington States Evergreen Sustainable Development Program for the development of green affordable housing.

Goal A Targets: The different building types are required to adopt green building standards and practices as adopt by the City as follows:

- By 2021, all new and renovated municipal buildings;
 - By 2025, all new and renovated residential, commercial and industrial buildings.
 - By 2030, all new affordable housing.
-

Goal B: For all existing residential¹⁷, commercial, industrial and municipal buildings work to: reduce energy use, water consumption, and greenhouse gas emissions.

Strategy B.1. Increase collaboration and outreach activities to building community and home owners to prompt reduction in energy use, water consumption, and greenhouse gas emissions.

High priority actions:

- Work with the BI School District, BI Parks Department, and Fire and Police to ensure any new buildings are built to the highest green building standards.
- Join the Regional Code Collaborative to leverage economies of scale in developing and updating green codes.
- Provide incentives for existing building owners to transition from combustion equipment to all electric buildings.
- Work with PSE to expand homeowner energy efficiency workshops and other energy efficiency outreach.
- Develop a robust marketing/outreach/educational programs to provide technical assistance, that includes the cost/benefit of green building and the health benefits from green buildings to occupants.

Other actions:

- Establish an energy fund with savings from energy upgrading to finance upcoming projects.
- Host a community workshop with other communities of comparable environmental and socio-economic characteristics to learn from their green building programs.
- Offer targeted training to city employees, trade workers, architects, landscape architects, consultants, and builders.

Goal B Targets: By 2035, all existing residential¹⁸, commercial, industrial and municipal buildings are required to be all electric.

Goal C. Establish procedures to ensure buildings are protected from climate change impacts (e.g., higher precipitation, sea level rise, and temperatures).

Strategy C.1: Increase robustness and resilience of buildings from climate change impacts.

High priority actions

- Host community workshops on climate impacts, how they might impact buildings, and how to prepare buildings from these impacts.

Other actions

¹⁷ This may include boats docked in one of the Bainbridge Island's ports.

¹⁸ This may include boats docked in one of the Bainbridge Island's ports.

Strategy C.2: Incorporate climate change into City emergency preparedness programs.

High priority actions

- City works with climate change advisory committee and others to develop materials to include in their emergency preparedness outreach.
- Work with PSE and others to develop neighborhood microgrids with local generation and storage.

Other actions

Goal C Target: By 2021, the City will have incorporated climate change into its emergency preparedness programs.

3.4 Forests, Shorelines, and Agriculture

Managing the diverse natural resources of our Island under climate change means many different things. COBI's Comprehensive Plan identifies the importance of continuing to protect our open spaces and environmentally sensitive areas, and also affirms that climate change will bring both directional change and uncertainty to many of these resources. The goals and policies COBI and other landowners and managers use to protect and sustain these landscapes will also need to shift accordingly.

(CROSS LINKED TABLE OF Comp Plan objectives that match this chapter)

Goals

1. Manage Bainbridge Island's forested lands to function as healthy, resilient ecosystems that can continue to provide multiple ecological functions including provision of habitat, maintaining the hydrologic cycle, and storing carbon, and are resilient to climate change.
2. Maintain the integrity of our Island's surface and groundwater resources to continue to provide clean and sufficient water for people, wildlife, and all the Island's natural systems.
3. Monitor and support our Island's air quality for people, wildlife and flora.
4. Manage the City's shoreline assets and infrastructure to adapt to sea level rise.
5. Use strategic planning, outreach and education, and other tools to assist homeowners in preparing for and adapting to sea level rise.
6. Support an agricultural system that prioritizes local food production, ecosystem services including soil carbon storage, and crops that are resilient to climate change

Challenges:

Bainbridge Island is an ecologically diverse Island shaped by its long-term pre-glacial and glacial geologic history, its more recent post-glacial ecological history, as well as its more recent human influences. Overlaying climate change on these already complex systems is a real challenge to the stewardship of the health of our natural resources and landscapes.

Bainbridge contains 53 miles of heterogeneous shoreline with a wide variety of historic and current human use. Approximately half of the shoreline of Bainbridge Island has some form of human-made armoring, and the vast majority of the shoreline is developed to some extent for human use. Managing the shoreline for human use and ecological health is a challenge even without the added layer of climate change and its impacts including sea level rise, habitat loss, erosion, risk to infrastructure, ocean acidification, and changes to the shoreline vegetative community.

Bainbridge has a complex array of surface water and groundwater resources that are sensitive to the impacts climate change will bring. Our small streams, many of which are seasonal, are likely to experience greater extremes in hydrology and runoff, with longer dry periods and higher stormwater flows. Species like salmonids that are already stressed by many local and

regional factors will face additional challenges as more extreme conditions cause habitat loss and changes to the timing and return of flows in our small streams and wetlands.

Bainbridge Island is a sole source aquifer community, with the vast majority of its water coming from precipitation that falls on the Island's surface and infiltrates into the ground. Human development is already substantially altering groundwater resources, by changing the permeability of our surfaces and runoff patterns, and withdrawing groundwater from multiple Island aquifers, in some cases at rates that are greater than rates of replenishment. Climate change will layer additional challenges on our groundwater resources, including the likelihood that more extreme precipitation events will increase runoff and decrease recharge relative to recent and current patterns; dryer summer periods will add stress particularly on shallow groundwater sources; and sea level rise will increase the possibility of saltwater intrusion into the edges of our sea level aquifers.

Bainbridge's forest communities have a substantive history of human modification tied to the timber and shipbuilding industries which deforested much of the Island, followed by agricultural activities which maintained cleared and plowed areas of land for decades, many of which have been reseeded or reclaimed by young, and in some cases overstocked, forest. Bainbridge forested lands can be viewed currently as a patchwork of private ownership, and public or stewarded ownership by stakeholders including the City, the Parks Department, and the Land Trust. Finding a coherent path forward to manage this wide variety of ownership is no small task, especially in the face of climate change impacts that include increased wildfire risk and risk of forest pathogens, and climate-driven changes in forest community composition. Managing forest health will require substantive cooperation, stewardship, outreach and education to ensure that our vegetated communities continue to provide their essential ecological functions that include habitat, stormwater regulation, and air quality, as well as aesthetic and recreational functions.

Bainbridge has a long, rich tradition of harvest and agriculture on and around the Island from the first European arrivals, and prior and concurrent use by Salish peoples harvesting camas, shellfish, salmon and other resources. The current agricultural landscape is a relatively small but diverse mosaic of public farmlands, private vineyards, pastures and farms, community pea patches and backyard gardens. But Bainbridge also has rapidly rising land and home prices and we will need as a community to be proactive and creative if we want to continue to support what Friends of the Farms refers to as "Community Food Systems" - where networks of food production and consumption function as an intact system growing on and feeding our Island community. Climate change can be expected to influence and challenge very fundamental aspects of agricultural systems including water availability, growing seasons, and soil health.

Current Actions:

- Nonprofit landowners and managers: Bainbridge Island Metropolitan Parks and Recreation District (BIMPRD), and Bainbridge Island Land Trust (BILT) are two of the largest owners and managers of forests, wetlands, and open spaces of the Island. BILT

protects nearly 1400 acres on the Island through a variety of conservation easements and direct ownership and the park district owns and manages more than 1500 acres, over 90% of which is open space. Both entities recognize the importance of climate change and the likelihood that its impacts will bring changes and increased risks of damage to natural resources that need to be proactively managed. BILT is actively pursuing identification of climate risks in its conservation easements and owned lands, and is working with multiple entities on the Island and throughout the region to understand how to manage their easements and properties under climate change.

- City-owned open spaces including public farmland: NEED INFO
- Community Resources for education and stewardship: Bainbridge Island is very fortunate to have access to a wide range of groups that are committed to education and active stewardship that are and will be essential to our ability as an Island to prepare our natural resources for climate change. Both BILT and BIMPRD have active volunteer and paid teen programs that help with invasive species removal, native planting, monitoring and other activities to protect and restore the health of our ecological communities. Additional community entities that are important partners in communication and stewardship of natural and agricultural resources include Master Gardeners, Fruit Club, Sustainable Bainbridge, Kitsap Conservation District, and Friends of the Farms. All of these groups should be considered important partners that can help our community to steward natural and agricultural resources under climate change.

Strategies:

1. Comprehensive Natural Resource Management
 - a. Strategy A: Manage Bainbridge Island's natural areas for multiple ecological functions including air quality, water quality, wildlife habitat, and carbon storage/emissions reductions
High Priority Actions:
 1. Ensure that the City and stakeholders are using the most comprehensive and recent data and information about natural resources in decision-making (Policy EN 1.5) including
 - a. Sea Level Rise data and mapping
 - b. Streams and wetlands information (eg, Wild Fish Conservancy Stream Typing Data, Fish Culvert Passability data)
 - c. BICIA data
 - d. Tree health data
2. Forested Lands:

- a. Strategy B: Proactively manage Bainbridge forests for community forest compositional shifts expected under climate change
High Priority Actions:
 - 1.
 - 2.
- b. Strategy C: Mitigate wildfire risk through proactive forest management
High Priority Actions:
 - 1.
 - 2.
- 3. The hydrologic cycle: Streams, wetlands and groundwater
 - a. Strategy A: Protecting sensitive water resources and hydrology under climate change
 - i. Protecting headwater wetlands
 - ii. Buffering against extreme precipitation events
 - iii. Green design for stormwater management and surface flow
 - b. Strategy B: Improving conservation of water by Islanders to better deal with increased variability of water recharge
 - c. Strategy C: Update water quality monitoring to incorporate climate change sensitive parameters
- 3. Shorelines
 - a. Strategy A: Adapting shoreline infrastructure and assets to climate change
 - i. Responding to Sea Level Rise: City Assets
 - ii. Responding to Sea Level Rise: Private property and other stakeholders
 - iii. Facing ocean acidification and implications for shellfish resources
 - d. Strategy B: Preparing for and responding to changes in Geologically Hazardous Areas under climate change
 - i. Updating GHA mapping with SLR data and implications for planning and development
 - ii. Managing increased extreme precipitation events
 - iii. Intersections with forest composition
 - e. Strategy C: managing shellfish, seagrass and other coastal resources under ocean acidification
 - f. Strategy D: managing shoreline species under changing ocean temperatures
- 4. Agricultural Lands
 - a. Strategy A: Carbon storage and other soil and crop management to reduce emissions/increase buffering to climate change impacts

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- b. Strategy B: Managing our agricultural landscape to be resilient to climate change (e.g., water conservation, limiting use of pesticides and fertilizer, climate appropriate crops)
- c. Strategy C: Manure management to reduce emissions from livestock

Comprehensive Plan Goals and Policies relevant to this chapter:

Goal	Policy
EN-1: Environment Preserve and enhance Bainbridge Island’s natural systems, natural beauty and environmental quality	EN 1.1: A primary goal of the Comprehensive Plan is protecting the Island’s natural environmental; land use decisions implement this goal.
	EN 1.2: Critical areas must be developed in observance of several principles including in policy.
	EN 1.3: Protect and enhance the natural systems and environmental quality of Bainbridge Island by continuing to build cooperative relationships between the City, citizens, landowners and other public, non-profit and private organizations.
	EN 1.4: Maintain and enhance natural systems and protect wildlife, fish resources and open spaces through land use plans and development patterns including tree retention and planting.
	EN 1.5: Create and maintain overlay maps that show the location of agricultural lands, critical aquifer recharge areas, geologically hazardous areas, floodplains, streams, wetlands and fish and wildlife. Integrate the maps from the BI Climate Impact Assessment.
	EN 1.8: Consider the potential impacts of climate change and its impacts in all decisions related to natural systems and environmental quality.
EN-2: Sustainability	EN 2.2: Seek to minimize the quantity and toxicity of materials used and waste generated for City facilities and

Encourage sustainability in City Government operations	operations through reduction, reuse and recycling. Use products made from recycled materials when available.
	EN 2.3: Use new technologies to reduce environmental impacts such as solar panels, electric and hybrid vehicles, high-efficiency lights and heating systems.
EN-5: Fish and Wildlife Protect and enhance wildlife, fish resources and ecosystems.	EN 5.10: Consider climate change and its impacts in all decisions related to wildlife, fish resources and natural systems.
EN-7: Seal Level Rise Anticipate and prepare for the consequences of sea level rise.	EN 7.1: Consider the implications of sea level rise in all relevant decision-making by using regional sea level rise projections and shoreline instability maps (as provided by the WA Department of Ecology and utilized and interpreted with the Bainbridge Island Climate Impact Assessment).
	EN 7.2: Coordinate with Tribal, Federal, State and local agencies to address issues related to sea level rise.
EN-10: Protect and promote clean air These policies address the need for clean air to protect the Island's residents and ecosystems, under current and future climatological conditions. For example, increasing regional air temperatures are increasing air pollution components such as ground level ozone and smog.	EN 10.1: Promote land use patterns and transportation policies that ensure that the Island's contribution to regional air quality is consistent with or better than State and Federal standards.
	EN 10.2: Encourage the retention of existing trees and vegetation and the planting of new trees and vegetation that provides natural filtration of suspended particulate matter, removes carbon dioxide and improves air quality
	EN 10.4: Cooperate with the Puget Sound Clean Air Agency in providing information to the community about available and innovative emission controls for residential, commercial, vehicular and light industrial use.
	EN 10.5: Ensure beneficial indoor air quality in all renovations and new construction of City-owned facilities

	and promote design choices that enhance beneficial indoor air quality in private construction.
	EN 10.6: Reduce the quantity of airborne particulates through regulations for dust abatement of construction sites and street sweeping programs in areas with concentrations of both vehicular and pedestrian traffic.
	EN 10.8: Encourage the retrofit or replacement of non-certified wood stoves with certified appliances.
	EN 10.9: Transportation and energy production diminish air quality when power is produced with fossil fuel combustion. Maintain and improve Island air quality, by promoting the development of carbon free infrastructure.
EN-14: Invasive Species Collaborate with the Kitsap County Noxious Weed Board and other relevant agencies and organizations to develop and maintain a plan to remove and control invasive plant and animal species, as well as prepare for vulnerability to future invasive plant and animal species resulting from climate change and international commerce.	No specific policies.
EN-18: Forests Encourage the retention of forest land and multiple-aged forests since healthy forests provide many ecological benefits to all forms of life on the Island and help mitigate climate change .	No specific policies.

WR-1: General Water Resources Manage the water resources of the Island in ways that preserve, protect, maintain, and where possible restore and enhance their ecological and hydrologic function.	WR 1.1: Study future climate and demand scenarios to accurately plan for future water resource conditions.
WR-3: Surface Water Protection Achieve no net loss of ecological functions and processes necessary to sustain aquatic resources including loss that may result from cumulative impacts over time.	WR 3.11 Consider the impacts of climate change and ocean acidification 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.
WR-6: Public Education and Outreach The City in conjunction with partners will continue to improve and implement comprehensive public education and outreach program to promote protection and management of all water resources.	WR 6.1: Educate and inform the public about (many items including): - Expected climate change impacts and how these will affect the Island's water resources and their beneficial uses.

3.5 Waste Reduction and Consumption

Goals:

- A. Reduce island waste generation
- B. Increase diversion of waste from the landfill
- C. Optimize collection and disposal systems to minimize GHG emissions
- D. Ensure that any new waste-related infrastructure is not sited in current or future hazard areas.

Challenges: *What are the challenges to meeting those goals?*

There has arguably never been more urgency around the need to reduce our collective waste footprint for many reasons, including the climate impacts of transporting and landfilling our waste; the land use impacts of landfilling; the substantial problem of food waste wherein 40% of food grown in the US is not consumed but wasted along the entire pathway from producer to consumer; and the substantive impacts of the production, landfilling and improper release into our environment of single-use plastics.

Unfortunately, layered on this urgency are real and large-scale challenges for waste reduction. Un-recyclable packaging and overabundance of disposable plastics is a massive, global problem. The US recycling market is facing severe challenges in terms of tightening restrictions on what can be accepted overseas, undermining the markets for recyclable materials and causing real strains on waste management. Domestically, we are not prepared for the flood of materials that do not have places to go, and these very large issues translate down to direct impacts on our local community that include a glut of non-recyclable, fossil-fuel based materials, increases in recycling costs for all of us, and reduction in what materials can even be accepted for recycling locally.

On top of these broader challenges, we face specific challenges in waste reduction as a small Island community in Puget Sound. Our solid waste is trucked and shipped by rail to eastern Oregon, which represents a large carbon footprint in terms of both transportation and landfilling. The vast majority of our green waste is trucked off Island to Pierce County. Although we don't have a firm grasp on quantities, we know we do not even capture for composting a substantial portion of our green waste (particularly food and compostable materials) that is generated from residential, commercial and agricultural activities. There are some real infrastructural barriers to overcome in addressing these issues: for example, we do not have a system set up to service commercial food waste for businesses, and doing so presents some real challenges with access and infrastructure. But these challenges also represent an opportunity to achieve meaningful emissions reductions and environmental impacts if we can find ways to reduce the amount of materials that are sent to landfill, divert more waste to compost and reduce the transportation footprint of green waste.

Current Actions: *What actions is COBI or Community already taking to help achieve the goals?*

Municipal

- **COBI sustainable procurement plan** approved (have to buy sustainable alternative if price is comparable).
- COBI has **oversight staff in each department** to check on internal composting and recycling within the facility.

Community:

- **Bainbridge Island Disposal (BID) Green Waste Service:** *The public has an option to purchase residential green waste services through BID, which allows for composting of both green and food waste (NB that there are restrictions on the types of compostable materials such as plant-based plastics that can be accepted that are not well understood by the public)*
- **Bainbridge Island School District (BISD):** *in the past few years, BISD has formed a district green team to address waste reduction and conservation. This entity has worked with district-wide and campus policies to pursue changes including the elimination of disposable flatware at many schools; the implementation of additional recycling waste streams including plastic film, highlighters and markers; and 3-bin compost/recycle/landfill with educational programs and monitoring at multiple campuses. These efforts are underway and there is still substantial work to be accomplished.*
- **Bainbridge Island Zero Waste (ZW):** *ZW is a program of Sustainable Bainbridge, a nonprofit. Its volunteers undertake a wide variety of efforts including education and waste sorting at major community events, Styrofoam recycling events twice a year at Bay Hay and Feed, a lending library of dinnerware and other items available for free to the public to reduce the use of disposable dishware, and the Drink like you live here campaign to reduce disposable coffee cup use.*
- **The Bainbridge Island Rotary Auction in Rummage sale:** *In addition to being a major fundraiser for scholarships and community and international programs, the Rotary auction can reasonably be called one of the largest reuse and recycle events on the Island, not only because of all the materials that are re-sold for reuse, but also because the Rotary Green Team works tirelessly to reduce landfill waste through proper recycling and through partnerships with dozens of nonprofits to take materials that might otherwise go to landfill.*

Kitsap County Waste Reduction Resources: *The county is charged with education outreach for all of Kitsap County, including Bainbridge. Resources include:*

- *fliers and corrugated posters (for posting at outdoor multifamily residences) that BID gives out, though this past year BID created their own fliers for the transfer station and commercial recycling.*
- *Provides ZW with outreach materials as requested, including fliers, corrugated posters, compost buckets, bags*
- *Hosts a "What Do I Do with It" page with recycling and reuse information (<http://recycle.kitsapgov.com/Pages/Home.aspx>)*
- *Citizens can subscribe to Kitsap County Recycling and Garbage News emails.*
- *Diane Landry of ZW is the City's rep on the Kitsap County Solid Waste Advisory Committee and as such serves as a liaison for our community to that entity.*

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- *Eirik O'Neal is a resource and waste reduction specialist who will come speak to any Island group, and has spoken at multiple City and nonprofit events.*

Strategies

Goal A. Reduce Island waste generation

Strategy A.1. Promote sustainable consumption within City operations

High priority actions

- a. Enforce the City's sustainable procurement policy - assign an auditing function.
- b. Centralize purchasing within the City to increase consistent adherence to sustainable procurement policy.

Other actions

- c. Install hydration stations in all municipal and park facilities to allow refills of reusable water bottles.

Strategy A.2 Promote sustainable consumption in the community

High priority actions

- a. Ordinance to reduce the use of single-use plastic food serviceware

Other actions

- b. Consider a small grants program to support BI Zero Waste and similar efforts to provide community services that reduce the use of single-use plastics, i.e., through lending libraries, consumer education, etc.
- c. Support continuing efforts by Bainbridge Island School District to reduce disposable materials in the school district.
- d. Support efforts to make hydration stations available throughout the community.

Strategy A.3. Reduce food waste in the community

Priority actions:

- a. Support connectivity of community with Helpline House and other local food banks to promote opportunities for viable food to get to those who need it.
- b. Work with partnering organizations such as Kitsap Harvest to increase gleaning activities at private and public farmlands.

Other actions

- c. Support education and outreach to community on the importance of food waste reduction at a household level.
- d. Provide small grants to ZW to partner with community/youth/sports groups that can volunteer to do waste diversion efforts at community events.

Goal B. Increase diversion of waste from the landfill

Strategy B.1. Increase composting within City facilities.

High priority actions

- a. Put compost bins in all meeting rooms in COBI facilities

Strategy B.2 Expand residential and commercial composting participation.

- a. Work with Bainbridge Disposal to offer weekly instead of biweekly curbside compost pickup for commercial facilities.
- b. Require that all food service businesses participate in curbside composting.

Other actions

- c. Facilitate and support education and outreach to consumers about green waste options and what materials are acceptable for composting.
- d. Recognize/award businesses that are taking voluntary and meaningful steps to reduce their waste (e.g., composting).

Strategy B.3 Increase the collection and diversion of construction and demolition waste

High priority actions

- a. Study ways to require and incentivize the collection and diversion of construction and demolition waste.

Goal C. Optimize collection and disposal systems to minimize GHG emissions

Strategy C.1 Reduce emissions associated with disposal of WWTP biosolids

High priority actions

- a. Evaluate options for reducing the emissions associated with disposal of Wastewater Treatment Plant biosolids; for example, through the use of on-site anaerobic digester; through selection of vendors that can find more local application of biosolids.

Strategy C.2 Reduce emissions associated with off-island transportation of green waste.

- a. Evaluate and support where appropriate opportunities to build infrastructure for on-island or more local processing of green waste.

Goal D. Ensure that any new waste-related infrastructure is not sited in current or future hazard areas.

Strategy D.1 Apply the Climate Change Adaptation Certification to any new waste-related infrastructure projects.

Action number	Description	Adaptation, mitigation, or both	City lead (department or responsible staff)	CCAC role (if any)	Potential partners	Timeframe (short-term, long-term)	Targets or benchmarks for assessing progress
A.2.a	Ordinance to reduce the use of single-use plastic food serviceware	M	Council		BIZW	Short-term	Draft ordinance by spring 2020, passed by summer 2020

Individual Action: Provide a separate page of ideas and as a handout.

3.6 Community Engagement and Citizen Action

Goals:

1. Increase the Bainbridge community's awareness and knowledge about potential climate change related impacts and ways to reduce their individual contributions.
2. Inspire action across the community and partner with local and regional organizations to take meaningful climate change mitigation and adaptation actions.
3. Empower and prepare the City of Bainbridge, and Bainbridge Island residents, for climate impacts and emergencies.

Challenges: *What are the challenges to meeting those goals?*

Addressing climate change impacts and preparing for mitigation or adaption often requires nonspecific long-range effort without immediately seen results. There still is skepticism from some people that climate change needs addressing. People feel like their individual actions don't really make a difference. Lack of City funding to support CCAC efforts – materials for outreach, dedicated staff support etc. Addressing climate change in a meaningful way requires coordination and support from entities outside of the City control (WSF, PSE, WDOT,...) and also is somewhat dependent on the state and national level conversations about climate change.

Current Actions: *What actions are COBI or Community already taking to help achieve the goals?*

- Creation of the CCAC was a great first step.
- City Council recognizes the need to give serious attention to climate change issues, City Council identifies CC as a high priority area, agreed with Paris Accord, green power plan....- what else has the City endorsed or supported?
- There are a number of existing community groups recognizing the need to address climate change (Climate Action Bainbridge, Sustainable Bainbridge...
- Existing groups provide regular educational forums

Strategies

1. **Goal A.** Increase the Bainbridge community's awareness and knowledge about potential climate change related impacts and ways to reduce their individual contributions.

Strategy A.1. Provide educational materials/information

High priority actions

4. Develop Climate Change specific webpage on the City's website
5. Make CAP widely available in on line and in print formats (copies at the library along with GHG inventory, Sea Level Rise analysis...)
6. Some of the action items from other focus groups

Other actions

7. Actively support educational forums and opportunities provided by other community groups
8. Action 5.

Strategy A.2. Increase community knowledgeable of how to reduce individual impact

High priority actions

4. Many of the same items as above but focus on individual action to reduce impact rather than educate about the basics of climate change
5. Incorporate from other focus areas
6. Include a climate change tip of the [month] as a regular feature in the COBI Connects newsletter.

Other actions

7. Action 4.
8. Action 5

Goal B. Inspire action across the community and partner with local and regional organizations to take meaningful climate change mitigation and adaptation actions

Strategy B.1. COBI partners with local and regional organizations.

High priority actions

4. Island Collaboration: The City works collaboratively with and actively supports work by existing community groups to disseminate information. City Council encourages improved coordination/collaboration with other City advisory committees and Bainbridge Island taxing entities.
5. Regional Collaboration: The City in works cooperatively with and participates in regional climate change efforts, such as sharing best practices and lessons learned.
6. .

Other actions

4. Include actions from other focus areas

Goal C. Empower and prepare the City of Bainbridge, and Bainbridge Island residents, for climate impacts and emergencies.

Strategy C.1. Ensure the City and community are empowered and have the necessary authority and capability/capacity

High Priority Actions

1. Review existing laws, regulations and policies- Are they adequate to require or at least encourage GHG reductions from City endorsed activities as well as from individual activities? Do they provide sufficient authority/flexibility to respond to impacts and emergencies? Revise as appropriate.
2. Include Climate Change related expenditures for education, mitigation and adaptation in the City budget.
3. Incorporate actions from other focus areas

Other Actions

7. Action 4

Strategy C.2.

High Priority Actions: Establish programs or networks to ensure the City and community are prepared to quickly adapt to climate change impacts

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1. Include potential climate change impact scenarios in Emergency Preparedness workshops.
2. Provide links to climate mitigation/adaptation resources on the COBI/CCAC website.
3. Incorporate from other focus areas

Other Actions

9. Action 4

Chapter 4: Implementation

This section describes the steps that will be taken to ensure that this CAP is successfully implemented and that the community is regularly informed about progress toward CAP goals.

4.1 Kickstarting implementation

In the first year after CAP adoption, the City will put in place critical foundational elements for CAP implementation and begin to implement the highest-priority actions with available resources. Specifically, no later than January 30, 2021, the City will:

- Confirm a City staff person to liaise with the CCAC.
- Identify a City staff person in each department who will provide information to the City Manager, City Council, and CCAC on timelines for completing actions and report on progress on CAP actions led by that department.
- Develop cost estimates for the highest priority CAP actions and staffing requirements and list potential funding sources.
- Include a description in the City Manager's proposed budget of existing and proposed projects that relate to CAP strategies and actions.

4.2 Leadership

Successful CAP implementation will require strong, long-term commitments from the City Council, ongoing operation of the CCAC, and community support for climate action.

The Bainbridge Island City Council has oversight responsibility for this CAP. They need to make policy decisions and budget decisions that advance CAP implementation and review updates on CAP progress.

As directed by the City Council, the CCAC will provide ongoing assistance to the Council and actively participate in Plan implementation by:

- Monitoring and tracking progress towards meeting CAP goals.
- Making recommendations to Council on policies that further the goals of the CAP.
- Developing a brief CAP progress report each year, in collaboration with the City, to assess the effectiveness of CAP implementation and making recommendations to Council.
- Supporting—and in some cases leading—public engagement efforts.

The City Manager will actively support the Council's climate commitment by requiring the involvement of all City divisions, as needed and appropriate, in CAP implementation and requiring consideration of mitigation and adaptation goals when doing budgeting, strategic planning, and work planning.

4.3 Equity

The City Council, City Manager, City departments, and CCAC will all be responsible for considering the potential for unforeseen and/or unequitable impacts to members of our island

community from the implementation of CAP strategies and actions. All will be responsible for identifying ways to address or reduce any such impacts or burdens should they arise.

City staff will work to involve diverse community voices from the start of any new initiative. Engagement efforts will include meaningful actions aimed at informing and being informed by community members from all income levels, races and ethnicities, political persuasions, genders, age groups, and neighborhoods.

4.4 Accountability, reporting, and future updates

The City will update the municipal and community greenhouse gas inventories at least every 3 years. The hope is that this can be done through a partnership with the Bainbridge Island School District and the involvement of local high school students. Alternatively, the City could hire consultants.

The CCAC will work with the City to produce a brief CAP progress report every year. This report will summarize progress of each Plan action. The CCAC will rely on the collaboration and input of City staff to gather all the necessary information. The CAP progress report will be made publicly available through the City's website, and will be presented at a public City Council session.

The City will work with the CCAC, community members, and the Council to update the CAP every 5 years. This process will include updating greenhouse gas inventory information, updating CAP goals, re-prioritizing actions based on changing local circumstances and new technologies, and adding new strategies and actions as needed and based on community input.

4.5 Funding

Some of the strategies and actions in this CAP can be done with existing City staff and resources, and others will require new funding. These investments are motivated by the goal of avoiding the costly long-term consequences of inaction. The actions in this CAP also align with the island's Comprehensive Plan; implementing these actions will have benefits well beyond climate mitigation or adaptation.

Funding for the implementation of CAP actions will need to come from within the City budget, external grants, and new revenue sources. The annual City budget must signal the City's commitment to climate action.

Not all the actions can be implemented immediately. The CAP identifies the highest-priority actions and the Council and City staff will work to fund implementation of those actions first. It will also be important to anticipate and take advantage of windows of opportunity when costs are lower (e.g., during design and construction rather than after). Some actions, such as energy efficiency retrofits, can lead to significant savings for City operations; these savings could be allocated to a fund for reinvestment into other mitigation and adaptation actions.